## INWOOD'S TABLES

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PURCHASING of ESTATES, \&c.
W. Schooling


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## INW00D'S TABLES

## OF INTEREST AND MORTALITY <br> FOR THE PURCHASING OF ESTATES AND <br> VALUATION OF PROPERTIES <br> INCLUDING <br> ADVOWSONS <br> ASSURANCE POLICIES COPYHOLDS <br> DEFERRED ANNUITIES <br> FREEHOLDS <br> gROUND RENTS <br> IMMLDIATE ANNUITIES <br> LEASEHOLDS <br> LIFE INTERESTS <br> MORTGAGES <br> PERPETUITIES <br> RENEWALS OF LEASES <br> REVERSIONS <br> SINKING FUNDS

ETC. ETTC.

Cbittietb EDition, Revised and Extended

BY
WILLIAM SCHOOLING, F.R.A.S.

WITH LOGARITHMS OF NATURAL NUMBERS
AND
THOMAN'S LOGARITHMIC INTEREST AND ANNUITY TABLES


LONDON
CROSBY LOCKWOOD AND SON
7 STATIONERS' HALL COURT, LUDGATE HILL

## N OTE

TO THE

## THIRTIETH EDITION.

The present edition, besides retaining the additions to the preceding issue, has been carefully revised, and in it, thanks to the courtesy of correspondents, a few errors of the press will be found corrected.

Should any user of the book discover a mistake in even a single figure, the Publishers will be greatly obliged by having their attention called to it.

William Schooling.

17 Old Queen Street, Westminster, S.W.

## PREFACE

TO THE

## TWENTY-SIXTH EDITION

In response to requests received since the issue of the Twenty-fifth Edition of this work, Tables I. and XVII. of the Twenty-fourth and earlier editions are now given here, in similar form to that in which they there appeared. They have, however, been extended to many more rates of interest, and Table XVII. has been extended to longer terms of years than formerly. The old Table I. will be found in the present edition on pp . xx to xxxi , and the old Table XVII. on pp. xxxii to xxxix. The former of these two Tables, it may be pointed out, appears also for integral years to a larger number of decimal places in the Tables showing the present value of $£ \mathrm{I}$ per annum (pp. 50 to 85 , and 92 and 93). The present value of the reversion of a perpetuity appears to a larger number of decimal places on pp. 95 to 98 .

The values in the Table for purchasing of leases, estates, or annuities (pp. xx to xxxi) do not agree, so far as halfyears are concerned, with the Twenty-fourth edition. The method formerly adopted assumed interest to be convertible momently or continuously. This supposition, however, is not usually employed, but in practice the value of a lease or annuity certain, say for $22 \frac{1}{2}$ years at 6 per cent. per annum, would be considered to be equivalent to the value of a lease or annuity certain for double the term (or 45 years), at half the rate of interest (or 3 per cent. per annum). This value would be equal to 12.259 , whilst the value given in old editions of 'Inwood' is 12 ' 174 only, the latter representing the value of an annuity of 1 for $22 \frac{1}{2}$ years, computed at such a rate of interest convertible momently as would be equivalent to an
actual or effective rate of 6 per cent. per annum. The value assigned in practice of 12.259 is based upon a rate of interest at 3 per cent. per half-year, which is equal to an effective annual rate of 6.09 , or $£ 6 \mathrm{I} s .10 d$. per cent. per annum (see pp. 18 and $i 22$ ). It will be recognised therefore that in conformity with the usual practice the values now given for integral years assume interest to be convertible annually, and the values for the half-years assume it to be convertible halfyearly.

In response to a suggestion that the present value of $£ \mathrm{I}$ and of $£ \mathrm{I}$ per annum at 15 per cent. per annuin would be found convenient by mining engineers and others, a table giving these values has been computed, and is given on p. xl.

The method adopted was as follows. The present value of $£$ I per annum due at the end of 100 years was calculated by the aid of Gray's 24 figure logarithms, true to fifteen places of decimals; multiplying this amount by the rate of interest gives the arithmetical complement of the present value of $£ 1$ due at the end of 100 years; adding these two items together and deducting unity gives the amount of $£ \mathrm{I}$ per annum at the end of 99 years, and this process was continued to the end of the Table. In multiplying by the rate of interest it was convenient to employ Tate's Arithmometer, by means of which the necessary multiplications and additions were performed with the greatest ease.

The results were checked every ten years, and the number of decimal places was reduced from time to time, the result being brought true to nine places when, at the end of the calculations, the first year was reached.

In the present edition a few errors, which have been discovered since the publication of the last edition, have been corrected.

William Schooling.

## PREFACE

TO THE

## TWENTY-FIFTH EDITION

In the present edition of this work, many extensive additions have been made, and the book has been entirely reset; the size of the page has been enlarged, to allow of a more convenient arrangement of the Tables; the whole of it has been carefully revised; and the Tables have been placed in logical sequence. The volume now contains 336 pages demy 8 vo , as compared with 308 pages crown 8 vo in the last edition.

The principal alterations and additions may be briefly recorded. The Interest Tables, which were formerly scattered throughout the book, are now all brought together. The amount and present value of $£ \mathrm{I}$ and of $£_{\mathrm{I}}$ per annum at the same rate of interest all appear on the same page, instead of each of these items at varying rates of interest being tabulated separately. For most purposes this is more convenient, but on pp. 86-93 abbreviated Tables appear in the old form.

Throughout the book any Table that occupies two pages is arranged so that the whole of it may be seen at one opening-a detail that adds much to the convenience of using the Table.

The Rates of Interest for which Tables were previously given were $2,2 \frac{1}{2}, 3,3 \frac{1}{2}, 4,4 \frac{1}{2}, 5,6,7,8,9$, 10 . These are all retained, and six other rates- $1,1 \frac{1}{4}, 1 \frac{1}{2}, 1 \frac{3}{4}, 2 \frac{1}{4}, 2 \frac{3}{4}$-have been added.

Five places of decimals are given instead of four, as was the case for some of the rates in previous editions.

The abbreviated Tables in the old form are given at $3 \frac{1}{4}$, $3 \frac{3}{4}, 4 \frac{1}{4}, 4 \frac{3}{4}$, and $5 \frac{1}{2}$ per cent., in addition to the 18 rates mentioned above.

The present value of Perpetuities and of the Reversion to a Perpetuity are given in very much greater detail than before, both as regards the rates of interest and the number of decimal places.

The Tables dealing with the Renewals of Leases are given at more rates of interest, while the Miscellaneous Tables, such as those on Pp. 104, 105, 124, etc., are extended.

The Sinking Fund Table is now given for 20 different rates of interest to 6 places of decimals for every year from I to 100, as compared with io rates of interest to (mostly) 4 places.

The Tables showing the Value of an Annuity yielding interest at one rate, and providing for replacing capital at another rate, now occupy six pages instead of less than two, and are given to 5 places of decimals instead of 2 , as well as at many more rates of interest.

On pp. 122 and 123 some important Tables appear dealing with Interest payable half-yearly, quarterly, and monthly, together with a Table of constant factors for finding the values of Annuities payable half-yearly, quarterly, and monthly from the values of yearly annuities. These are quite new to the book.

The decimals of $£ \mathrm{I}$ are given for every farthing instead of for every penny, and the decimals of a year are given in more detail.

In the Mortality Tables and the combined Mortality and Interest Tables, very many additions of much importance have been made.

Apart from more numerous Tables and lower rates of interest, the values of the benefits according to the Healthy Males Table of the Institute of Actuaries and the Govern-
ment Experience Table of 1883 are introduced. These Tables are of the greatest value, and many of the items deduced from them are tabulated in considerable detail.

Among the Mortality Tables the English No. 3 also appears; while here, as throughout the book, all kindred tables appear on consecutive pages.

Users of the book will find reference to it facilitated, if by a glance at the Table of Contents they grasp the order in which the contents are arranged. It will be seen to be-
I. Interest apart from lives.
2. Lives apart from interest.
3. Interest in connection with single lives.
4. Interest in connection with two lives.
5. Interest in connection with three lives.
6. Logarithmic tables.

In each of the divisions $3,4,5$, the same order is maintained. The additions in the parts of the book dealing with Interest and Mortality combined are too numerous for detailed record. Everything of any value in former editions is retained, while additions have been made that bring the whole thoroughly up to date as regards both the Mortality Tables and the rates of Interest employed.

In addition to this, care has been taken to supply such data in the Tables, and such explanations and examples in the Introduction, as to make it a perfectly simple matter to calculate the values of benefits for other ages or at other rates of interest than are contained in the Tables.

If any required information is rot found in the Tables, a reference to the part of the Introduction dealing with the subject in question will probably show how the information may readily be arrived at.

Special attention may perhaps be called to the Premium Conversion Tables on pp. 185 and 186 , and to the explanation of them given in the Introduction. The Annual Premium Table is given in a novel form, which, it is believed, (viii)
offers considerable advantages. Both the Conversion Tables will be found very convenient for many purposes, and readers unfamiliar with such tables would do well to spend a few minutes in grasping their nature, which is quite simple.

The Post Office Annuities are given in less detail than before, and the average rates of Insurance Companies for annuities and assurances are added.

A Table of Logarithms of Natural Numbers has been introduced in order to facilitate calculation, and especially to enable use to be made of the extremely valuable Logarithmic Tables of Interest by M. Fédor Thoman without reference to any other book. Logarithms are very easy to use, and every one engaged in calculations should avail himself of the enormous advantages they offer.
M. Thoman's Tables have been printed from stereotype plates, in which any errors that have been noticed have been corrected, but they have not been re-checked for this edition.

The difficulty of ensuring accuracy in so vast a number of figures will be well understood, and it can scarcely be hoped that no errors exist. Very great care has been taken in calculating and checking the Tables, and in reading and re-reading the proofs, but as there are considerably more than a quarter of a million figures in the book, the entire absence of errors is improbable. Any users of the book who come across even a single mistake would confer a benefit by reporting it to the Publishers for correction in future editions.

The great majority of the calculations have been made by Tate's Arithmometer. Even with this powerful aid the preparation of the book, involving the formation of many fresh Tables and the checking of many existing oncs, has been an arduous task; without an efficient calculating machine it would have been scarcely practicable.

In former editions the headings of the Tables rather suggested the limitation of their use to one specific purpose, whereas most of the Tables are available for many purposes.

The headings of the Tables are now stated in a more general form, and in the Introduction examples are given of some of the various uses to which they may be put. In consequence, some habitual users of 'Inwood' may, perhaps, miss the familiar heading, and at first fail to recognise a well-known Table in its new garb. To obviate any inconvenience of this kind, and to increase the facility with which the book can be consulted, a full and specially arranged Table of Contents (pp. xi-xvi) has been prefixed, by reference to which any information needed may at once be found. An extensive collection of Examples has also been supplied (pp. 42-48), in which the actual working of every Table is illustrated.

The book, as it now stands, serves innumerable purposes, but any suggestions (to be addressed to the Publishers) tending to increase its usefulness and convenience will be greatly appreciated and carefully considered, with a view to their adoption in future issues.

In regard to such of the Tables in the book as are based on the Healthy Males Tables of Mortality, I am greatly indebted to the Council of the Institute of Actuaries, who have kindly given permission for the use in this volume of their valuable copyrights.

William Schooling.

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## INTEREST TABLES

TABLE FOR THE PURCHASING OF LEASES, ESTATES, OR ANNUITIES FOR TERMS OF YEARS CERTAIN<br>present value of the reversion of a PERPETUTTY<br>PRESENT VALUE OF ONE POUND AND OF ONE POUND PER ANNUM

For Examples see pages xviii, xix. For Explanations see pages 10, 12, 13.

## EXAMPLES

## of the Use of Tables on Pages xx-xl

(1) Find the price to be paid for a lease yielding a clear annual rent of $£_{\mathrm{I} 32}$ for $25 \frac{1}{2}$ years in order to make $3 \frac{1}{2}$ per cent. on the purchase price.


There is a difference of $£ 3.564$ or $£ 3$ ins. 3 d. due to the fact that $16{ }^{3}$ equals only 16.75 c , whereas the correct figure is 16.777 . The difference between these two is $\cdot 027$, and this multiplied by $\mathrm{I}_{2} 2$ gives $3 \cdot 564$, the difference between the two answers.
(2) Find the present value of an annuity of $£ 80$ to run for 65 years certain such that the purchaser will obtain interest at $4 \%$.

$$
\begin{aligned}
& 1 \text { per annum for } 65 \text { years }=£^{23.047} \\
& 80 \quad " \quad, \quad=23.047 \times 80=1843.760 \\
& \text { or } 23 \times 80=£ 1840
\end{aligned}
$$

The explanation of the difference between the two answers is given under example ( I ).

Such transactions as these two imply that if the purchaser drew interest on his capital at the rate assumed and invested the balance of the annuity at compound interest, this balance at the end of the term v:ould amount to the purchase price and so replace the capital invested. Thus, to take the last example :-

The annual income $=£ 80 \cdot 000$
$4 \%$ on price $£ 1843.760=73.75^{\circ}$
The annual balance $=\overline{£^{6.250}}$
$£^{6} 650$ per annum accumulated for 65 years

$$
=6.250 \times 294^{\circ} 968=\leq 843.550
$$

This amount agrees closely with the value found, and wouid agree exactly if more places of decimals were used in the calculation.
(3) Find the present value of a perpetual iniome of $£ 25$ per annum to commence 30 years hence so that the investment may yield 5 per cent.

Value of reversion to a perpetuity of $£ \mathrm{r}=£ 4.628$ | $" \quad " \quad £_{25}^{25}=4.628 \times 25$ | $=115.700$ |
| ---: | :--- |
|  | or $25 \times 4 \frac{3}{4}=£ 11815$ s. |

The difference between the answers is explained under example (1).

The nature of reversions is explained on $\mathrm{pp} .13,14$.
(4) Find the present value of $£ 1,000,000$ due at the end of 100 years at $15 \%$.

The present value of 1 in 100 years $=£ .0000009$
$" \quad " \quad=0000009 \times 1,000,000!=9$
This example is principally given to show the startling fact that a modest $18 s$. would at $15 \%$ compound interest accumulate in 100 years to the vast amount of $£ 1,000,000$.
(5) Find the present value of $£ 40$ per annum to be received for 20 years certain so that the purchaser would obtain $15 \%$.

$$
£_{40} \begin{aligned}
& \text { £ per annum for } 20 \text { years }=£ 6 \cdot 2593315 \\
& " \quad=6 \cdot 2593315 \times 40=250.3732600
\end{aligned}
$$

Other examples of the working of the tables in this book are given on pp. $4^{2-48}$

| TABLE for the PURCHASING of Leases，Estates，or Annuities，for terms of years certain at Rates from $1 \frac{1}{2}$ to 10 per cent．Interest which the Purchaser may thereby make of his money |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Years | Years＇ Purchase | \％ | $\begin{gathered} \text { Yeare' } \\ \text { Purchase } \end{gathered}$ | \％ | $\begin{aligned} & \text { Years' } \\ & \text { Purchaee } \end{aligned}$ | \％ | $\begin{gathered} \text { Yeare' } \\ \text { Purchase } \end{gathered}$ |  |  |
| ${ }^{\frac{1}{2}}$ | －496 | ${ }^{\frac{1}{2}}$ | $\cdot 496$ | $\frac{1}{2}$ | .495 | $\frac{1}{2}$ | －494 | $\frac{1}{2}$ |  |
| I | ＇985 | ${ }^{1}$ | 983 |  | 980 |  | －978 |  |  |
| I $\frac{1}{2}$ | 1.478 | $1 \frac{1}{2}$ | I．474 | $\underline{1}$ | 1.470 | $1 \frac{1}{2}$ | $1 \cdot 467$ | $1 \frac{1}{2}$ |  |
| 1 | 1.956 | 2 | 1.949 | 21 | 1942 | 2 | 1.934 | 2 |  |
| 212 | 2.445 | $2 \frac{1}{2}$ | 2.436 | $2 \frac{1}{2}$ | 2.427 | $2 \frac{1}{2}$ | 2.418 | $2 \frac{1}{2}$ | 2 ${ }^{\frac{1}{2}}$ |
| 3 | 2.912 | 3 | $2 \cdot 898$ | 3 | 2.884 | 3 | $2 \cdot 870$ | $2{ }^{\frac{3}{4}}$ |  |
| $3{ }^{\frac{1}{2}}$ | $3 \cdot 397$ | $3 \frac{1}{2}$ | 3．38I | $3 \frac{1}{2}$ | 3.364 | $3 \frac{1}{4}$ | 3.348 | $3 \frac{1}{4}$ | 3 ${ }^{\frac{3}{2}}$ |
| 4 | $3 \cdot 854$ | $3{ }^{4}$ | $3 \cdot 83 \mathrm{I}$ | $3 \frac{3}{4}$ | $3 \cdot 808$ | 3年 | $3 \cdot 785$ | 3年 | 4 |
| $4{ }^{\frac{1}{2}}$ | 4.336 | $4{ }^{\frac{3}{3}}$ | $4 \cdot 309$ | $4 \frac{3}{3}$ | 4.283 | 4 ${ }^{\frac{1}{3}}$ | 4.257 4.679 | $4{ }^{4} \frac{1}{\frac{3}{3}}$ | ${ }^{4 \frac{1}{2}}$ |
| 5 | 4.783 | $4 \frac{3}{4}$ | 4.748 | $4 \frac{3}{4}$ | 4.713 | $4 \frac{3}{4}$ | $4 \cdot 679$ | $4 \frac{3}{4}$ | 5 |
| $5^{\frac{1}{2}}$ | $5 \cdot 260$ | $5{ }_{5}{ }^{\frac{1}{3}}$ | $5 \cdot 222$ | $55^{\frac{1}{3}}$ | 5．184 | $5{ }^{\frac{1}{4}}$ | $5 \cdot 146$ | $5{ }^{\frac{1}{4}}$ | $5^{\frac{1}{2}}$ |
| 6 | $5 \cdot 697$ | $5 \frac{3}{4}$ | $5 \cdot 649$ | $5_{6}^{3}$ | $5 \cdot 601$ | ${ }_{6}{ }^{1}$ | 5.554 6.016 | ${ }_{6}{ }^{\frac{1}{2}}$ | ${ }^{6}$ |
| 7 | $6 \cdot 598$ | $6 \frac{1}{2}$ | $6 \cdot 535$ | $6 \frac{1}{2}$ | 6.472 | $6 \frac{1}{2}$ | 6.410 | $6 \frac{1}{2}$ | ${ }_{2}$ |
| $7 \frac{1}{2}$ | $7 \cdot 069$ |  | $7 \cdot 000$ | 7 | $6 \cdot 933$ | 7 | 6.866 | $6 \frac{3}{4}$ | $7 \frac{1}{2}$ |
| 8 | 7.486 | $7{ }^{\frac{1}{2}}$ | 7.405 | $7 \frac{1}{2}$ | $7 \cdot 325$ | $7 \frac{1}{4}$ | 7.247 | $7 \frac{3}{4}$ | 8 |
| 82 | 7.953 | 8 | 7.866 | $7 \frac{3}{4}$ | 7.781 | $7 \frac{3}{4}$ | $7 \cdot 697$ | $7 \frac{3}{4}$ | $8 \frac{1}{2}$ |
| 9 | $8 \cdot 36 \mathrm{I}$ | $8 \frac{1}{4}$ | $8 \cdot 260$ | $8 \frac{1}{4}$ | $8 \cdot 162$ | $8 \frac{1}{4}$ | 8.066 | 8 | 9 |
| $9 \frac{1}{2}$ | 8.823 | $8 \frac{3}{4}$ | $8 \cdot 717$ | $8 \frac{3}{4}$ | 8.613 | $8 \frac{1}{2}$ | 8.510 | $8 \frac{1}{2}$ | $9 \frac{1}{2}$ |
| 10 | $9 \cdot 222$ | $9{ }^{\frac{1}{4}}$ | $9 \cdot 101$ | 9 | 8.983 | 9 | 8.866 | $8 \frac{3}{4}$ | 10 |
| 102 | 9．68I | $9 \frac{3}{4}$ | $9 \cdot 554$ | $9 \frac{1}{2}$ | 9.428 | 9 ${ }^{\frac{1}{2}}$ | $9 \cdot 306$ | $9{ }^{\frac{1}{4}}$ | $10 \frac{1}{2}$ |
| II | ${ }^{10.071}$ | 10 | 9.927 | 10 | $9 \cdot 787$ | $9 \frac{3}{4}$ | 9.649 | $9 \frac{3}{4}$ | II |
| 112 | $10 \cdot 527$ | $10 \frac{1}{2}$ | 10．376 | $10 \frac{1}{3}$ | $10 \cdot 228$ | $10{ }^{\frac{2}{4}}$ | 10.083 | 10 | II $\frac{1}{2}$ |
| 12 | 10.908 | II | $10 \cdot 740$ | 108 ${ }^{\frac{8}{4}}$ | $10 \cdot 575$ | $10 \frac{1}{8}$ | 10.415 | 10 ${ }^{\frac{1}{3}}$ | 12 |
| 123 | 11－359 | II $1 \frac{1}{4}$ | II．184 | I $11 \frac{1}{4}$ | ${ }_{11} \cdot 012$ | 11 | 10.843 | $10 \frac{8}{4}$ | 12313 |
| 13 | 11.732 | $1 \mathrm{II}_{\frac{3}{4}}$ | 11．538 | 172 | II•348 | $11 \frac{1}{4}$ | II．164 | $1 I_{1}^{1}$ | 13 |
| $13{ }^{\frac{1}{2}}$ | 12．180 | $12{ }^{1}$ | 119977 | 12 | 11.780 | $11{ }^{3}$ | 11558 | $1{ }_{12} 12$ | $13 \frac{1}{2}$ |
| 14 | 12.543 | 122 $\frac{1}{2}$ | 12322 | $122 \frac{1}{4}$ | 12．106 | 12 | 11．896 | 12 | 14 |
| $14 \frac{1}{2}$ | 12.988 | 13 | 12.758 | 123 | 12.533 | $12 \frac{1}{2}$ | 12.314 | $12{ }^{1}$ | 143 |
| 15 | 13.343 | $13 \frac{1}{4}$ | 13.093 | 13 | 12.849 | $12 \frac{8}{4}$ | 12.612 | $12 \frac{1}{2}$ | 15 |
| $15 \frac{1}{2}$ | 13.784 | $13 \frac{3}{4}$ | 13.524 | $13 \frac{1}{2}$ | 13.27 I | $13 \frac{1}{4}$ | 13.025 | 13 | 153 |
| 16 | 14.131 | 14 $\frac{1}{1}$ | 13.851 | ${ }^{1} 3 \frac{8}{4}$ | 13．578 | $13 \frac{1}{2}$ | 13.313 | $13 \frac{1}{2}$ | 16 |
| 16 ${ }^{\frac{1}{2}}$ | 14.569 | $14 \frac{1}{2}$ | 14.278 | ${ }^{1} 4 \frac{1}{4}$ | 13.995 | 14 | 13.720 | $13 \frac{8}{4}$ | 161 |
| 17 | 14.908 | 15 | 14.595 | $14 \frac{1}{2}$ | 14.292 | $14 \frac{1}{4}$ | 13.998 | 14 | 17 |
| $17 \frac{1}{2}$ | 15.341 | ${ }^{1} 5 \frac{1}{4}$ | 15.018 | 15 | 14.704 | $14 \frac{3}{4}$ | 14.400 | 142 ${ }^{\frac{1}{2}}$ | 17312 |
| 18 | 15.673 | $15 \frac{3}{4}$ | 15.327 | 154 ${ }^{\frac{1}{4}}$ | 14.992 | 15 | 14.668 | $14 \frac{8}{4}$ | 18 |
| $18 \frac{1}{2}$ | $16 \cdot 103$ | 16 | ${ }_{1} 5.746$ | I $5 \frac{5}{\frac{3}{4}}$ | 15.400 | $15 \frac{1}{2}$ | 15.064 | 15 | 1821 |
| 19 | 16.426 | 161 | 16.046 | 16 | 15.678 | $15 \frac{8}{4}$ | 15.323 | $15^{1}$ | 19 |
| 1912 | 16.853 | $16 \frac{3}{4}$ | $16 \cdot 461$ | 16 ${ }^{\frac{1}{2}}$ | $16 \cdot 082$ | 16 | 15.715 | $15 \frac{8}{4}$ | 192 |
| 20 | $17 \cdot 169$ | $17 \frac{1}{4}$ | 16.753 | 163 | $16 \cdot 351$ | $16 \frac{1}{4}$ | ${ }^{15} 5964$ | 16 | 20 |
| 20를 | 17.592 | 178 | $17 \cdot 163$ | ${ }^{1} 7$ | $16 \cdot 750$ | $16 \frac{3}{4}$ | $16 \cdot 350$ | $16 \frac{1}{4}$ | $20 \frac{1}{2}$ |
| 21 | 17.900 | 18 | 17.448 | ${ }^{17} 7$ | 17.011 | 17 | $16 \cdot 590$ | $16 \frac{1}{2}$ | 2 I |
| 21. | 18.319 18.621 | ${ }^{18} 8$ | 17．854 | －173 | 17.405 <br> 17658 | $17 \frac{1}{2}$ | 16.972 | 17 | $2 \mathrm{LI}{ }^{\frac{1}{2}}$ |
| 22 | 18.621 | 18\％${ }^{2}$ | 18.130 | $18 \frac{1}{4}$ | $17 \cdot 658$ | $17 \frac{3}{4}$ | 17.203 | $17 \frac{1}{4}$ | 22 |
| 22 $\frac{1}{2}$ | 19.037 | 19 | 18.533 | $18 \frac{1}{3}$ | 18.047 | 18 | 17.580 | $17 \frac{1}{2}$ | 222 |
| 23 | 19.331 | 1993 | 18.801 | 188 | 18.292 | ${ }^{18} 8$ | 17.803 | $17 \frac{8}{4}$ |  |
| 23⿺𠃊 | 19.743 | $19 \frac{3}{4}$ | 19.200 | $19 \frac{1}{4}$ | 18.677 | $18 \frac{3}{4}$ | 18．174 | $18 \frac{1}{4}$ | 23年 |
| 24 | 20.030 20.439 | 20 | 19.461 19.855 | 1993 | 18.914 19.294 | 18 | 18.389 18.755 | $18 \frac{1}{2}$ |  |
| $24 \frac{1}{2}$ 25 | 20.439 20.720 | 20，${ }^{20}$ | 19.855 $20 \cdot 109$ | ${ }^{193}$ | 19.294 19.523 | 194 | 18.755 18.962 | 19 | ${ }^{245}$ |

Examples．－A lease or annuity for 14 years to make 2 per cent．and to get back the principal is worth $12 \cdot 106$ ，or 12 years＇purchase of the clear annual rent．At 3 per cent．it is worth $11 \cdot 296$ ，or $11 \frac{1}{4}$ years＇parchase．

TABLE for the PURCHASING of Leases, Estates, or Annuities, for terms of years certain at Rates from $1 \frac{1}{2}$ to 10 per cent. Interest which the

Purchaser may thereby make of his money

| Years | $\underset{\text { Purohase }}{\text { Years' }} 2 \frac{1}{2} \%$ |  | $\begin{gathered} \text { Years' } \\ \text { Purchase } \end{gathered} \frac{3}{4} \%$ |  | $\begin{array}{\|l\|l} \text { Years' } \\ \text { Purchase } \end{array}$ | 3\% | $\underset{\text { Yurchase }}{\text { Years' }}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\frac{1}{2}$ | 494 | $\frac{1}{2}$ | -493 | $\frac{1}{2}$ | 493 | $\frac{1}{2}$ | 1 | $\frac{1}{2}$ | $\frac{1}{2}$ |
| ${ }^{1}$ | -976 |  | -973 |  | -971 |  | -966 |  |  |
| $\mathrm{I}_{2}$ | 1.463 | $1 \frac{1}{2}$ | 1.460 | ${ }^{1} \frac{1}{2}$ | 1.456 | $1 \frac{1}{2}$ | I 449 | $\underline{1}$ | 12 |
| 2 | I. 927 | 1 | 1.920 |  | 1.913 |  | 1.900 |  |  |
| $2 \frac{1}{2}$ | 2.409 | $2 \frac{1}{2}$ | 2.400 | $2 \frac{1}{2}$ | $2 \cdot 391$ | $2 \frac{1}{2}$ | $2 \cdot 374$ | $2 \frac{1}{4}$ | $2 \frac{1}{2}$ |
| 3 | 2.856 | $2 \frac{3}{4}$ | 2.842 | $2 \frac{3}{4}$ | 2.829 | $2 \frac{3}{4}$ | $2 \cdot 802$ | $2 \frac{18}{4}$ | 3 |
| $3{ }^{\frac{1}{2}}$ | 3.331 | $3{ }^{\frac{1}{4}}$ | 3.315 | $3 \frac{1}{4}$ | 3.299 | 34 | $3 \cdot 267$ | $3 \frac{1}{4}$ | $3 \frac{1}{2}$ |
| 4 | $3 \cdot 762$ | $33^{\frac{8}{4}}$ | 3.739 | $3 \frac{3}{4}$ | 3.717 | $3 \frac{3}{\frac{3}{1}}$ | 3.673 | 3年 | 4 |
| 4 ${ }^{\frac{1}{2}}$ | $4 \times 231$ | 4 ${ }^{\frac{1}{4}}$ | $4 \cdot 206$ | $4{ }^{\frac{1}{4}}$ | 4.180 | $4 \frac{1}{4}$ | 4.130 | $4 \frac{1}{1}$ | $4{ }^{\frac{1}{2}}$ |
| 5 | $4 \cdot 646$ | 4 $\frac{3}{4}$ | 4.613 | 4 ${ }^{\frac{1}{2}}$ | $4 \cdot 580$ | 42 | 4.515 | $4 \frac{1}{2}$ | 5 |
|  | $5 \cdot 109$ | 5 | $5 \cdot 072$ | 5 | 5.036 | 5 | $4 \cdot 964$ | 5 | $5 \frac{1}{2}$ |
| 6 | $5 \cdot 508$ | $5 \frac{1}{2}$ | $5 \cdot 462$ | $5 \frac{1}{2}$ | 5.417 | $5 \frac{1}{2}$ | $5 \cdot 329$ | $5 \frac{1}{1}$ | 6 |
| $6 \frac{1}{2}$ | 5.965 | 6 | 5.915 | 6 | 5.866 | $5 \frac{9}{4}$ | $5 \cdot 769$ | ${ }_{6}{ }^{\frac{9}{4}}$ | ${ }^{\frac{1}{2}}$ |
|  | 6.349 | $6 \frac{1}{4}$ | $6 \cdot 289$ | $6 \frac{1}{4}$ | $6 \cdot 230$ | $6 \frac{1}{4}$ | $6 \cdot 115$ | 6 | 7 |
| $7 \frac{1}{2}$ | 6.800 | $6 \frac{3}{4}$ | $6 \cdot 736$ | $6 \frac{3}{4}$ | 6.672 | $6 \frac{3}{4}$ | $6 \cdot 546$ | $6 \frac{1}{2}$ | $7 \frac{1}{2}$ |
| 8 | 7170 | $7 \frac{1}{4}$ | 7.094 | 7 | 7.020 | 7 | 6.874 | $6 \frac{3}{4}$ | 8 |
| $8 \frac{1}{2}$ | 7.615 | $7 \frac{1}{2}$ | 7.534 | $7{ }^{\frac{1}{2}}$ | 74 | $7 \frac{1}{2}$ | 7.298 | $7 \frac{1}{4}$ | $8 \frac{1}{2}$ |
| 9 | 7.971 | 8 | 7.378 | 8 | 7.786 | $7 \frac{3}{4}$ | 7.608 | $7{ }^{\frac{1}{2}}$ | 9 |
| 92 | 8.410 | $8 \frac{1}{2}$ | 8.311 | $8 \frac{1}{4}$ | 8.213 | $8 \frac{1}{4}$ | 8.023 | 8 | $9{ }^{\frac{1}{2}}$ |
| 10 | 8.752 | $8 \frac{8}{4}$ | 8.640 | 8塈 | $8 \cdot 530$ | $8 \frac{1}{2}$ | $8 \cdot 317$ | $8 \frac{1}{4}$ | 10 |
| $10 \frac{1}{2}$ | 9•185 | $9{ }^{\frac{1}{4}}$ | $9 \cdot 066$ | 9 | $8 \cdot 950$ |  | $8 \cdot 724$ | $8 \frac{3}{4}$ | 102 $\frac{1}{2}$ |
| 11 | 9.514 | $9{ }^{\frac{1}{2}}$ | $9 \cdot 382$ | $9 \frac{1}{2}$ | 9.253 | $9{ }^{\frac{1}{4}}$ | 9.002 | 9 | 1 I |
| 113 | 9.941 | 10 | 9.802 | $9 \frac{3}{4}$ | 9.665 | $9{ }^{\frac{3}{4}}$ | $9 \cdot 401$ | $9{ }^{9}$ | II ${ }^{\frac{1}{2}}$ |
| 12 | 10.258 | $10 \frac{1}{4}$ | 10.104 | 10 | 9.954 | 10 | $9 \cdot 663$ | $9{ }^{\frac{3}{4}}$ | 12 |
| $12 \frac{1}{2}$ | $10 \cdot 679$ | $10 \frac{8}{4}$ | 10.518 | $10 \frac{1}{2}$ | 10.360 | $10 \frac{1}{4}$ | 10.054 | 10 | 121 ${ }^{\frac{1}{2}}$ |
| 13 | 10.983 | II | 10.807 | 103 ${ }^{\frac{3}{4}}$ | 10.635 | $10 \frac{3}{4}$ | $10 \cdot 303$ | $10 \frac{1}{4}$ | 13 |
| $13 \frac{1}{2}$ | II.398 | $\mathrm{II}_{1}^{1}$ | II 214 | $1 \mathrm{II}^{\frac{2}{4}}$ | II 034 | 11 | 10.686 | $10 \frac{3}{4}$ | $13{ }^{\frac{1}{2}}$ |
| 14 | $1 \mathrm{I} \cdot 69 \mathrm{I}$ | $11{ }^{\text {a }}$ | 11.491 | $1{ }_{1} 12$ | II 296 | $11{ }^{1}$ | $10 \cdot 921$ | II | I4 |
| $14 \frac{1}{2}$ | 12.100 | 12 | 11.891 | 12 | 11.688 | $11 \frac{3}{4}$ | 11.296 | $1 \mathrm{II}_{4}^{1}$ | $14^{\frac{1}{2}}$ |
| 15 | $12 \cdot 38 \mathrm{I}$ | I2 21 | 12.157 | 12 | 11.938 | 12 | 11.517 | $11 \frac{1}{2}$ | 15 |
| $15^{\frac{1}{2}}$ | 12.785 | $12{ }^{\frac{3}{4}}$ | 12.551 | $12{ }^{\frac{3}{3}}$ | 12.323 | $12 \frac{1}{4}$ | 11.885 | 12 | $5^{\frac{1}{2}}$ |
| 16 | 13.055 | 13 | 12.805 | $12 \frac{3}{4}$ | 12.561 | $12 \frac{1}{2}$ | 12.094 | 12 | 161 |
| $16{ }^{\frac{1}{2}}$ | 13.452 | $13{ }^{1}$ | 13.192 | $13 \frac{1}{4}$ | 12.939 13.166 | 13 | 12.454 | $12 \frac{1}{2}$ | $16 \frac{1}{2}$ |
| 17 | 13.712 | $13 \frac{3}{4}$ | 13.435 | $13{ }^{13}$ | 13.166 | $13{ }^{1}$ | 12.651 | $12 \frac{3}{4}$ | 17 |
| $17 \frac{1}{\frac{1}{2}}$ | $14 \cdot 104$ | 54 | 13.817 | $13 \frac{3}{4}$ | 13.538 | $13 \frac{1}{2}$ | 13.004 | 13 | 178 |
| 18 | 14.353 | $14 \frac{1}{4}$ | 14.049 |  | 13.754 | $13 \frac{8}{4}$ | 13.190 | $13 \frac{1}{4}$ | 18 |
| $18 \frac{1}{2}$ | 14.739 | $14^{\frac{3}{4}}$ | 14.424 | $14{ }^{\frac{1}{3}}$ | 14.119 | 14 | 13.535 | $13 \frac{1}{2}$ | 182 ${ }^{1}$ |
| 19 | 14.979 | 15 | 14.646 | $14 \frac{3}{4}$ | 14.324 | $14{ }^{1}{ }^{\frac{1}{4}}$ | 13.710 | $13 \frac{9}{4}$ | 19 |
| $19^{\frac{1}{3}}$ | 15.359 | 154 | 15.015 | 15 | 14.682 | $14 \frac{3}{4}$ | 14.047 | 14 | 19 20 20 |
| 20 | 15.589 | $15 \frac{1}{2}$ | 15.227 | $15 \frac{1}{4}$ | 14.877 | 15 | 14.212 | $14 \frac{1}{4}$ | 20 |
| $20 \frac{1}{2}$ | 15.964 16.185 | 16 | 15.591 15.793 | 15 | 15.229 15.415 | $15{ }^{1}$ |  | $14{ }^{1} \frac{1}{2}$ | $20 \frac{1}{2}$ |
| 2 LI | $16 \cdot 185$ $16 \cdot 554$ | 161 ${ }_{1}^{1}$ | 15.793 16.150 | $\begin{array}{r}15 \frac{3}{4} \\ 16 \frac{1}{4} \\ \hline\end{array}$ | 15.415 15.761 |  | 14.698 15 | 14 | 2 L |
| $22^{\frac{1}{2}}$ | 16.554 16.765 | $16 \frac{2}{2}$ $16 \frac{2}{4}$ | 16.150 16.344 | $16 \frac{1}{16}$ | 15.761 15.937 | 154 16 16 | 15.021 <br> 15.167 | 15 | $22^{\frac{1}{2}}$ |
| $22 \frac{1}{2}$ | 17•129 | $17 \frac{1}{4}$ | 16.695 | $16 \frac{3}{4}$ | $16 \cdot 276$ | $16 \frac{1}{4}$ | 15.483 | $15 \frac{1}{2}$ | 221 |
| 23 | 17.332 | $17 \frac{1}{4}$ | 16.879 | 17 | 16.444 | $16 \frac{1}{2}$ | 15.620 | $15^{\frac{1}{2}}$ | 23 |
| 2323 | 17.690 | $17 \frac{3}{4}$ | 17.225 | $17 \frac{1}{4}$ | 16.777 | $16 \frac{8}{4}$ | 15.929 | 16 | $23 \frac{1}{2}$ |
| 24 | 17.885 | 18 | 17.401 | $17 \frac{1}{2}$ | 16.936 | 17 | ${ }_{16} 16.58$ | 16 | 24 |
| $24^{\frac{1}{2}}$ | 18.238 18.424 | $18 \frac{1}{4}$ | 17.740 17.908 | $17 \frac{3}{4}$ | 17.262 17.413 | $17 \frac{1}{4}$ | 16.361 I 6.482 | $16 \frac{1}{1}$ | $24^{\frac{1}{2}}$ |
| 25 | 18.424 | $18 \frac{1}{2}$ | 17.908 | 18 | 17.413 | $17 \frac{1}{2}$ | 16.482 | $16 \frac{1}{2}$ | 25 |

For Explanations and Examples see pp. xviii., xix. Tables continued on pp. xxii. to xxxi.

## INTEREST TABLES

TABLE for the PURCHASING of Leasen，Estates，or Annuitien，for terme of years certain at Rates from $1 \frac{1}{2}$ to 10 per cent．Interest which the

Purchaser may thereby make of his money

| Years | $\left.\begin{array}{\|c\|} \hline \text { Yeara' } \\ \text { Purchase } \end{array} 1 \frac{1}{2} \% \right\rvert\,$ |  | $\underset{\text { Purohase }}{\text { Years' }} 1 \frac{3}{4} \%$ |  | $\text { Yurchase } 2 \%$ |  | $\underset{\text { Purehase }}{\text { Years' }} 2 \frac{1}{4} \%$ |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 25글 | 21－125 | 21 | 20＊499 | $20 \frac{1}{2}$ | 19．894 | 20 | 19.324 | $19{ }^{\frac{1}{4}}$ | $5^{\frac{3}{2}}$ |
| 26 | 21－399 | $21 \frac{1}{2}$ | $20 \cdot 746$ | $20 \frac{3}{4}$ | 20．121 | 20 | 19.523 | 192 | 26 |
| $26 \frac{1}{2}$ | 21.800 | 214 | 21－132 | 21 $\frac{1}{4}$ | 20.492 | 20늘 | 19.880 | 20 | 26를 |
| 27 | 22.068 | 22 | 21.372 | 21. | 20．707 | $20 \frac{3}{4}$ | 20.072 | 20 | 27 |
| $27 \frac{1}{2}$ | 22.466 | 22213 | 21.754 | 21.4 | 21.074 | 21 | 20.423 | 2012 | $27 \frac{1}{2}$ |
| 28 | $22 \cdot 727$ | 223 | 21.987 | 22 | 21.281 | $21 \frac{1}{4}$ | $20 \cdot 608$ | $20 \frac{1}{2}$ | 28 |
| $28 \frac{1}{2}$ | 23．12I | 23 | $22 \cdot 365$ | 22 ${ }^{\frac{1}{4}}$ | 21．644 | 215 | 20.955 | 21 | $28 \frac{1}{2}$ |
| 29 | 23.376 | $23 \frac{1}{2}$ | 22.592 | 22 $\frac{1}{2}$ | 21.844 | 218 | $21 \cdot 132$ | 21.1 | 29 |
| $29^{\frac{1}{2}}$ | 23.767 | 23年 | 22.966 | 23 | $22 \cdot 202$ | $22 \frac{1}{4}$ | 21.474 | 21.1 | 29 ${ }^{\frac{1}{2}}$ |
| 30 | 24.016 | 24 | 23． 186 | $23^{\frac{1}{4}}$ | 22.396 | 221 | 21.645 | 215 | 30 |
| $30 \frac{1}{2}$ | 24.404 | 24年 | 23.556 | 23交 | 22.750 | 223 | 21.983 | 22 | $30^{\frac{1}{2}}$ |
| 3 I | 24.646 | $24 \frac{3}{4}$ | 23.770 | $23 \frac{3}{4}$ | 22.938 | 23 | 22．147 | $22 \frac{1}{4}$ | 3 I |
| $3{ }^{1 \frac{1}{2}}$ | 25.031 | 25 | 24．136 | $24 \frac{1}{4}$ | $23 \cdot 287$ | 23 $3 \frac{1}{4}$ | 22.480 | $22 \frac{1}{2}$ | $31^{\frac{1}{2}}$ |
| 32 | 25.367 | $25^{\frac{1}{3}}$ | 24.344 | $24 \frac{1}{4}$ | 23.468 | $23 \frac{1}{2}$ | 22.638 | $22 \frac{3}{4}$ | 32 |
| $32^{1}$ | $25 \cdot 648$ | $25 \frac{3}{4}$ | 24．707 | $24 \frac{3}{4}$ | 23.813 | $23 \frac{3}{4}$ | $22 \cdot 966$ | 23 | $32{ }^{\frac{1}{2}}$ |
| 33 | 25.879 | 26 | 24.908 | 25 | 23.989 | 24 | $23 \cdot 118$ | 23 | 33 |
| 33 ${ }^{\frac{1}{2}}$ | 26.257 | $26 \frac{1}{4}$ | 25.267 | $25 \frac{1}{4}$ | 24－329 | $24 \frac{1}{4}$ | 23.441 | $23 \frac{1}{2}$ | 33 ${ }^{\frac{1}{2}}$ |
| 332 | 26.482 | $26 \frac{1}{2}$ | 25.462 | $25 \frac{1}{2}$ | 24．499 | $24 \frac{1}{2}$ | 23.587 | $23 \frac{1}{2}$ | 34 |
| 342 | $26 \cdot 856$ | $26 \frac{3}{4}$ | 25.817 | $25 \frac{3}{4}$ | 24.835 | $24 \frac{3}{4}$ | 23.905 | 24 | $34^{\frac{1}{2}}$ |
| 35 | 27.076 | 27 | 26.007 | 26 | 24.999 | 25 | 24.046 | 24 | 35 |
| $35^{\frac{1}{2}}$ | 27.446 | $27 \frac{1}{2}$ | 26.359 | $26 \frac{1}{4}$ | 25.331 | 251 | 24.360 | $24 \frac{1}{4}$ | $35 \frac{1}{2}$ |
| 36 | $27 \cdot 661$ | $27 \frac{3}{4}$ | $26 \cdot 543$ | $26 \frac{1}{2}$ | 25.489 | $25 \frac{1}{2}$ | 24.495 | $24 \frac{1}{3}$ | 36 |
| $36 \frac{1}{2}$ | $28 \cdot 028$ | 28 | 26.890 | 27 | 25.817 | $25 \frac{3}{4}$ | 24.804 | $24 \frac{3}{4}$ | $36 \frac{1}{2}$ |
| 37 | 28.237 | $28 \frac{1}{4}$ | 27.069 | 27 | 25.969 | 26 | 24.934 | 25 | 37 |
| $37 \frac{1}{2}$ | 28.601 | $28 \frac{1}{2}$ | 27.413 | $27 \frac{1}{2}$ | $26 \cdot 294$ | 261 | 25.239 | $25^{\frac{1}{4}}$ | $37 \frac{1}{2}$ |
| $3^{8}$ | 28.805 | $28 \frac{8}{4}$ | 27.586 | $27 \frac{1}{2}$ | 26.44 T | $26 \frac{1}{2}$ | 25.363 | $25^{\frac{1}{3}}$ | 38 |
| $38 \frac{1}{5}$ | $29 \cdot 166$ | $29 \frac{1}{4}$ | 27.926 | 28 | 26．76I | 268 | $25 \cdot 664$ | 258 | 382 |
| 39 | 29.365 | $29 \frac{1}{4}$ | 28.095 | 28 | 26.903 | 27 | 25.783 | $25 \frac{8}{4}$ | 39 |
| $39 \frac{1}{2}$ | 29.722 | 2998 | 28.431 | 281 | 27.219 | $27 \frac{1}{4}$ | $26 \cdot 079$ | 26 | 39 ${ }^{\frac{1}{2}}$ |
| 40 | 29.916 | 30 | 28.594 | $28 \frac{1}{2}$ | 27.355 | $27 \frac{1}{4}$ | $26 \cdot 194$ | 26⿺𠃊⿳亠丷厂犬 | 40 |
| 402 | $30 \cdot 270$ | $30 \frac{1}{4}$ | 28.927 | 29 | 27.667 | $27 \frac{3}{4}$ | 26.486 | $26 \frac{1}{2}$ | $40 \frac{1}{2}$ |
| 41 | 30.459 | $30 \frac{2}{2}$ | 29.085 | 29 | ${ }^{27} 799$ | $27 \frac{3}{4}$ | $26 \cdot 595$ | $26 \frac{1}{2}$ | 4 T |
| 412 | $30 \cdot 810$ | $30 \frac{3}{4}$ | 29.414 | 29 ${ }^{\frac{1}{2}}$ | $28 \cdot 107$ | 28 | 26.883 | 27 | $4{ }^{1} \frac{1}{2}$ |
| 42 | 30•994 | 31 | 29.568 | $29 \frac{1}{2}$ | 28.235 | $28 \frac{1}{4}$ | $26 \cdot 988$ | 27 | 42 |
| 423 ${ }^{\frac{3}{3}}$ | 31－342 | $3{ }^{\frac{1}{4}}$ | 29.893 | 30 | $28 \cdot 5 \cdot 39$ | $28 \frac{1}{2}$ | $27 \cdot 272$ | $27 \frac{1}{4}$ | $42 \frac{1}{2}$ |
| $43{ }^{1}$ | 31.521 31.866 | 312 | 30.042 | 30 | 28.662 | $28 \frac{3}{4}$ | 27.372 | $27 \frac{1}{4}$ | 43 |
| $43 \frac{1}{2}$ | 31.866 $32 \cdot 041$ | $31 \frac{8}{4}$ | $30 \cdot 364$ 30.508 | $30 \frac{1}{4}$ | $28 \cdot 962$ | 29 | ${ }^{27} \cdot 652$ | $27 \frac{3}{4}$ | $43^{\frac{1}{2}}$ |
|  | $32 \cdot 04 \mathrm{I}$ $32 \cdot 382$ | 32 | $30 \cdot 508$ 30.826 | $30 \frac{1}{2}$ | 29.080 | 29 | 27.748 | $27 \frac{3}{4}$ | 44 |
| $444^{\frac{1}{2}}$ | $32 \cdot 382$ 32.552 | $322 \frac{3}{2}$ | $30 \cdot 826$ 30.966 | $30 \frac{3}{4}$ | 29.376 29.490 | 29，${ }^{\frac{1}{2}}$ | 28.023 | 28 | 445 |
| $45 \frac{1}{2}$ | $32 \cdot 891$ | $32 \frac{3}{4}$ | $3 \mathrm{I} \cdot 28 \mathrm{I}$ | $3 \mathrm{I} \frac{1}{4}$ | ${ }^{29 \cdot 783}$ | 292 $29 \frac{3}{4}$ | ${ }^{28} \cdot 386$ | 28준 | 45 |
| 46 | $33 \cdot 056$ | 33 | 31.416 | 312 | 29.892 | 30 | 28.474 | $28 \frac{1}{2}$ | 46 |
| $46 \frac{1}{2}$ | 33.392 | $33 \frac{3}{2}$ | 3 I 728 | 318 | $30 \cdot 181$ | 315 | 28.742 | $28 \frac{3}{4}$ | 46 |
| 47 | 33.553 | 33 $\frac{1}{2}$ | $3 \mathrm{I} \cdot 859$ | 318 | $30 \cdot 287$ | $30 \frac{1}{4}$ | 28.826 | $28 \frac{8}{4}$ | 47 |
| 473 | 33.885 | 34 | $32 \cdot 167$ | $32 \frac{1}{4}$ | $30 \cdot 571$ | $30 \frac{3}{2}$ | 29.089 | 29 | $47^{\frac{1}{2}}$ |
| 48 | 34．043 | 34 | $32 \cdot 294$ | $32 \frac{1}{4}$ | $30 \cdot 673$ | $30 \frac{8}{4}$ | 29.170 | $29 . \frac{1}{1}$ | 48 |
| $4^{8 \frac{1}{2}}$ | 34.37 I | 34 ${ }^{\frac{1}{4}}$ | $32 \cdot 598$ | $322 \frac{1}{2}$ | $30 \cdot 954$ | 31 | 29.429 | $29 \frac{1}{2}$ | $48 \frac{3}{2}$ |
| 49 | 34.525 34.850 | $34 \frac{1}{2}$ 34 | 32.721 33.022 | 32 年 | $3 \mathrm{~L} \cdot 052$ $3 \mathrm{~L} \cdot 53$ | 31 31 31 | 29.506 | $29 \frac{2}{2}$ | 49 |
| $49 \frac{1}{2}$ | 34.850 | $34 \frac{3}{4}$ | 33.022 | 33 | 3 1．330 | $31 \frac{1}{4}$ | ${ }^{29} 761$ | 293 ${ }^{\frac{3}{4}}$ | $49^{\frac{1}{2}}$ |
| 50 | $35^{\circ} 000$ | 35 | $33 \cdot 141$ | 331 | 31．424 | 312 | 29.834 | $29 \frac{3}{4}$ | 50 |

Examples．－A lease or annuity for $49 \frac{1}{2}$ years to make $2 \frac{1}{4}$ per cent．and to get back the principal is warth 29.761 or 293 years＇purchase of the clear annual rent．At $3 \frac{1}{2}$ per cent．it is worth 23.443 or $23 \frac{1}{2}$ years＇purchase．

## INTEREST TABLES



For Explanations and Examples see pp. xviii., xix. Tables continued on pp . xx., xxi. and on $p p$ xxiv. to xxxi.

TABLE for the PURCHASING of Leases，Eatates，or Annuities，for terme of gears certain at Rates from $1 \frac{1}{2}$ to 10 per cent．Interest which the Purchaser may thereby make of hid money．

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline Years \& \multicolumn{2}{|l|}{$$
\underset{\text { Purchass }}{\text { Years }} 1 \frac{1}{2} \%
$$} \& \multicolumn{2}{|l|}{$$
\begin{array}{|c}
\text { Yeary' } \\
\text { Purchase } \\
\frac{3}{4}
\end{array}
$$} \& $$
\begin{aligned}
& \text { Years' } \\
& \text { Purchase }
\end{aligned}
$$ \& 2\％ \& $$
\begin{gathered}
\text { Yearg' } \\
\text { Purchass }
\end{gathered}
$$ \& $\frac{1}{4} \%$ \& ears <br>
\hline 51 \& $35 \cdot 468$ \& 351 ${ }^{\frac{1}{2}}$ \& 33．554 \& 33 ${ }^{\frac{1}{2}}$ \& 31．788 \& $31 \frac{3}{4}$ \& $30 \cdot 156$ \& $30^{\frac{2}{4}}$ \& 5 I <br>
\hline 52 \& 35.929 \& 36 \& 33.960 \& 34 \& 32－145 \& $32 \frac{1}{4}$ \& $30 \cdot 470$ \& $30 \frac{1}{2}$ \& 52 <br>
\hline 53 \& $36 \cdot 383$ \& $36 \frac{1}{2}$ \& 34.358 \& $34 \frac{1}{4}$ \& 32.495 \& $32 \frac{1}{2}$ \& $30 \cdot 778$ \& $30 \frac{3}{4}$ \& 53 <br>
\hline 54 \& $36 \cdot 83 \mathrm{I}$ \& $36 \frac{3}{4}$ \& 34.750 \& 34 ${ }^{\frac{3}{4}}$ \& $32 \cdot 838$ \& $32 \frac{3}{4}$ \& $3{ }^{1} \times 79$ \& 31 \& 54 <br>
\hline 55 \& 37.271 \& $37^{\frac{2}{4}}$ \& 35＇135 \& 351 \& 33－75 \& $33{ }^{\frac{1}{1}}$ \& $31 \cdot 373$ \& $31{ }^{\frac{1}{4}}$ \& 55 <br>
\hline 56 \& $37 \cdot 706$ \& 37 ${ }^{\frac{3}{4}}$ \& $35 \cdot 514$ \& 351 \& 33.505 \& 33 ${ }^{\frac{1}{2}}$ \& 31－660 \& 315 \& 56 <br>
\hline 57 \& $38 \cdot 134$ \& 288 \& $35 \cdot 886$ \& 36 \& $33 \cdot 828$ \& $33{ }^{\frac{8}{4}}$ \& 31.942 \& 32 \& 57 <br>
\hline 58 \& $38 \cdot 556$ \& $38 \frac{1}{2}$ \& $36 \cdot 252$ \& $36 \frac{1}{4}$ \& 34．145 \& $34^{\frac{1}{4}}$ \& $32 \cdot 217$ \& $32 \frac{1}{4}$ \& 58 <br>
\hline 59 \& 38.971 \& 39 \& $36 \cdot 6 \mathrm{II}$ \& $36 \frac{1}{2}$ \& 34.456 \& 34 ${ }^{\text {a }}$ \& 32.486 \& $322 \frac{1}{2}$ \& 59 <br>
\hline 60 \& 39.380 \& 39를 \& $3^{6} \cdot 964$ \& 37 \& 34．761 \& 34 ${ }^{\frac{3}{4}}$ \& 32＇749 \& $32 \frac{3}{4}$ \& 60 <br>
\hline 6 I \& $39 \cdot 784$ \& 393 ${ }^{\frac{3}{4}}$ \& 37.311 \& 37 ${ }^{\frac{1}{4}}$ \& $35 \cdot 60$ \& 35 \& 33.006 \& 33 \& 6 I <br>
\hline 62 \& $40 \cdot 181$ \& $40{ }^{\frac{1}{4}}$ \& $37 \cdot 652$ \& $37{ }^{\frac{3}{4}}$ \& 35.353 \& $35{ }^{\frac{1}{4}}$ \& 33.258 \& $33 \frac{1}{4}$ \& 62 <br>
\hline 63 \& $40 \cdot 572$ \& $40 \frac{1}{2}$ \& 37.987
38.817 \& 38 \& 35.640 \& 35 \& 33.504 \& 332 $\frac{1}{2}$ \& 63 <br>
\hline 64 \& $40 \cdot 958$ \& 41 \& 38.317 \& $38 \frac{1}{4}$ \& $35^{\circ} 92 \mathrm{I}$ \& 36 \& 33.745 \& 334 \& 64 <br>
\hline 65 \& 41.338 \& 41 ${ }^{1}$ \& $38 \cdot 64 \mathrm{I}$ \& 384 \& 36•197 \& 36⿺𠃊 \& 33.980 \& 34 \& 65 <br>
\hline 66 \& $4 \mathrm{I} \cdot 712$ \& 418 \& $38 \cdot 959$ \& 39 \& $36 \cdot 468$ \& $36 \frac{1}{2}$ \& 34.211 \& 34 ${ }^{\frac{1}{4}}$ \& 66 <br>
\hline 67 \& 42.08 I \& 42 \& 39.272 \& $39 \frac{1}{4}$ \& $36 \cdot 733$ \& $36 \frac{8}{4}$ \& 34.436 \& $34 \frac{1}{2}$ \& 67 <br>
\hline 68 \& $42 \cdot 444$
$42 \cdot 802$ \& 422 ${ }^{42}$ \& 39.579
39.881 \& $4{ }^{39} 4$ \& $36 \cdot 994$
$37 \cdot 249$ \& 37
37 \& 34.656
34.871 \& 34
34
34

3 \& 68 <br>
\hline 70 \& $43 \cdot 155$ \& $43^{\frac{1}{4}}$ \& 40＇178 \& $40 \frac{1}{4}$ \& 37.499 \& $37{ }^{\frac{1}{2}}$ \& 35.082 \& 35 \& 70 <br>
\hline 71 \& $43 \cdot 502$ \& 43交 \& 40．470 \& 40 ${ }^{\frac{1}{2}}$ \& 37•744 \& $37 \frac{3}{4}$ \& 35.288 \& 35 ${ }^{\frac{1}{4}}$ \& 71 <br>
\hline 72 \& 43.845 \& $433^{\frac{3}{4}}$ \& $40 \cdot 756$ \& 403 ${ }^{\text {a }}$ \& 37.984 \& 38 \& 35.490 \& $35 \frac{1}{2}$ \& 72 <br>
\hline 73 \& $44 \cdot 182$ \& $444^{\frac{1}{4}}$ \& 41．038 \& 4 I \& $38 \cdot 220$ \& $38 \frac{1}{4}$ \& $35 \cdot 687$ \& $35 \frac{3}{4}$ \& 73 <br>
\hline 74 \& 44.514 \& $44^{\frac{1}{2}}$ \& 41.315 \& $411 \frac{1}{4}$ \& 38.45 I \& $38 \frac{1}{2}$ \& 35.879 \& 36 \& 74 <br>
\hline 75 \& 44.842 \& $44 \frac{3}{4}$ \& $41 \cdot 587$ \& $4 \mathrm{I} \frac{1}{2}$ \& $38 \cdot 677$ \& $38 \frac{8}{4}$ \& 36.068 \& 36 \& 75 <br>
\hline 76 \& $45 \cdot 164$ \& 45 ${ }^{\frac{1}{4}}$ \& 41.855 \& 412 ${ }^{4}$ \& 38.899 \& 39 \& $36 \cdot 252$ \& $36 \frac{1}{4}$ \& 76 <br>
\hline 77 \& 45.482 \& $45 \frac{3}{2}$ \& $42 \cdot 118$ \& 42 \& $39 \cdot 117$ \& 39 \& 36.432 \& $36 \frac{1}{2}$ \& 77 <br>
\hline 78 \& $45 \cdot 795$ \& $45 \frac{3}{4}$ \& 42.376 \& $42 \frac{1}{2}$ \& 39.330 \& $39{ }^{\frac{1}{4}}$ \& $36 \cdot 609$ \& $36 \frac{1}{2}$ \& 78 <br>
\hline 79 \& $46 \cdot 103$ \& 46 \& 42.630 \& 423 ${ }^{\frac{3}{4}}$ \& 39.539 \& 393 \& $36 \cdot 78 \mathrm{I}$ \& 36 年 \& 79 <br>
\hline 80 \& $46 \cdot 407$ \& $46 \frac{1}{2}$ \& 42.880 \& 43 \& 39.745 \& $39 \frac{3}{4}$ \& 36.950 \& 37 \& 80 <br>
\hline 81 \& $46 \cdot 707$ \& 463 \& $43 \cdot 125$ \& 43 \& 39.946 \& 40 \& $37 \cdot 115$ \& 37 \& 8 I <br>
\hline 82 \& 47.002 \& 47 \& 43.366 \& 43 ${ }^{\frac{1}{4}}$ \& $40 \cdot 143$ \& $40 \frac{1}{1}$ \& 37.276 \& $37 \frac{1}{4}$ \& 82 <br>
\hline 83 \& $47 \cdot 292$ \& $477^{\frac{1}{4}}$ \& 43.603 \& $43 \frac{1}{\frac{1}{2}}$ \& $40 \cdot 336$ \& $40 \frac{1}{4}$ \& 37.434
37.588 \& $37 \frac{1}{2}$ \& 83 <br>
\hline 84 \& $47 \cdot 579$ \& $47 \frac{1}{2}$ \& 43.836 \& $43 \frac{8}{4}$ \& $40 \cdot 526$ \& $40 \frac{1}{2}$ \& 37.588 \& $37 \frac{1}{2}$ \& 84 <br>
\hline 85 \& $47 \cdot 861$ \& $47 \frac{3}{4}$ \& 44.065 \& 44 \& 40711 \& $40 \frac{3}{4}$ \& 37.739 \& $37 \frac{3}{4}$ \& 85 <br>
\hline 86 \& $48 \cdot 139$ \& $48 \frac{1}{4}$ \& 44.290 \& $44 \frac{1}{4}$ \& $40 \cdot 893$ \& 4 I \& 37.886 \& 38 \& 86 <br>
\hline 87 \& 48.412
48.682 \& $48 \frac{1}{2}$ \& 44.511 \& $44 \frac{3}{2}$ \& 41.072 \& 41 \& 38.031 \& 38 \& 87 <br>
\hline 88 \& $48 \cdot 682$ \& $48 \frac{8}{4}$ \& 44.728 \& $44 \frac{8}{4}$ \& $4 \mathrm{I} \cdot 247$ \& $4{ }^{12}$ \& $38 \cdot 172$ \& $38 \frac{1}{4}$ \& 88 <br>
\hline 89 \& $48 \cdot 948$ \& 49 \& 44.942 \& 45 \& 41．419 \& $4 \mathrm{r} \frac{1}{2}$ \& 38.310 \& $38 \frac{1}{4}$ \& 89 <br>
\hline 90 \& 49.210 \& $49 \frac{1}{4}$ \& $45 \cdot 152$ \& 45 ${ }^{\frac{1}{4}}$ \& $4 \mathrm{I} \cdot 587$ \& 412 \& $38 \cdot 445$ \& $38 \frac{1}{2}$ \& 90 <br>
\hline 91 \& 49.468 \& 49 ${ }^{\frac{1}{2}}$ \& 45.358 \& $45^{\frac{1}{4}}$ \& 41.752 \& $41 \frac{3}{4}$ \& $38 \cdot 577$ \& 388 \& 9 9 <br>
\hline 92 \& $49 \cdot 722$ \& 494 \& $45 \cdot 561$ \& $45 \frac{1}{2}$ \& 41.914 \& 42 \& $38 \cdot 706$ \& 388 \& 92 <br>
\hline 93 \& 49.972 \& 50 \& 45760 \& $45 \frac{3}{4}$ \& 42.072 \& 42 \& 38.832 \& $38 \frac{3}{4}$ \& 93 <br>
\hline 94 \& $50 \cdot 219$ \& $50 \frac{1}{4}$ \& 45.956 \& 46 \& $42 \cdot 228$ \& $42 \frac{1}{4}$ \& 38.956 \& 39 \& 94 <br>
\hline 95 \& $50 \cdot 462$ \& $50 \frac{2}{2}$ \& 46．148 \& $46 \frac{1}{4}$ \& 42.380 \& 42 $\frac{1}{2}$ \& 39.077 \& 39 \& 95 <br>
\hline 96 \& $50 \cdot 702$ \& $50 \frac{3}{4}$ \& $46 \cdot 337$ \& $46 \frac{1}{4}$ \& $42 \cdot 529$ \& $42 \frac{1}{2}$ \& 39•195 \& $39^{\frac{1}{4}}$ \& 96 <br>
\hline 97 \& 50.938 \& 51 \& $46 \cdot 523$ \& $46 \frac{1}{2}$ \& $42 \cdot 676$ \& $42 \frac{3}{4}$ \& 39.310 \& $39 \frac{1}{4}$ \& 97 <br>
\hline 98 \& $51 \cdot 170$
51.399 \& $51 \frac{1}{4}$ \& $46 \cdot 706$ \& $46 \frac{3}{4}$ \& 42.820 \& $42 \frac{3}{4}$ \& 39.423 \& $39{ }^{\frac{1}{2}}$ \& 98 <br>
\hline 99 \& 51－399 \& 515 \& $46 \cdot 885$ \& 47 \& 42.960 \& 43 \& $39^{\circ} 534$ \& $39 \frac{1}{2}$ \& 99 <br>
\hline 100 \& $51 \cdot 625$ \& $51 \frac{3}{4}$ \& $47 \cdot 06 \mathrm{I}$ \& 47 \& $43 \cdot 098$ \& 43 \& 39.642 \& $39 \frac{8}{4}$ \& 100 <br>
\hline
\end{tabular}

Examples．－A lease or annuity for 75 years to make $x^{\frac{1}{2}}$ per cent．and to get back the principal is worth 44.842 or $44 \frac{8}{4}$ years＇purchase of the clear annual rent．At 2 per oent．it is worth 38.677 or $3^{8 \frac{3}{4}}$ years＇purchase．

| Years | $\begin{gathered} \text { Years' } \\ \text { Purchase } \end{gathered} \mathbf{2} \frac{1}{2} \%$ |  | $\begin{aligned} & \text { Pears' } \\ & \text { Purchass } \end{aligned} \frac{3}{4} \%$ |  | $\begin{gathered} \text { Years' } \\ \text { Purchase } \end{gathered} \mathbf{\%}$ |  | $\begin{gathered} \text { Yuears' } \\ \text { Purchase } \end{gathered} 3 \frac{1}{9} \%$ |  | ） |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 5 I | $28 \cdot 646$ | $28 \frac{3}{4}$ | $27 \cdot 248$ | 271 |  | 26 |  | $23 \frac{3}{4}$ |  |
| 52 | 28.923 | 29 | 27.492 | $27 \frac{1}{2}$ | ${ }^{25 \cdot 951}$ | $26 \frac{1}{4}$ | 23.796 | 234 ${ }^{3}$ | 51 52 |
| 53 | $29 \cdot 193$ | $29 \frac{1}{4}$ | ${ }^{27} 7729$ | $27 \frac{3}{4}$ | $26 \cdot 375$ | $26 \frac{4}{4}$ | 23.957 | 24 | 53 |
| 54 | 29.457 | $29 \frac{1}{2}$ | 27.960 | 28 | 26.578 | $26 \frac{4}{2}$ | 24.113 | 24 | 54 |
| 55 | 29.714 | $29 \frac{8}{4}$ | $28 \cdot 185$ | 2814 ${ }^{\circ}$ | $26 \cdot 774$ | $26 \frac{8}{4}$ | 24．264 | ${ }^{24} 4$ | 55 |
| 56 | 29.965 | 30 | 28.404 | $28 \frac{1}{2}$ | $26 \cdot 965$ | 27 | 24.410 | 24 ${ }^{\frac{1}{2}}$ | 56 |
| 57 58 58 | $30 \cdot 210$ 30.448 | $3{ }^{3} \frac{1}{4}$ | 28.617 | $28 \frac{1}{2}$ | $27 \cdot 151$ | $27 \frac{1}{4}$ | 24.550 | $24 \frac{1}{2}$ | 57 |
| 58 59 | $30 \cdot 448$ 30.68 I | 302 | $28 \cdot 825$ 29.026 | 2893 | 27.331 27.506 | 278 | 24.686 24.8 | $24 \frac{3}{4}$ | 58 |
| 60 | 30.909 | 3 3 | 29.226 29.223 | ${ }^{29} 29$ | 27.506 27.676 | 27－ | 24.818 24.945 | 24， | 59 60 |
| 61 | $31 \cdot 130$ | $3 \mathrm{3r} \frac{1}{4}$ | 29.414 | 29 ${ }^{\frac{1}{2}}$ | 27.840 | $27 \frac{8}{4}$ | 25.067 | 25 | 6 r |
| 62 | 3I 347 | 31 | 29.600 | $29 \frac{1}{2}$ | 28.000 | 28 | 25．186 | $25 \frac{1}{4}$ | 62 |
| 63 64 | 31558 | $3{ }^{1} \frac{2}{2}$ | 29．781 | 298 ${ }^{\frac{8}{4}}$ | $28 \cdot 156$ | $28 \frac{1}{4}$ | 25.300 | $25 \frac{1}{4}$ | 63 |
| 64 65 | 31.764 | $31 \frac{3}{4}$ | 29.957 | 30 | $28 \cdot 306$ | $28 \frac{1}{4}$ | 25.411 | $25^{\frac{1}{2}}$ | 64 |
| 65 | 3＇965 | 32 | 30．128 | 3014 | 28.453 | $28 \frac{1}{2}$ | 25.518 | $25 \frac{1}{2}$ | 65 |
| 66 | $32 \cdot 161$ 32.952 | $32 \frac{1}{4}$ | $30 \cdot 295$ | $30 \frac{1}{4}$ | 28.595 | $28 \frac{1}{2}$ | $25^{\circ} 621$ | 251 $\frac{1}{2}$ | 66 |
| 67 | $32 \cdot 352$ 32.538 | $32{ }^{32}$ | 30.458 30.656 | $30 \frac{1}{2}$ | $28 \cdot 733$ | $28 \frac{3}{4}$ | 25.721 | $25^{\frac{3}{4}}$ | 67 |
| 68 | $32 \cdot 538$ 32.720 | 322 ${ }^{3}$ | $30 \cdot 616$ $30 \cdot 770$ | $30 \frac{1}{2}$ $30 \frac{8}{4}$ | 28.867 28.997 | 289 | 25.817 | $25 \frac{3}{4}$ | 68 |
| 70 | 32.898 | 33 | 30.919 | ${ }_{31}{ }^{3}$ | 28.997 29.123 | 29 29 | 25.910 26.000 | 26 26 | 69 70 |
| 71 | 33.07 I | 33 | $3 \mathrm{I} \cdot 065$ | 31 | 29.246 | $29{ }^{1}$ | $26 \cdot 087$ | 26 | 7 7 |
| 72 | 33.240 | 33 ${ }^{\frac{1}{4}}$ | $3 \mathrm{I} \cdot 207$ | 313 | 29.365 | $29 \frac{1}{4}$ | $26 \cdot 171$ | $26 \frac{1}{4}$ | 72 |
| 73 | 33.405 | $33^{\frac{1}{2}}$ | 31－345 | 315 | 29．481 | 291 | $26 \cdot 253$ | $26 \frac{1}{4}$ | 73 |
| 74 | $33 \cdot 566$ | $33{ }^{\frac{1}{2}}$ | 31．479 | $31 \frac{1}{2}$ | 29.593 | 2913 | 26.331 | $26 \frac{1}{4}$ | 74 |
| 75 | 33.723 | $33^{\frac{3}{4}}$ | 31．610 | $31 \frac{1}{2}$ | 29.702 | 29 ${ }^{\frac{8}{4}}$ | 26.407 | 261 | 75 |
| 76 | $33 \cdot 876$ | 34 | 31•737 | 318 | 29.808 | $29 \frac{8}{4}$ | 26.480 | $26{ }^{\frac{1}{2}}$ | 76 |
| 77 | 34．025 | 34 | $3 \mathrm{I} \cdot 86 \mathrm{I}$ | $31 \frac{3}{4}$ | 29.910 | 30 | $26 \cdot 551$ | $26 \frac{1}{2}$ | 77 |
| 78 | $34 \cdot 171$ $34 \cdot 313$ | 344 ${ }^{\frac{1}{4}}$ | 31.982 | 32 | 30.010 | 30 | $26 \cdot 619$ | $26 \frac{1}{2}$ | 78 |
| 89 | $34 \cdot 313$ 34.452 | 344 | 32．099 | 32 | $30 \cdot 107$ | 30 | $26 \cdot 685$ | $26 \frac{3}{4}$ | 79 |
| 81 | 34．587 | 3 | 32.213 | 324 | $30 \cdot 201$ | $30 \frac{1}{4}$ | $26 \cdot 749$ | $26 \frac{3}{4}$ | 80 |
| 82 | 34.719 | $34{ }^{3}$ | 32．324 | 324 | 30.292 | 30눈 | 26.810 | $26 \frac{3}{4}$ | $8 \mathrm{8r}$ |
| 83 | $34 \cdot 848$ | $34 \frac{3}{4}$ | $32 \cdot 537$ | 322 | 30.467 | $3{ }^{3}$ | 26.928 | 27 | 83 |
| 84 | 34.974 | 35 | $32 \cdot 640$ | 32年 | $30 \cdot 550$ | $30 \frac{2}{2}$ | 26.983 | 27 | 84 |
| 85 | $35^{\circ} 096$ | 35 | 32•739 | $32{ }^{3}$ | 30.63 I | 304 ${ }^{\frac{2}{4}}$ | 27.037 | 27 | 85 |
| 86 | 35．216 | 354 ${ }^{\frac{2}{4}}$ | $32 \cdot 836$ | 32 ${ }^{\frac{3}{4}}$ | 30．710 | $30 \frac{3}{4}$ | 27.089 | 27 | 86 |
| 87 | $35 \cdot 333$ 35 | $35^{\frac{1}{4}}$ | 32.931 | 33 | $30 \cdot 786$ | 3094 | 27．139 | 274 ${ }^{\frac{1}{4}}$ | 87 |
| 88 | 35.446 | $35 \frac{1}{2}$ | 33.023 | 33 | 30.860 | $30 \frac{3}{4}$ | $27 \cdot 187$ | 274 ${ }^{\frac{1}{4}}$ | 88 |
| 89 | 35.557 35.666 | $35{ }^{\frac{1}{2}}$ | $33 \cdot 112$ | 33 | $30 \cdot 932$ | 31 | 27.234 | $27^{\frac{1}{4}}$ | 89 |
| 90 | 35.666 | 354 | 33－199 | 33 ${ }^{\frac{1}{4}}$ | $31^{1002}$ | 31 | 27.279 | $27 \frac{1}{4}$ | 90 |
| 91 | 35.771 | 354 ${ }^{\frac{8}{4}}$ | 33.284 | 33 ${ }^{\frac{1}{4}}$ | 31．070 | 31 | 27.323 | $27 \frac{1}{4}$ | 91 |
| 92 | 35.875 | 354 | 33.366 | 33 ${ }^{\frac{1}{4}}$ | $31 \cdot 136$ | $31 \frac{1}{4}$ | 27.365 | $27 \frac{1}{4}$ | 92 |
| 93 | 35.975 | 36 | 33.447 | 33交 | $3 \mathrm{I} \cdot 200$ | $31 \frac{1}{4}$ | 27.406 | $27 \frac{1}{2}$ | 93 |
| 94 95 | $36 \cdot 073$ $36 \cdot 169$ | 36 | $33 \cdot 525$ | $33 \frac{1}{2}$ | $31 \cdot 262$ | 315 | 27.445 | $27 \frac{1}{2}$ | 94 |
| 95 | $36 \cdot 169$ | $36 \frac{1}{4}$ | $33 \cdot 601$ | 33 ${ }^{\frac{1}{2}}$ | 31－323 |  | 27.484 | $27 \frac{1}{2}$ | 95 |
| 96 97 | $36 \cdot 263$ $36 \cdot 254$ | 364 | 33.675 | 33 ${ }^{\frac{8}{4}}$ | 31－381 | 312 | 27.520 | 27⿺⿻十⿵冂⿰入入丶 | 96 |
| 97 98 | $36 \cdot 354$ $36 \cdot 443$ | $36 \frac{1}{4}$ <br> $36 \frac{1}{1}$ | $33 \cdot 746$ | 33\％ | 31.438 | $311 \frac{1}{2}$ | 27.556 | $27 \frac{1}{2}$ | 97 |
| 98 99 | 36.443 $36 \cdot 529$ | 362 | 33.817 33.885 | $33 \frac{8}{4}$ 34 | 31.493 31547 | 312 | 27.590 | $27 \frac{1}{2}$ | 98 |
| 99 100 | $36 \cdot 529$ | $36 \frac{1}{2}$ | $33 \cdot 885$ | 34 | 31•547 | $31+\frac{1}{2}$ | $27 \cdot 623$ | $27 \frac{1}{2}$ | 99 |
| 100 | 36.614 | 362 | 33.95 I | 34 | 31．599 | 31 2 | 27.655 | $27 \frac{2}{4}$ | 100 |

For Explanations and Examples see pp．xviiii，xix．Tables continued on pp．xx．to xxiii．，and on pp．xxvi．to xxxi．

TABLE for the PURCHASING of Leasss, Estates, or Annuities, for terms of years certain at Rates from $1 \frac{1}{2}$ to 10 per cent. Interest which the

Purchaser may thereby make of his money

| Years | $\underset{\text { Yurehas' }}{\text { Puse }} 4 \%$ |  | $\left\lvert\, \begin{aligned} & \text { Years' } \\ & \text { Purchasa } \end{aligned} \frac{1}{2} \%\right.$ |  | Years' Purchase | \% | Years' Purchase | \% | Years |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\frac{1}{2}$ | *490 | $\frac{1}{2}$ | $\cdot 489$ | $\frac{1}{2}$ | $\cdot 488$ | $\frac{1}{2}$ | -485 | $\frac{1}{2}$ | $\frac{1}{2}$ |
| 1 | -962 | 1 | -957 | 1 | '952 | 1 | -943 | I | I |
| $1 \frac{1}{2}$ | I.442 | 13. | I-435 | $1 \frac{1}{2}$ | 1.428 | $1 \frac{1}{2}$ | 1.414 | $\frac{1}{2}$ | I $\frac{1}{2}$ |
| 2 | I.886 | 2 | I-873 | I $\frac{1}{4}$ | 1.859 | 13 | 1.833 | I $\frac{3}{4}$ | 2 |
| $2 \frac{1}{2}$ | 2.357 | $2 \frac{1}{4}$ | 2.340 | $2 \frac{1}{4}$ | $2 \cdot 323$ | $2 \frac{1}{4}$ | 2.290 | $2 \frac{1}{4}$ | $2 \frac{1}{2}$ |
| 3 | 2.775 | $2 \frac{3}{4}$ | 2'749 | $2 \frac{3}{4}$ | $2 \cdot 723$ | $2 \frac{3}{4}$ | $2 \cdot 673$ | 23 | 3 |
| $3{ }^{\frac{1}{2}}$ | $3 \cdot 236$ | $3 \frac{1}{4}$ | 3.205 | $3 \frac{1}{4}$ | $3 \cdot 175$ | $3 \frac{1}{4}$ | 3.115 | 3 | $3 \frac{1}{2}$ |
| 4 | 3.630 | $3 \frac{5}{4}$ | 3.588 | 31 | 3.546 | $3 \frac{1}{2}$ | 3.465 | 32 | 4 |
| $4^{\frac{1}{2}}$ | 4.081 | 4 | $4 \cdot 033$ | 4 | $3 \cdot 985$ | 4 | $3 \cdot 893$ | 4 | $4^{\frac{1}{2}}$ |
| 5 | 4.452 | 4 $\frac{1}{2}$ | 4.390 | $4 \frac{1}{2}$ | 4.329 | $4 \frac{1}{4}$ | $4 \cdot 212$ | 43 | 5 |
| $5^{\frac{1}{2}}$ | $4 \cdot 893$ | 5 | $4 \cdot 825$ | $4 \frac{3}{4}$ | $4 \cdot 757$ | 4 ${ }^{\frac{3}{4}}$ | $4 \cdot 626$ | $4 \frac{3}{4}$ | $5 \frac{1}{2}$ |
| 6 | $5 \cdot 242$ | $5 \frac{1}{4}$ | $5 \cdot 158$ | $5 \frac{1}{4}$ | $5 \cdot 076$ | 5 | 4.917 | $5$ | $6$ |
| 6 $\frac{1}{2}$ | $5 \cdot 674$ | $5 \frac{3}{4}$ | $5 \cdot 582$ | $5 \frac{1}{2}$ | $5 \cdot 492$ | $5 \frac{1}{2}$ | $5 \cdot 317$ | 51 | $6 \frac{1}{2}$ |
| 7 | $6 \cdot 002$ | 6 | $5 \cdot 893$ | 6 | $5 \cdot 786$ | $5 \frac{3}{4}$ | $5 \cdot 582$ | $5 \frac{1}{2}$ | 7 |
| $7 \frac{1}{2}$ | $6 \cdot 425$ | $6 \frac{1}{2}$ | $6 \cdot 306$ | $6 \frac{1}{4}$ | $6 \cdot 191$ | $6 \frac{1}{4}$ | $5 \cdot 969$ | 6 | $7 \frac{1}{2}$ |
| 8 | $6 \cdot 733$ | $6 \frac{3}{4}$ | $6 \cdot 596$ | $6 \frac{1}{2}$ | 6.463 | $6 \frac{1}{2}$ | $6 \cdot 210$ | $6 \frac{1}{4}$ | 8 |
| $8 \frac{1}{2}$ | 7.146 | 7 $\frac{1}{4}$ | $6 \cdot 999$ | 7 | $6 \cdot 856$ | $6 \frac{3}{4}$ | $6 \cdot 583$ | $6 \frac{2}{2}$ | $8 \frac{1}{2}$ |
| 9 | 7.435 | $7 \frac{1}{2}$ | $7 \cdot 269$ | $7 \frac{1}{4}$ | 7•108 | 7 | $6 \cdot 802$ | $6 \frac{3}{4}$ | 9 |
| $9 \frac{1}{2}$ | 7.839 8.15 | $7 \frac{3}{4}$ | $7 \cdot 661$ | $7 \frac{3}{4}$ | $7 \cdot 489$ | $7 \frac{1}{2}$ | $7 \cdot 162$ $7 \cdot 360$ | 7六 | 913 |
| 10 | 8-111 | 8 | $7 \cdot 913$ | 8 | $7 \cdot 722$ | $7 \frac{8}{4}$ | $7 \cdot 360$ | 74 | 10 |
| $10 \frac{1}{2}$ | $8 \cdot 506$ | $8 \frac{1}{2}$ | $8 \cdot 295$ | $8 \frac{1}{4}$ | $8 \cdot 092$ | 8 | 7-708 | $7 \frac{8}{4}$ | 10, $\frac{1}{2}$ |
| II | $8 \cdot 760$ | $8 \frac{3}{4}$ | $8 \cdot 529$ | $8 \frac{1}{2}$ | $8 \cdot 306$ | $8 \frac{1}{4}$ | $7 \cdot 887$ | 8 | II |
| II $\frac{1}{2}$ | $9 \cdot 146$ | $9 \frac{1}{4}$ | $8 \cdot 901$ | 9 | $8 \cdot 666$ | $8 \frac{3}{4}$ | 8.222 8.384 | $8 \frac{1}{4}$ | 1 $1 \frac{1}{2}$ |
| 12 | $9 \cdot 385$ | 912 | 9.119 | 9 | $8 \cdot 863$ | $8 \frac{8}{4}$ | $8 \cdot 384$ | $8 \frac{1}{2}$ | 12 |
| 121 $\frac{1}{2}$ | $9 \cdot 762$ | $9{ }^{\frac{3}{4}}$ | $9 \cdot 481$ | 912 | $9 \cdot 212$ | $9 \frac{1}{4}$ | $8 \cdot 707$ | $8 \frac{3}{4}$ | 1212 |
| 13 | 9.986 | 10 | $9 \cdot 683$ | $9{ }^{3}$ | 9.394 | $9 \frac{1}{2}$ | $8 \cdot 853$ | $8 \frac{3}{4}$ | 13 |
| $13 \frac{1}{2}$ | 10.353 | 10 ${ }^{1}$ | 10.036 | 10 | $9 \cdot 732$ | $9 \frac{3}{4}$ | $9 \cdot 164$ | $9 \frac{1}{4}$ | $13 \frac{1}{2}$ |
| 14 | 10.563 | $10 \frac{1}{2}$ | $10 \cdot 223$ | $10 \frac{1}{4}$ | $9 \cdot 899$ | 10 | $9 \cdot 295$ | 94 | 14 |
| $14^{\frac{1}{2}}$ | $10 \cdot 922$ | 11 | $10 \cdot 566$ | $10 \frac{1}{2}$ | 10.227 | 104 | 9.594 | $9 \frac{1}{2}$ | $14 \frac{1}{2}$ |
| 15 | II'II8 | II | $10 \cdot 740$ | $10 \frac{3}{4}$ | 10.380 | $10 \frac{1}{2}$ | $9 \cdot 712$ | $9 \frac{3}{4}$ | 15 |
| $15 \frac{1}{2}$ | 11.469 | $11 \frac{1}{2}$ | I 1 -074 | 11 | I0.698 | 10, $\frac{3}{4}$ | $10 \cdot 000$ | 10 | 1512 |
| 16 | $1 \mathrm{I} \cdot 652$ | $11 \frac{3}{4}$ | I I 234 | $11 \frac{1}{4}$ | 10.838 | $10_{4}^{3}$ | 10'106 | 10 | 16 |
| 16 ${ }^{1}$ | 11.994 | 12 | I 1.559 | $11 \frac{1}{2}$ | II I I 46 | II $\frac{1}{4}$ | 10.383 | $10 \frac{1}{2}$ | 16 $\frac{1}{2}$ |
| ${ }^{1} 7$ | 12.166 | $12 \frac{1}{4}$ | 11.707 | $11 \frac{3}{4}$ | 11.274 | $11 \frac{1}{4}$ | 10.477 | $10 \frac{1}{2}$ | ${ }^{1} 7$ |
| 17 ${ }^{1}$ | 12.499 | 12 2 | 12.023 | 12 | 11.573 | I I $\frac{1}{2}$ | $10 \cdot 744$ | 10 $\frac{8}{4}$ | $17 \frac{1}{2}$ |
| 18 | 12.659 | $12 \frac{3}{4}$ | 12.160 | 12 $2 \frac{1}{4}$ | II 1690 | $11 \frac{8}{4}$ | 10.828 | $10 \frac{3}{4}$ | 18 |
| 181 $\frac{1}{2}$ | 12.985 | 13 | 12.467 | $12 \frac{1}{2}$ | 11.979 | 12 | I I.084 | II | $18 \frac{1}{2}$ |
| 19 | 13.134 | $13{ }^{1}$ | 12.593 | 12 $\frac{1}{2}$ | 12.085 | 12 | II'I 58 | II ${ }_{\text {d }}^{4}$ | 19 |
| 192 | 13.451 | $13 \frac{1}{2}$ | 12.891 | 13 | 12.365 | $12 \frac{1}{1}$ | 11.404 | $1 \mathrm{I} \frac{1}{2}$ | 19 ${ }^{\frac{1}{2}}$ |
| 20 | 13.590 | $13 \frac{1}{2}$ | 13.008 | 13 | 12.462 | $12 \frac{1}{2}$ | 11.470 | $11 \frac{3}{2}$ | 20 |
| 2012 | 13.900 | 14 | 13.298 | $13 \frac{1}{4}$ | 12.733 | 12 $\frac{8}{4}$ | 11.706 | 119 | $20 \frac{1}{2}$ |
| 21 | 14.029 | 14 | 13.405 | 13咅 | 12.821 | $12 \cdot \frac{3}{4}$ | $11 \cdot 764$ |  | 21 |
| $21 \frac{1}{2}$ | 14.33 I | $14 \frac{1}{4}$ | 13.686 | $13 \frac{3}{4}$ | 13.083 | 13 | 11.991 | 12 | $21 \frac{1}{2}$ |
| 22 | 14.451 | $14 \frac{1}{2}$ | 13.784 | $13 \frac{3}{4}$ | 13.163 | $13 \frac{1}{4}$ | 12.042 | 12 | 22 |
| $22 \frac{1}{2}$ | 14.745 | $14 \frac{1}{1}$ | $14.05^{8}$ | 14 | 13.417 | $13 \frac{1}{2}$ | 12.259 | $12 \frac{1}{4}$ | 2221 |
| 23 | 14.857 | $14 \frac{9}{4}$ | 14.148 | $14 \frac{1}{4}$ | 13.489 | $13 \frac{1}{2}$ | 12.303 | 12 ${ }^{\frac{1}{4}}$ | 23 |
| $23 \frac{1}{2}$ | I5.143 | $15 \frac{1}{t}$ | 14.413 | I4 4 | 13.734 | $13 \frac{3}{7}$ | 12.512 | $12 \frac{1}{2}$ | $23 \frac{1}{2}$ |
| 24 | I5.247 | I5 ${ }^{\frac{1}{4}}$ | 14.495 | I4 ${ }^{\frac{1}{2}}$ | 13.799 | $13 \frac{3}{4}$ | 12.550 | $12 \frac{1}{2}$ | 24 |
| $24^{\frac{1}{2}}$ | 15.526 | I5 ${ }^{\frac{1}{2}}$ | 14.753 | $14 \frac{3}{4}$ | 14.036 | 14 | 12.751 | 123 | $24^{\frac{1}{2}}$ |
| 25 | $15 \cdot 622$ | $15 \frac{1}{2}$ | 14.828 | $14 \frac{3}{4}$ | 14.094 | 14 | 12.783 | 123 | 25 |

Examples.-A lease or annuity for is years to make $4 \frac{1}{2}$ per cent. snd to get back the principal is worth 9.683 or $9 \frac{3}{4}$ years' purchase of the clear annual rent. At 5 per cent. it is worth 9.394 or $9 \frac{1}{2}$ years' purchase.

TABLE for the PURCHASING of Leases，Estates，or Annuities，for terms of years certain at Rates from $1 \frac{1}{2}$ to 10 per cent．Interest which the Purchaser may thereby make of his money

| Years | $\underset{\text { Yurchase }}{\text { Yuars }} 7 \%$ |  | $\begin{gathered} \text { Years' } 8 \% \\ \text { Purchase } 8 \% \end{gathered}$ |  | Years＇ Purchase | \％ | Years＇ Purchase |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\frac{1}{2}$ | $4^{83}$ | $\frac{1}{2}$ | －481 | $\frac{1}{2}$ | －478 | $\frac{1}{2}$ | ＊476 | $\frac{1}{2}$ | $\frac{1}{2}$ |
| 1 | －935 | 1 | －926 | 1 | ＇917 | 1 | －909 | 1 |  |
| $1 \frac{1}{2}$ | 1.401 | $1 \frac{1}{2}$ | I 388 | $1 \frac{1}{2}$ | 1．374 | $1{ }^{\frac{1}{4}}$ | － 362 | $1 \frac{1}{4}$ | I $\frac{1}{2}$ |
| 2 | 1：808 | $1 \frac{3}{4}$ | $1 \cdot 783$ | I $\frac{3}{4}$ | － 759 | I $\frac{3}{4}$ | I 736 | I $\frac{3}{4}$ | 2 |
| $2 \frac{1}{2}$ | $2 \cdot 258$ | $2 \frac{1}{4}$ | 2.226 | $2 \frac{1}{4}$ | 2．195 | 24 | 2．165 | $2 \frac{1}{4}$ | $2 \frac{1}{2}$ |
| 3 | $2 \cdot 624$ | $2 \frac{1}{2}$ | $2 \cdot 577$ | $2 \frac{1}{2}$ | 2.53 I | $2 \frac{1}{2}$ | 2.487 | $2 \frac{1}{2}$ | 3 |
| 313 | $3 \cdot 057$ | 3 | 3.001 | 3 | 2.946 | 3 | 2.893 | 3 | $3 \frac{1}{2}$ |
| 4 | 3.387 | $3 \frac{1}{2}$ | 3.312 | $3 \frac{1}{4}$ | $3 \cdot 240$ | $3 \frac{1}{4}$ | $3 \cdot 170$ | $3 \frac{1}{4}$ | 4 |
| $4 \frac{1}{2}$ | $3 \cdot 804$ | $3 \frac{3}{4}$ | 3．718 | 3等 | 3.634 | 3 $\frac{3}{4}$ | 3.554 | $3 \frac{1}{2}$ | 4六 |
| 5 | $4 \cdot 100$ | 4 | 3.993 | 4 | 3.890 | 4 | 3791 | 3 $\frac{3}{4}$ | 5 |
| $5 \frac{1}{2}$ | 4.501 | $4 \frac{1}{2}$ | $4 \cdot 380$ | $4 \frac{1}{2}$ | $4 \cdot 264$ | 4 $\frac{1}{4}$ | 4．153 | $4 \frac{1}{4}$ | $5 \frac{1}{2}$ |
| 6 | 4.767 | $4{ }^{\frac{3}{4}}$ | $4 \cdot 623$ | $4 \frac{1}{2}$ | $4 \cdot 486$ | 4 $\frac{1}{2}$ | 4.355 | $4 \frac{1}{4}$ | 6 |
| $6 \frac{1}{2}$ | 5＇151 | $5 \frac{1}{4}$ | 4.993 | 5 | $4 \cdot 84 \mathrm{r}$ | $4 \frac{8}{4}$ | 4.697 | $4{ }^{\frac{3}{4}}$ | $6 \frac{1}{2}$ |
| 7 | $5 \cdot 389$ | $5 \frac{1}{2}$ | $5 \cdot 206$ | $5 \frac{1}{4}$ | $5 \cdot 033$ | 5 | 4.868 | $4 \frac{3}{4}$ | 7 |
| $7 \frac{1}{2}$ | 5．759 | $5 \frac{8}{4}$ | $5 \cdot 559$ | $5 \frac{1}{2}$ | $5 \cdot 370$ | 54 | 5＇190 | $5 \frac{1}{4}$ | 7䂞 |
| 8 | 5．971 | 6 | $5 \cdot 747$ | $5 \frac{3}{4}$ | $5 \cdot 535$ | $5 \frac{1}{2}$ | $5 \cdot 335$ | $5 \frac{1}{4}$ | 8 |
| $8 \frac{1}{2}$ | $6 \cdot 326$ | $6 \frac{1}{4}$ | 6.083 | 6 | $5 \cdot 854$ | $5 \frac{3}{4}$ | $5 \cdot 637$ | $5 \frac{3}{4}$ | 83 |
| 9 | $6 \cdot 515$ | $6 \frac{1}{2}$ | $6 \cdot 247$ | $6 \frac{1}{4}$ | $5 \cdot 995$ | 6 | $5 \cdot 759$ | $5 \frac{3}{4}$ | 9 |
| $9{ }^{\frac{1}{2}}$ | $6 \cdot 855$ | $6 \frac{3}{4}$ | $6 \cdot 567$ | $6 \frac{1}{2}$ | $6 \cdot 297$ | $6 \frac{1}{4}$ | $6 \cdot 043$ | 6 | $9 \frac{1}{2}$ |
| 10 | $7 \cdot 024$ | 7 | $6 \cdot 710$ | $6 \frac{3}{4}$ | $6 \cdot 418$ | $6 \frac{1}{2}$ | $6 \cdot 145$ | $6 \frac{1}{4}$ | 10 |
| $10 \frac{1}{2}$ | $7 \cdot 349$ | $7 \frac{1}{4}$ | 7．015 | 7 | $6 \cdot 702$ | $6 \frac{3}{4}$ | $6 \cdot 411$ | $6 \frac{1}{2}$ | 1012 |
| II | $7 \cdot 499$ | 71 | 7．139 | $7 \frac{1}{4}$ | $6 \cdot 805$ | $6 \frac{8}{4}$ | $6 \cdot 495$ | $6 \frac{1}{2}$ |  |
| $11 \frac{1}{2}$ | $7 \cdot 810$ | $7 \frac{8}{4}$ | $7 \cdot 428$ | $7 \frac{1}{2}$ | 7.074 | 7 | $6 \cdot 744$ | $6 \frac{1}{4}$ | IT13 |
| 12 | $7 \cdot 943$ | 8 | 7．536 | $7 \frac{1}{2}$ | 7－161 | $7 \frac{1}{4}$ | $6 \cdot 814$ | $6 \frac{3}{4}$ | 12 |
| 122 | 8－24I | $8 \frac{1}{4}$ | 7－8II | $7 \frac{3}{4}$ | $7 \cdot 414$ | 73 | $7 \cdot 047$ | 7 | 123 |
| 13 | $8 \cdot 358$ | $8 \frac{1}{4}$ | 7.904 | 8 | $7 \cdot 487$ | $7 \frac{1}{2}$ | $7 \cdot 103$ | 7 | 13 |
| $13 \frac{1}{2}$ | $8 \cdot 643$ | $8 \frac{3}{4}$ | $8 \cdot 165$ | $8 \frac{1}{4}$ | 7726 | $7 \frac{1}{4}$ | $7 \cdot 322$ | 7 ${ }^{\frac{1}{4}}$ | $13 \frac{1}{2}$ |
| 14 | $8 \cdot 745$ | $8 \frac{3}{4}$ | $8 \cdot 244$ | $8 \frac{1}{4}$ | $7{ }^{7} 786$ | $7{ }^{\frac{3}{4}}$ | $7 \cdot 367$ | 74 | 14 |
| 14 $4 \frac{1}{2}$ | 9.018 | 9 | $8 \cdot 492$ 8.559 | $8 \frac{1}{2}$ | $8 \cdot 011$ $8 \cdot 061$ | 8 | 7.571 7.606 | $7 \frac{1}{2}$ | 14 15 |
| I5 | $9 \cdot 108$ | 9 | $8 \cdot 559$ | $8 \frac{1}{2}$ | 8．06I | 8 | $7 \cdot 606$ | 72 | 15 |
| I5 ${ }^{\frac{1}{2}}$ | $9 \cdot 368$ | $9 \frac{1}{4}$ | $8 \cdot 794$ | 83 | $8 \cdot 272$ | $8 \frac{1}{4}$ | 7.796 | 7 ${ }^{\frac{8}{4}}$ | $15 \frac{1}{2}$ |
| 16 | 9.447 | $9{ }^{1}$ | $8 \cdot 85 \mathrm{I}$ | $8 \frac{3}{4}$ | $8 \cdot 313$ | $8 \frac{1}{4}$ | $7 \cdot 824$ | 7 ${ }^{\frac{8}{4}}$ | I6 |
| 161 | $9 \cdot 695$ | $9 \frac{4}{4}$ | $9^{\circ} 074$ | 9 | $8 \cdot 511$ | $8 \frac{1}{2}$ | $8 \cdot 001$ | 8 | $16 \frac{1}{2}$ |
| 17 | $9 \cdot 763$ | $9^{\frac{3}{4}}$ | 9．122 | 9 | $8 \cdot 544$ | $8 \frac{1}{2}$ | 8.022 8.187 | 81 | 17 |
| 17 ${ }^{1}$ | $10 \cdot 000$ | 10 | 9.332 | $9 \frac{1}{4}$ | 8.731 8.756 | $8{ }^{8}$ | $8 \cdot 187$ $8 \cdot 201$ | $8 \frac{1}{4}$ | $17 \frac{1}{2}$ |
| 18 | 10.059 | 10 | 9．372 | $9{ }^{4}$ | 8.756 8.931 | $8 \frac{3}{4}$ | $8 \cdot 201$ $8 \cdot 356$ | $8 \frac{1}{4}$ | 18 18 18 |
| $18 \frac{1}{2}$ | 10．285 | $10 \frac{1}{4}$ | 9.571 9.604 | 9 9 立 | $8 \cdot 931$ 8.950 | 9 | $8 \cdot 356$ $8 \cdot 365$ | 84 | 18 19 |
| 19 | 10.336 | 10 | 9.604 9.792 | $9 \frac{1}{2}$ 9 | $8 \cdot 950$ $9 \cdot 155$ | 9 | 8.365 8.509 | $8 \frac{1}{4}$ | 19 |
| 192 ${ }^{\frac{1}{2}}$ | 10．551 | $10 \frac{1}{2}$ | 9.792 9.818 | ${ }^{9} 9$ | $9 \cdot 115$ 9.129 | 91 | $8 \cdot 509$ 8.514 | 8 | $19 \frac{1}{2}$ 20 |
| 20 | 10.594 | $10 \frac{1}{2}$ | 9.818 | 94 | $9 \cdot 129$ | $9 \frac{1}{4}$ | $8 \cdot 514$ | $8{ }^{\frac{1}{2}}$ | 201 |
| 2012 | 10.800 | $10 \frac{3}{4}$ | $9 \cdot 997$ | 10 | $9 \cdot 283$ | $9 \frac{1}{4}$ | $8 \cdot 647$ | $8 \frac{8}{4}$ | 20，$\frac{1}{2}$ |
| 21 | 10.836 | $10 \frac{3}{4}$ | 10.017 | 10 | $9 \cdot 292$ | $9 \frac{1}{4}$ | $8 \cdot 649$ | $8 \frac{3}{4}$ | 21 |
| 21 $\frac{1}{2}$ | II 031 | II | 10.185 | $10 \frac{1}{4}$ | 9.437 | $9 \frac{1}{2}$ | $8 \cdot 773$ | $8 \frac{3}{4}$ | $21 \frac{1}{2}$ |
| 22 | II 06\％ | II | 10：201 | $10 \frac{1}{4}$ | 9.442 | $9 \frac{1}{2}$ | 8.772 8.887 | $8 \frac{3}{4}$ |  |
| $22 \frac{1}{2}$ | I I 2248 | $15 \frac{1}{4}$ | 10.360 | $10 \frac{1}{4}$ | 9.578 | $9{ }^{\frac{1}{2}}$ | 8.887 8.883 | 9 | $22 \frac{1}{2}$ |
| 23 | 11.272 | II $\frac{1}{4}$ | $10 \cdot 371$ | 10，${ }^{\frac{1}{4}}$ | 9.580 | $9 \frac{1}{2}$ | $8 \cdot 883$ | 9 | 23 |
| 231 | II 450 | $11 \frac{3}{2}$ | 10.521 | $10_{2}^{1}$ | 9.707 9.707 | 93 9 9 | $8 \cdot 991$ $8 \cdot 985$ | 9 | $23 \frac{1}{2}$ 24 |
| 24 | I I 469 | $1 \mathrm{I} \frac{1}{2}$ | 10.529 | $10 \frac{1}{2}$ | 9.707 9.826 | 98 | $8 \cdot 985$ 9.084 | 9 | $24^{\frac{1}{2}}$ |
| 24 ${ }^{\frac{1}{2}}$ | II 1.638 | $11 \frac{3}{4}$ II 4 | 10.671 10.675 | 108 108 | 9.826 9.823 | 9 9 | 9.084 9.077 | 9 | 25 |

For Explanations and Examples see pp．xviii．，zix．Tables continued on pp．xx．to xxy，and on pp．xxviii．to $x \times x i$ ．

## INTEREST TABLES

TABLE for the PURCHASING of Leaess，Estates，or Annuities，for terms of years certain at Rates from $1 \frac{1}{2}$ to 10 per cent．Interest which the

Purchaser may thereby make of hie money

| Years | $\begin{array}{\|c} \text { Yuroara' } \\ \text { Purchase } \end{array} 4 \%$ |  | $\underset{\text { Purohase }}{\text { Yearg }} 4 \frac{1}{2} \%$ |  | $\begin{gathered} \text { Years' } \\ \text { Purchas } \end{gathered}$ | \％ | $\begin{gathered} \text { Yearg' } \\ \text { Purchase } \end{gathered}$ | \％ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 251 ${ }^{\frac{1}{2}}$ | 15.894 | 16 | 15.078 | 15 | 14.323 | 14 | 12.976 | 13 | $25^{\frac{1}{2}}$ |
| 26 | 15.983 | 16 | $15 \cdot 147$ | $15 \frac{1}{4}$ | 14.375 | $14 \frac{1}{1}$ | 13.003 | 13 | 26 |
| $26 \frac{1}{2}$ | 16.248 | $16 \frac{1}{4}$ | 15.389 | $15 \frac{1}{2}$ | 14.597 | $14 \frac{1}{2}$ | $13 \cdot 187$ | $13{ }^{\frac{1}{4}}$ | $26 \frac{1}{2}$ |
| 27 | 16.330 | $16 \frac{1}{4}$ | 15.451 | $15 \frac{1}{2}$ | 14.643 | $14{ }^{\frac{9}{4}}$ | 13.211 | $13{ }^{\frac{1}{4}}$ | 27 |
| $27 \frac{1}{2}$ | 16.587 | ${ }_{16} 6$ | 15.686 | 1593 | 14.857 | $14 \frac{3}{4}$ | 13.387 | ${ }^{1} 3 \frac{1}{2}$ | $27 \frac{1}{2}$ |
| 28 | 16.663 | $16^{\frac{8}{4}}$ | 15.743 | $15 \frac{8}{4}$ | 14.898 | 15 | 13.406 | $13 \frac{1}{2}$ | 28 |
| $28 \frac{1}{2}$ | 16.914 | 17 | 15.971 16.022 | 16 | ${ }_{1}^{15 \cdot 105}$ | 15 | 13.575 | $13 \frac{1}{2}$ | $28 \frac{1}{2}$ |
| 29 | 16.984 | 17 | 16.022 | 16 | 15.141 | $15 \frac{1}{4}$ | 13.591 | $13 \frac{1}{2}$ | 29 |
| $29 \frac{1}{2}$ | 17.228 | 17 ${ }^{\frac{1}{4}}$ | 16.243 | $16 \frac{1}{4}$ | ${ }_{1} 5.341$ | ${ }^{1} 51$ | $13 \cdot 753$ | $13 \frac{8}{8}$ | 29 ${ }^{\frac{1}{2}}$ |
| 30 | 17.292 | $17 \frac{1}{4}$ | $16 \cdot 289$ | $16 \frac{1}{4}$ | ${ }^{15} 372$ | ${ }^{1} 5 \frac{1}{4}$ | $13 \cdot 765$ | $13 \frac{8}{4}$ | 30 |
| $30 \frac{1}{2}$ | 17.530 | $17^{\frac{1}{2}}$ | $16 \cdot 503$ | 161 | 15．565 | $15 \frac{1}{2}$ | 13.920 | 14 | 3012 |
| 3 I | 17.588 | 17 ${ }^{\frac{1}{2}}$ | 16.544 | $16 \frac{1}{2}$ | 15.593 | ${ }^{1} 5$ | 13.929 | 14 | 3 I |
| $3{ }^{31} \frac{1}{2}$ | 17.820 <br> 17.874 | ${ }^{1} 7{ }^{\frac{3}{3}}$ | 16.752 | $16 \frac{8}{4}$ | 15779 15.809 | ${ }^{1} 5$ | 14.078 | 14 | $31 \frac{1}{2}$ |
| 32 | 17.874 | 17\％${ }^{\frac{8}{4}}$ | $16 \cdot 789$ | 163 | 15.803 | $15 \frac{3}{4}$ | 14.084 | 14 | 32 |
| $32 \frac{1}{2}$ | 18.099 | 18 | 16.990 | 17 | ${ }^{15} 5982$ | 16 | 14.226 | $14 \frac{1}{4}$ | $32{ }^{\frac{1}{2}}$ |
| 33 | $18 \cdot 148$ | ${ }^{18 \frac{1}{4}}$ | 17.023 | 17 | $16 \cdot 003$ | 16 | 14.230 | 14，${ }^{\frac{1}{4}}$ | 33 |
| $33^{\frac{1}{2}}$ | 18.367 | 181 ${ }^{1}$ | 17.218 | $17 \frac{1}{4}$ | ${ }^{16 \cdot 176}$ | $16 \frac{1}{4}$ | 14.367 | $14 \frac{1}{4}$ | 33 ${ }^{\frac{1}{2}}$ |
| 34 | 18.411 | $18 \frac{1}{2}$ | 17.247 <br> 17.436 | $17 \frac{1}{1}$ | $16 \cdot 193$ | ${ }^{16 \frac{1}{4}}$ | 14.368 | $14 \frac{1}{4}$ | 34 |
| $34 \frac{1}{2}$ | 18．624 | 182 | 17.436 | $17 \frac{1}{2}$ | 16.360 | ${ }^{16}{ }^{1}$ | 14.499 | $14 \frac{1}{2}$ | $34 \frac{1}{2}$ |
| 35 | 18.665 | $18 \frac{8}{4}$ | 17.461 | 172 | 16.374 | $16 \frac{1}{4}$ | 14.498 | $14 \frac{1}{2}$ | 35 |
| $35 \frac{1}{2}$ | 18.872 | $18 \frac{3}{4}$ | 17.644 | 178 ${ }^{\frac{8}{4}}$ | 16.536 | 161 | 14.623 | $14 \frac{1}{2}$ | 35 ${ }^{\frac{1}{2}}$ |
| 36 | 18.908 | 19 | 17.666 | 173 ${ }^{\frac{3}{4}}$ | 16.547 | $16 \frac{1}{2}$ | 14.621 | $14 \frac{1}{2}$ | 36 |
| 361 ${ }^{\frac{1}{2}}$ | 19 Iro | 19 | 17.843 | 173 | 16.702 | $16 \frac{8}{4}$ | 14.740 | $14{ }^{\frac{8}{4}}$ | $36 \frac{1}{2}$ |
| 37 | 19.143 | 1919 ${ }^{\frac{1}{4}}$ | 17.862 | ${ }_{17} 17$ | 16.711 16.865 | ${ }^{16 \frac{8}{3}}$ | 14.737 | $14 \frac{8}{8}$ | 37 |
| $37 \frac{1}{2}$ | 19.339 | $19^{\frac{1}{4}}$ | 18.034 | 18 | $16 \cdot 861$ | $16 \frac{1}{4}$ | 14.851 | $14 \frac{3}{4}$ | 371 |
| 38 | 19.368 | $19{ }^{1}$ | 18.050 | 18 | 16.868 | $16 \frac{8}{4}$ | 14.846 | $14 \frac{8}{4}$ | 38 |
| $38 \frac{1}{2}$ | 19.558 | 198 | 18.216 | $18 \frac{1}{1}$ | $17 \cdot 013$ | 17 | 14.955 | 15 | $38 \frac{1}{2}$ |
| 39 | $19 \cdot 584$ | 19 | 18.230 | 188 | ${ }^{17} 9$ | 17 | 14.949 | 15 | 39 |
| $39^{\frac{1}{2}}$ | 19.770 | $19{ }^{\text {a }}$ | 18.391 | $18 \frac{1}{2}$ | 17.157 | ${ }^{17}{ }^{1} \frac{1}{1}$ | 15.053 | 15 | $39 \frac{1}{2}$ |
| 40 | 19.793 | $19 \frac{8}{4}$ | $18 \cdot 402$ | $18 \frac{1}{2}$ | 17.159 | $17 \frac{1}{4}$ | 15.046 | 15 | 40 |
| $40 \frac{1}{2}$ | 19.973 | 20 | $18 \cdot 557$ | $18 \frac{1}{2}$ | 17．294 | $17 \frac{1}{4}$ | 15．146 | $15 \frac{1}{4}$ | $40 \frac{1}{2}$ |
| 4 I | 19.993 | 20 | 18.566 | $18 \frac{2}{2}$ | 17.294 | 17 ${ }^{\frac{1}{4}}$ | 15.138 | $15 \frac{1}{4}$ | 41 |
| $4{ }_{4}^{41}$ | $20 \cdot 168$ $20 \cdot 186$ | 204 | $18 \cdot 717$ 18.724 | 189 ${ }^{18}$ | 17.424 | 171 ${ }^{1}$ | 15.233 15.225 | $15{ }^{1}$ | $4{ }^{1 \frac{1}{2}}$ |
| 42 ${ }^{\frac{1}{2}}$ | $20 \cdot 356$ | $20 \frac{1}{4}$ | 18.869 | $18 \frac{8}{4}$ | 17.548 | $17 \frac{1}{2}$ | 15.225 15 | $15{ }^{\frac{1}{2}}$ | 42 |
| 43 | 20．371 | $20 \frac{1}{4}$ | 18.874 | $18 \frac{3}{4}$ | 17.546 | $17 \frac{1}{2}$ | 15.306 | $15 \frac{1}{4}$ |  |
| $43 \frac{1}{2}$ | $20 \cdot 536$ | 202 | 19.015 | 19 | 17.666 | $17{ }^{\frac{3}{7}}$ | 15393 | $15 \frac{3}{2}$ | $43 \frac{1}{2}$ |
| 44 | $20 \cdot 549$ | 202 $\frac{1}{2}$ | 19.018 | 19 | 17.663 | $17 \frac{8}{4}$ | 15.383 | $15 \frac{1}{2}$ | 44 |
| $44 \frac{1}{2}$ | 20.709 | $20{ }^{\text {崖 }}$ | $19 \cdot 155$ | $19 \frac{1}{4}$ | 17779 | $17 \frac{8}{4}$ | 15.466 | $15 \frac{3}{2}$ | 44乭 |
| 45 | 20.720 | 20芴 | 19.156 | $19 \frac{1}{4}$ | 17.774 | $17 \frac{3}{4}$ | 15.456 | $15 \frac{1}{2}$ | 45 |
| $45{ }^{\frac{1}{2}}$ | 20.876 | 21 | 19.288 | $19 \frac{1}{4}$ | 17.886 | 18 | 15.535 | $15 \frac{2}{2}$ | 4513 |
| 46 | 20.885 | 21 | 19.288 | $19 \frac{1}{4}$ | 17.880 17.988 | 18 | 15.524 15.600 | $15 \frac{2}{2}$ | 46 |
| $4{ }^{46}$ | 21.036 21.043 | 21 | 19416 19445 | 192 <br> 19 <br> 1 | 17.988 17.981 | 18 | 15.600 15.589 | $15 \frac{1}{15}$ |  |
| 471 ${ }^{\frac{1}{2}}$ | 21.190 | $21 \frac{1}{4}$ | 19.538 | $19 \frac{1}{2}$ | 18.085 | 8 | 15.661 | $15 \frac{3}{4}$ | 471 $\frac{1}{2}$ |
| 48 | 21．195 | $21 \frac{1}{4}$ | 19.536 | $19 \frac{1}{2}$ | 18.077 | 18 | 15.650 | $15 \frac{8}{8}$ | 48 |
| $48{ }^{\frac{1}{2}}$ | 21.338 | $21 \frac{1}{4}$ | 19.655 | $19 \frac{3}{4}$ | 18．177 | $18 \frac{1}{4}$ | 15.719 | $15 \frac{3}{4}$ | 483 |
| 49 | 21.341 | $2 \mathrm{I}_{4}^{1}$ | 19.651 | $19 \frac{3}{4}$ | $18 \cdot 169$ | $18 \frac{1}{4}$ | 15.708 | $15 \frac{3}{4}$ |  |
| $49 \frac{1}{2}$ | 21.480 | 212 | 19767 19 | 198 | 18.265 18.256 | $18 \frac{1}{1}$ | 15773 | $15 \frac{3}{4}$ | 4912 |
| 50 | 21.482 | $21 \frac{3}{2}$ | 19.762 | 1984 | 18.256 | $18 \frac{1}{4}$ | 15762 | $15 \frac{3}{4}$ | 50 |

[^0]（xxviii）

| Years | $\begin{gathered} \begin{array}{c} \text { Yearr' } \\ \text { Purchase } \end{array} \\ \hline \% \end{gathered}$ |  | $\begin{aligned} & \text { Years' } \\ & \text { Purchase } \\ & \hline \end{aligned}$ |  | $\underset{\text { Purchase }}{\text { Years' }} 9 \%$ |  | $\underset{\text { Purchase }}{\text { Yeare' }} \mathbf{1 0 \%}$ |  | Yeal |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $25^{\frac{1}{2}}$ | 11.814 | 118 | 10.809 | $10 \frac{3}{4}$ | 9.934 | 10 | 9.169 | $9{ }^{\frac{1}{4}}$ | $25^{\frac{1}{2}}$ |
| 26 | 11.826 | $11 \frac{3}{4}$ | 10.810 | 1038 | 9.929 | 10 | 9•16I | $9{ }^{4}$ | 26 |
| $26 \frac{1}{2}$ | I1.979 | 12 | $10 \cdot 936$ | II | 10.033 | 10 | $9 \cdot 247$ | $9 \frac{1}{4}$ | 26⿺辶 |
| 27 | 11.987 | 12 | $10 \cdot 935$ | II | 10.027 | 10 | 9.237 | $9 \frac{1}{4}$ | 27 |
| $27 \frac{1}{2}$ | 12.132 | $12 \frac{1}{4}$ | $1 \mathrm{I} \cdot 054$ | II | 10.124 | 10 | $9 \cdot 317$ | $9{ }^{\frac{1}{4}}$ | $27 \frac{1}{2}$ |
| 28 | 12•137 | $12 \frac{1}{4}$ | II.051 | II | 10.116 | 10 | $9 \cdot 307$ | $9{ }^{\frac{1}{4}}$ | 28 |
| $28 \frac{1}{2}$ | 12.275 | $12 \frac{1}{4}$ | II'163 |  | $10 \cdot 207$ | $10 \frac{1}{4}$ | 9.380 | $9 \frac{1}{2}$ | $28 \frac{1}{2}$ |
| 29 | 12.278 | $12 \frac{1}{4}$ | II•158 |  | $10 \cdot 198$ | $10 \frac{1}{4}$ | 9.370 | 92 | 29 |
| 2912 | 12.409 | $12 \frac{1}{2}$ | $1 \mathrm{I} \cdot 264$ | 113 ${ }^{\frac{1}{4}}$ | $10 \cdot 283$ | $10 \frac{1}{4}$ | $9 \cdot 438$ | $9 \frac{1}{2}$ | 29 ${ }^{\frac{1}{2}}$ |
| 30 | 12.409 | $12 \frac{1}{2}$ | II 225 | $11 \frac{1}{4}$ | $10 \cdot 274$ | 10 ${ }^{\frac{1}{4}}$ | $9 \cdot 427$ | $9 \frac{1}{2}$ | 30 |
| $30 \frac{1}{2}$ 31 | 12.534 12.532 | $12 \frac{1}{2}$ $12 \frac{1}{2}$ 12 | 11.357 II 350 |  | $10 \cdot 353$ 10.343 | ${ }^{10} 1$ | 9.490 | $9 \frac{1}{2}$ | $30 \frac{1}{2}$ |
| 31 | 12.532 12.650 | $12 \frac{1}{2}$ | II 350 | ${ }^{11} \frac{1}{4}$ | $10 \cdot 343$ | ${ }^{10 \frac{1}{4}}$ | 9.479 | $9 \frac{1}{2}$ | 3I |
| $3{ }^{12} \frac{1}{2}$ | 12.650 | ${ }^{12} 2$ | 11.444 | ${ }_{1}^{11} \frac{1}{2}$ | $10 \cdot 417$ | $10 \frac{1}{2}$ | 9.538 | $9 \frac{1}{2}$ | $3 \mathrm{I} \frac{1}{2}$ |
| 32 | 12.647 12.759 | $12 \frac{3}{4}$ | 11.435 | 115 | $10 \cdot 406$ | $10 \frac{1}{2}$ | 9.526 | $9 \frac{1}{2}$ | 32 |
| $32 \frac{1}{2}$ | 12.759 | $12 \frac{3}{4}$ | $11 \cdot 523$ | $1{ }^{1} \frac{1}{2}$ | $10 \cdot 475$ | $10 \frac{1}{2}$ | 9.581 | $9 \frac{1}{2}$ |  |
| 33 | 12.754 | $12 \frac{3}{4}$ | 11.514 | $1{ }^{1} \frac{1}{2}$ | 10.464 | 10를 | 9.569 | $9 \frac{1}{2}$ |  |
| $33 \frac{1}{2}$ | 12.860 | 123 | $11 \cdot 597$ | $11{ }^{1} \frac{1}{2}$ | $10 \cdot 529$ | $10{ }^{1}$ | 9.620 | $9 \frac{1}{2}$ | $33^{\frac{1}{2}}$ |
| 344 | 12.854 12.955 | 123 ${ }^{\frac{3}{4}}$ | 11.587 | ${ }^{11} 1^{\frac{1}{2}}$ | 10.518 | $10 \frac{1}{1}$ | 9.609 | $9 \frac{1}{2}$ | 34 |
| $34 \frac{1}{2}$ | 12.955 | 13 | 11.665 | $1{ }^{1} \frac{8}{4}$ | $10 \cdot 578$ | $10 \frac{1}{2}$ | $9 \cdot 655$ | $9{ }^{\text {a }}$ | $34{ }^{\frac{1}{2}}$ |
| 35 | 12.948 | 13 | 11.655 | $11 \frac{8}{4}$ | $10 \cdot 567$ | $10^{2}$ | $9 \cdot 644$ | 94 | 35 |
| $35 \frac{1}{2}$ | 13.044 | 13 | 11.728 | ${ }_{1}^{11}{ }^{\frac{3}{4}}$ | 10.623 | $10 \frac{1}{2}$ | $9 \cdot 687$ | $9 \frac{3}{2}$ | $35^{\frac{1}{2}}$ |
| 36 | 13.035 | 13 | 11.717 | $1{ }^{1} \frac{3}{4}$ | 10.612 | ${ }^{10 \frac{1}{3}}$ | $9 \cdot 677$ | $9{ }^{\frac{3}{4}}$ | 36 |
| $36 \frac{1}{2}$ | 13.126 | 13 | 11.786 | $11{ }^{\frac{3}{4}}$ | 10.664 | 10 ${ }^{\frac{3}{4}}$ | $9 \cdot 716$ | 9 | $36 \frac{1}{2}$ |
| 37 | 13.117 | 13 | 11775 | ${ }^{11} 1{ }^{\frac{3}{3}}$ | 10.653 | ${ }_{10}^{10}$ | $9 \cdot 706$ | $9{ }^{4}$ | 37 |
| $37{ }^{\frac{1}{2}}$ | 13.203 | I $3 \frac{1}{4}$ | 11.840 | $11{ }^{\frac{3}{4}}$ | 10.702 | $10 \frac{8}{4}$ | 9.742 | 9 | $37 \frac{1}{2}$ |
| ${ }^{38}{ }^{88}$ | 13.193 13.275 | $13 \frac{1}{4}$ | 11.829 11.890 | $11 \frac{3}{4}$ | 10.691 10.736 |  | 9.733 9.766 | $9{ }^{\frac{7}{4}}$ | $3^{8}$ |
| $38{ }^{\frac{1}{2}}$ 39 | 13.275 13.265 | ${ }^{1} 3 \frac{1}{4}$ | 11.890 | 12 | 10.736 10.726 | ${ }_{10}^{10}$ | 9'766 | $9{ }^{\frac{3}{4}}$ | $38 \frac{1}{2}$ |
| ${ }_{39} 39$ | 13.265 13.342 | $13 \frac{1}{4}$ | 11.879 | 12 | 10.726 10.768 | 10 <br> 10 <br> 10 | 97757 9.788 | ${ }^{9} 9$ | 39 |
| 40 | 13.332 | $13 \frac{1}{4}$ | 11925 | 12 | $10 \cdot 757$ | $10 \frac{8}{4}$ | 9779 | $9{ }^{94}$ | $40^{\circ}$ |
| $40 \frac{1}{2}$ | 13.405 | $13 \frac{1}{2}$ | 11979 | 12 | $10 \cdot 797$ | $10 \frac{3}{4}$ | 9.808 | $9{ }^{\frac{3}{4}}$ | $40^{\frac{1}{2}}$ |
| 4 I | 13.394 | $13 \frac{1}{2}$ | 11.967 | 12 | 10.787 | $10 \frac{3}{4}$ | 9.799 | $9{ }^{\frac{3}{4}}$ | 4 I |
| $4{ }^{\frac{1}{2}}$ | 13.464 | $13 \frac{2}{1}$ | $12 \cdot 018$ | 12 | 10.823 | $10 \frac{8}{4}$ | $9 \cdot 826$ | $9{ }^{\frac{8}{4}}$ | $4{ }^{1} \frac{1}{2}$ |
| 42 | 13.452 | $13 \frac{1}{2}$ | 12.007 | 12 | 10.813 | $10 \frac{8}{4}$ | 9.817 | $9{ }^{\frac{3}{4}}$ | 42 |
| $42 \frac{1}{2}$ | 13.518 | $13 \frac{1}{2}$ | 12.054 | 12 | 10.848 | $10 \frac{8}{4}$ | 9.842 | $9{ }^{\frac{3}{4}}$ | $42 \frac{1}{2}$ |
| 43 | 13.507 | $13 \frac{1}{2}$ | 12.043 | 12 | 10.838 | $10 \frac{8}{4}$ | 9.834 | $9 \frac{8}{4}$ | 43 |
| $43 \frac{1}{2}$ | 13.569 | $13 \frac{1}{2}$ | 12.088 | 12 | 10.870 | $10 \frac{3}{4}$ | 9.857 | $9{ }^{\frac{8}{4}}$ | $43{ }^{\frac{1}{2}}$ |
| 44 | 13.558 | $13 \frac{1}{2}$ | 12.077 | 12 | 10.861 | $10 \frac{3}{4}$ | 9.849 | $9{ }^{\frac{3}{4}}$ | 44 |
| $44 \frac{1}{2}$ | 13.617 | $13 \frac{1}{2}$ | $12 \cdot 119$ 12.108 | 12 | 10.890 | 11 | 9.870 | ${ }^{9} 9$ | $44 \frac{1}{2}$ |
| 45 | 13.606 | $13 \frac{1}{2}$ | 12.108 | 12 | 10.881 | II | 9.863 | $9 \frac{3}{4}$ | 45 |
| $45^{\frac{1}{2}}$ | 13.662 | $13 \frac{3}{4}$ | $12 \cdot 148$ | $12 \frac{1}{1}$ | 10.909 | 11 | 9.882 | 10 | 45즐 |
| 46 | 13.650 | $13{ }^{3}$ | 12.137 | $12 \frac{1}{4}$ | $10 \cdot 900$ | 11 | 9.875 | 10 | 46 |
| $46 \frac{1}{2}$ | 13.703 | $13 \frac{8}{4}$ | 12174 | $12 \frac{1}{4}$ | 10.926 | 11 | 9.893 | 10 | 461 |
| 47 | 13.692 | ${ }^{1} 3 \frac{3}{4}$ | $12 \cdot 164$ | $12 \frac{1}{1}$ | 10.918 | 11 | 9.887 | 10 | 47 |
| $47 \frac{1}{2}$ | 13.742 | $13 \frac{8}{4}$ | 12.199 | $12 \frac{1}{4}$ | $10 \cdot 941$ | II | 9.903 | 10 | $47 \frac{1}{2}$ |
| 48 | 13.730 | $13 \frac{3}{4}$ | $12 \cdot 189$ | $12 \frac{1}{4}$ | 10.934 | 11 | 9.897 | 10 | 48 |
| $48 \frac{1}{2}$ | 13.778 | ${ }^{1} 3 \frac{3}{4}$ | 12.222 | $12 \frac{1}{4}$ | 10.956 | II | 9.912 | 10 | $48 \frac{1}{2}$ |
| 49 | 13.767 I 3.812 | $13 \frac{8}{4}$ | 12.212 | $12 \frac{1}{1}$ | 10.948 | I I | 9.906 | 10 | 49 |
| $49 \frac{1}{2}$ | 13.812 13.801 | ${ }^{1} 3 \frac{3}{4}$ | 12.243 12.233 | $12 \frac{1}{4}$ | 10.969 10.962 | 11 | 9.920 | 10 | $49 \frac{1}{2}$ |
| 50 | 13.801 | $13 \frac{3}{4}$ | 12.233 | $12 \frac{1}{4}$ | 10.962 | 11 | 9.915 | 10 | 50 |

For Explanations and Examples see pp. xviii., xix. Tables continued on pp . xx. to xxvii. and on pp. xxx., xxxi.

TABLE for the PURCHASING of Leases，Estates，or Annnities，for terms of years certain at Rates from $1 \frac{1}{2}$ to 10 per cent．Interest which the Purchaser may thereby make of his money．

| Years | Years＇ Purchase | $4 \%$ | $\underset{\text { Purohase }}{\text { Years }} 4 \frac{1}{2} \%$ |  | Yeara＇ Purchase | \％ | Years＇ Purohase |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | 21.617 | 21 $\frac{1}{2}$ | 19．868 | $19 \frac{8}{4}$ | $18 \cdot 339$ | $18 \frac{1}{4}$ | 15.813 | $15 \frac{3}{4}$ | 51 |
| 52 | 21.748 | $21 \frac{3}{4}$ | 19.969 | 20 | $18 \cdot 418$ | $18 \frac{1}{2}$ | $15.86 I$ | 154 | 52 |
| 53 | 21.873 | $21 \frac{3}{4}$ | $20 \cdot 066$ | 20 | 18.493 | 188 | 15.907 | 16 | 53 |
| 54 | 21．993 | 22 | $20 \cdot 159$ | 2014 | $18 \cdot 565$ | $18 \frac{1}{2}$ | 15.950 | 16 | 54 |
| 55 | 22．109 | 22 | $20 \cdot 248$ | $20 \frac{1}{4}$ | 18.633 | $18 \frac{3}{4}$ | 15.991 | 16 | 55 |
| 56 | $22 \cdot 220$ | $22 \frac{1}{4}$ | 20.333 | 201 | 18.699 | $18 \frac{8}{4}$ | 16.029 | 16 | 56 |
| 57 | 22.327 | 22， | 20.414 | 201 $\frac{1}{2}$ | $18 \cdot 761$ | $18 \frac{3}{4}$ | 16.065 | 16 | 57 |
| 58 | 22.430 | 22，$\frac{1}{2}$ | $20 \cdot 492$ | $20 \frac{1}{2}$ | 18.820 | $18 \frac{8}{4}$ | 16.099 | 16 | 58 |
| 59 | 22.528 | 22－2 | $20 \cdot 567$ | 201 | 18.876 | 19 | 16．131 | $16 \frac{1}{4}$ | 59 |
| 60 | 22.623 | 22⿺𠃊 | 20.638 | 203 ${ }^{\frac{3}{4}}$ | 18.929 | 19 | 16．161 | 16 $\frac{1}{4}$ | 60 |
| 61 | 22.715 | 223 | $20 \cdot 706$ | 203 | 18.980 | 19 | $16 \cdot 190$ | $16 \frac{1}{4}$ | 6 I |
| 62 | 22.803 | 22，$\frac{3}{4}$ | 20．772 | 203 | 19.029 | 19 | $16 \cdot 217$ | $16 \frac{1}{4}$ | 62 |
| 63 | 22.887 | 23 | 20.834 | $20 \frac{8}{4}$ | 19.075 | 19 | $16 \cdot 242$ | $16 \frac{1}{4}$ | 63 |
| 64. | 22.969 | 23 | $20 \cdot 894$ | 21 | 19．119 | 19 | $16 \cdot 266$ | $16 \frac{1}{4}$ | 64 |
| 65 | 23＇047 | 23 | 20.951 | 21 | 19．161 | $19 \frac{1}{4}$ | $16 \cdot 289$ | $16 \frac{1}{4}$ | 65 |
| 66 | $23 \cdot 122$ | 23 | $2 \mathrm{I} \cdot 006$ | 2 I | 19．201 | 19 ${ }^{\frac{1}{4}}$ | $16 \cdot 310$ | $16 \frac{1}{4}$ | 66 |
| 67 | 23．194 | 23䂞 | 21.058 | 21 | 19：239 | $19 \frac{1}{4}$ | 16.331 | 16 ${ }^{\frac{1}{4}}$ | 67 |
| 68 | $23 \cdot 264$ | 23年 | $21 \cdot 108$ | 2 I | 19.275 | $19 \frac{1}{4}$ | 16.350 16.368 | 16 $\frac{1}{4}$ | 68 |
| 69 | 23.330 | 23⿺𠃊 | 2I＇156 | $2.1 \frac{1}{4}$ | 19.310 | 199 ${ }^{\frac{1}{4}}$ | $16 \cdot 368$ $16 \cdot 385$ | 164 | 69 |
| 70 | 23.395 | 23⿺⿻十⿵冂⿰入入丶－2 | 21．202 | $21 \frac{1}{4}$ | $19 \cdot 343$ | $19 \frac{1}{4}$ | $16 \cdot 385$ | $16 \frac{1}{2}$ | 70 |
| 71 | 23.456 | 23年 | 21.246 | $21 \frac{1}{4}$ | 19.374 | $19 \frac{1}{4}$ | 16.401 | $16 \frac{1}{2}$ | 71 |
| 72 | 23.516 | 23⿺⿻十⿵冂⿰入入丶－2 | 21.288 | $21 \frac{1}{4}$ | 19.404 | $19 \frac{1}{3}$ | 16.412 | $6 \frac{1}{2}$ | 72 |
| 73 | 23.573 | 23 $\frac{1}{2}$ | 21.328 | $21 \frac{1}{4}$ | 19.432 | 192 ${ }^{2}$ | 16.430 | $6 \frac{1}{2}$ | 73 |
| 74 | 23.628 | 23年 | 2I 367 | $21 \frac{1}{4}$ | 19.459 | $19 \frac{1}{2}$ | 16．443 | $16 \frac{1}{2}$ | 74 |
| 75 | $23 \cdot 680$ | $23 \frac{3}{4}$ | 21.404 | $2 \mathrm{I} \frac{1}{2}$ | 19.485 | 192 | $16 \cdot 456$ | $16 \frac{1}{2}$ | 75 |
| 76 | 23.731 | 23年 | 21．439 | $21 \frac{1}{2}$ | 19.509 | $19 \frac{1}{2}$ | 16.468 | $16 \frac{1}{2}$ | 76 |
| 77 | 23.780 | $23 \frac{3}{4}$ | 21.473 | $211 \frac{1}{2}$ | 19.533 | $19^{\frac{2}{2}}$ | 16.479 | $16 \frac{2}{2}$ | 77 |
| 78 | 23.827 | $23 \frac{3}{4}$ | 21.505 | $21 \frac{1}{2}$ | 19.555 | $19 \frac{1}{2}$ | 16.490 | $16 \frac{1}{2}$ | 78 |
| 79 | $23 \cdot 872$ | $23 \frac{3}{4}$ | 21．536 | $21 \frac{1}{2}$ | 19.576 | 192 $\frac{1}{2}$ | $16 \cdot 500$ | $16 \frac{1}{2}$ | 79 |
| 80 | 23.915 | 24 | 21．565 | $21 \frac{3}{3}$ | 19.596 | 19 ${ }^{1}$ | $16 \cdot 509$ | 161 $\frac{1}{2}$ | 80 |
| 81 | 23.957 | 24 | 2I 594 | $2 \mathrm{I} \frac{1}{2}$ | 19.616 | 19 $\frac{1}{2}$ | $16 \cdot 518$ | $16 \frac{1}{2}$ | 81 |
| 82 | 23.997 | 24 | 2 I 62I | $21 \frac{1}{3}$ | 19.634 | $19 \frac{3}{4}$ | $16 \cdot 526$ | 16 ${ }^{\frac{1}{2}}$ | 82 |
| 83 | $24 \cdot 036$ | 24 | $2 \mathrm{I} \cdot 647$ | 21 年 | 19.651 | $19 \frac{3}{4}$ | 16．534 | $16 \frac{1}{2}$ | 83 |
| 84 | 24.073 | 24 | 21.671 | $21 . \frac{8}{4}$ | $19 \cdot 668$ | $19 \frac{3}{4}$ | $16 \cdot 542$ | $16 \frac{1}{2}$ | 84 |
| 85 | 24．109 | 24 | $21 \cdot 695$ | $21 \frac{3}{4}$ | $19 \cdot 684$ | $19 \frac{3}{4}$ | $16 \cdot 549$ | 16 $\frac{1}{3}$ | 85 |
| 86 | 24．143 | 24，$\frac{1}{4}$ | 21．718 | 218 | 19.699 | $19 \frac{3}{4}$ | 16.556 | 1631 | 86 |
| 87 | $24 \cdot 176$ | 24，$\frac{1}{4}$ | 21.740 | 218 | 19.713 | $19 \frac{3}{4}$ | $16 \cdot 562$ | $16 \frac{1}{2}$ | 87 |
| 88 | $24 \cdot 207$ | 24，$\frac{1}{4}$ | 21.760 | $21 \frac{3}{4}$ | 19.727 | $19 \frac{3}{4}$ | $16 \cdot 568$ | $16 \frac{1}{3}$ | 88 |
| 89 | 24.238 | $24 \frac{1}{4}$ | 21.780 | $21 \frac{8}{4}$ | 19.740 | $19 \frac{3}{4}$ | $16 \cdot 573$ | $16 \frac{2}{2}$ | 89 |
| 90 | $24 \cdot 267$ | $24 \frac{1}{4}$ | 21.799 | $21 \frac{8}{4}$ | 19.752 | $19 \frac{3}{4}$ | 16.579 | $16 \frac{1}{2}$ | 90 |
| 91 | 24.295 | $24 \frac{1}{f}$ | 21.817 | $21 \frac{1}{4}$ | 19.764 | $19 \frac{3}{4}$ | $16 \cdot 584$ | $16 \frac{1}{2}$ | 9 I |
| 92 | 24.323 | 24，$\frac{1}{4}$ | $2 \mathrm{I} \cdot 835$ | $21 \frac{8}{4}$ | 19.775 | $19 \frac{3}{4}$ | 16.588 | 1631 | 92 |
| 93 | 24.349 | 24 ${ }^{\frac{1}{4}}$ | $2 \mathrm{I} \cdot 852$ | $2 \mathrm{I} \frac{3}{4}$ | 19.786 | 19 i | $16 \cdot 593$ | $16 \frac{1}{2}$ | 93 |
| 94 | 24.374 | 24 ${ }^{\frac{1}{4}}$ | $2 \mathrm{I} \cdot 868$ | $21 \frac{3}{4}$ | 19.796 | $19 \frac{3}{4}$ | $16 \cdot 597$ | 163 | 94 |
| 95 | 24.398 | 241 $\frac{1}{2}$ | 21.883 | 22 | 19.806 | 194 | 16.601 | 163 | 95 |
| 96 | 24.421 | 24 4 | 2I．897 | 22 | 19．815 | $19 \frac{3}{4}$ | $16 \cdot 605$ | $16 \frac{1}{2}$ | 96 |
| 97 | 24.443 | 24立 | 21.911 | 22 | 19.824 | $19 \frac{3}{4}$ | $16 \cdot 608$ | $16 \frac{1}{2}$ | 97 |
| 98 | 24.465 | 24 ${ }^{2}$ | 2 I ＇925 | 22 | 19.832 | 19 ${ }^{\frac{4}{4}}$ | 16.611 | $16 \frac{1}{2}$ | 98 |
| 99 | 24.485 | 24솔 | $2 \mathrm{I} \cdot 938$ | ${ }^{1} 22$ | 19.840 | $19 \frac{3}{4}$ | $16 \cdot 615$ | $16 \frac{1}{2}$ | 99 |
| 100 | 24．50 | 24立 | 21.950 | ， 22 | 19．848 | $19 \frac{3}{4}$ | 16．618 | 163 | 100 |

Examples．－A lease or annuity for 70 years to make 4 per cent．and to get back the principal is worth 23.395 or $23 \frac{1}{2}$ years＇purchase of the clear annual rent．At 6 per cent．it is worth 16.385 or $16 \frac{1}{2}$ years＇purchase．

TABLE for the PURCHASING of Leases, Estatee, or Annuities, for terms of years certain at Rates from $1 \frac{1}{2}$ to 10 per cent. Interest which the Purchaser may thereby make of his money.

| Years | $\begin{gathered} \text { Years' } \\ \text { Purchase } \end{gathered} 7 \%$ |  | $\begin{gathered} \text { Yeare' } \\ \text { Purchase } \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { Yearrs' } \\ \text { Purchase } \end{gathered} 9 \%$ |  | $\left\lvert\, \begin{gathered} \text { Years' } \\ \text { Purchase } \end{gathered} 0 \% \%\right.$ |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | 13.832 | $13{ }^{\frac{3}{4}}$ | 12.253 | $12 \frac{1}{4}$ | 10.974 | 11 | 9.923 | 10 | 51 |
| 52 | 13.862 | $13 \frac{3}{4}$ | 12.272 | $12 \frac{1}{4}$ | 10.985 | 11 | 9.930 | 10 | 52 |
| 53 | 13.890 | 14 | 12.288 | $12 \frac{1}{4}$ | $10 \cdot 996$ | ${ }_{1}$ | 9.936 | 10 | 53 |
| 54 | 13.916 | 14 | 12.304 | $12 \frac{1}{4}$ | 11.005 | 11 | 9.942 | 10 | 54 |
| 55 | 13.940 | 14 | 12.319 | $12 \frac{1}{4}$ | II ${ }^{\text {OI }} 4$ | 11 | 9.947 | 10 | 55 |
| 56 | 13.963 | 14 | 12.332 | 12 ${ }^{\frac{1}{4}}$ | 11.022 | 11 | 9.952 | 10 | 56 |
| 57 | 13.984 | 14 | 12.344 | $12 \frac{1}{4}$ | 11.029 | II | 9.956 | 10 | 57 |
| 58 | $14^{\circ} 003$ | 14 | 12.356 | $12 \frac{1}{1}$ | 11.036 | II | 9.960 | 10 | 58 |
| 59 | 14.022 | 14 | 12.367 | $12{ }_{1}^{1}$ | 11.042 | 11 | $9 \cdot 964$ | 10 | 59 |
| 60 | 14.039 | 14 | 12.377 | $12 \frac{1}{2}$ | II.048 | 11 | $9 \cdot 967$ | 10 | 60 |
| 61 | 14.055 | 14 | 12.386 | $12 \frac{1}{2}$ | 11.053 | 11 | 9.970 | 10 | 6 x |
| 62 | 14.070 | 14 | 12.394 | $12 \frac{1}{2}$ | 11.058 | 11 | 9.973 | 10 | 62 |
| 63 | 14.084 | 14 | 12.402 | $122^{\frac{1}{2}}$ | 11.062 | 11 | 9.975 | 10 | 63 |
| 64 | 14.098 | 14 | 12.409 | $12 \frac{1}{2}$ | 11.066 | 11 | 9.978 | 10 | 64 |
| 65 | 14.110 | 14 | 12:416 | $12 \frac{1}{2}$ | 11.070 | II | 9.980 | 10 | 65 |
| 66 | 14.121 | 14 | 12.422 | $12 \frac{1}{2}$ | 11.073 | 11 | 9.981 | 10 | 66 |
| 67 | 14.132 | $14 \frac{1}{4}$ | 12.428 | $12 \frac{2}{2}$ | Ir.077 | II | 9.983 | 10 | 67 |
| 68 | 14. 142 | 144 | 12.433 | $12 \frac{1}{2}$ | 11.079 | 11 | 9.985 | 10 | 68 |
| 69 | 14.152 14.160 | 144 | 12.438 | $12 \frac{1}{2}$ | 11.082 | 11 | 9.986 | 10 | 69 |
| 70 | 14.160 | 14.4 | 12.443 | 122 | 11.084 | II | 9.987 | 10 | 70 |
| 71 | 14'169 | $14 \frac{1}{4}$ | 12.447 | $12 \frac{1}{2}$ | 11.087 | II | $9 \cdot 988$ | 10 | 71 |
| 72 | 14.176 | 144 | 12.451 | $12 \frac{1}{2}$ | 11.089 | II | 9.990 | 10 | 72 |
| 73 | ${ }^{14} \cdot 183$ | 144 | 12.455 | $12 \frac{1}{2}$ | il 1091 | II | 9.990 | 10 | 73 |
| 74 | $14^{\prime} 190$ | $14 \frac{1}{4}$ | 12.458 | $12 \frac{1}{2}$ | 11.092 | II | 9.991 | 10 | 74 |
| 75 | 14'196 | $14 \frac{1}{4}$ | 12.461 | $12 \frac{3}{2}$ | 11.094 | 11 | 9.992 | 10 | 75 |
| 76 | 14.202 | $14 \frac{1}{4}$ | 12.464 | $12 \frac{1}{2}$ | II.095 | 1 I | $9 \cdot 993$ | 10 | 76 |
| 77 | 14.208 | $14 \frac{1}{4}$ | 12.467 | $12 \frac{1}{2}$ | 11.097 | 11 | 9.994 | 10 | 77 |
| 78 | 14.213 | $14 \frac{1}{4}$ | 12.469 | $12 \frac{1}{2}$ | 11.098 | II | 9.994 | 10 | 78 |
| 79 | 14.218 14.222 | $14 . \frac{1}{4}$ | 12.471 12.474 | $12 \frac{2}{2}$ |  | II | 9.995 9.995 | 10 | 79 80 |
| 8r | 14.226 | $14 \frac{1}{4}$ | 12.475 | $12 \frac{1}{2}$ | II•IOI | 11 | 9.996 | 10 | 8 I |
| 82 | 14.230 | $14 \frac{1}{1}$ | 12.477 | $12 \frac{1}{2}$ | I-I | 11 | 9.996 | 10 | 82 |
| 83 | 14.234 | $14 \frac{1}{4}$ | 12.479 | $12 \frac{2}{3}$ | I•102 | 11 | $9 \cdot 996$ | 10 | 83 |
| 84 | 14.237 | $14 \frac{1}{7}$ | 12.481 | $12 \frac{1}{2}$ | II $\cdot 103$ | 11 | 9.997 | 10 | 84 |
| 85 | 14.240 | $14 \frac{1}{4}$ | 12.482 | $12 \frac{2}{2}$ | II•104 | II | $9 \cdot 997$ | 10 | 85 |
| 86 | 14.243 | $14 \frac{1}{4}$ | 12.483 | $12 \frac{2}{2}$ | II•104 | 11 | $9 \cdot 997$ | 10 | 86 |
| 87 | 14.246 | $14 \frac{1}{4}$ | 12.485 | $12 \frac{1}{2}$ | II•105 | II | 9.997 | 10 | 87 |
| 88 | 14.249 | $14 \frac{1}{7}$ | 12.486 | $12 \frac{1}{2}$ | II $\cdot 105$ | 11 | 9.998 | 10 | 88 |
| 89 | 14.251 | $14 \frac{1}{4}$ | 12.487 | $12 \frac{1}{2}$ | ${ }_{\text {II }} \cdot 106$ | 11 | 9.998 | 10 | 89 |
| 90 | 14.253 | $14 \frac{1}{4}$ | 12.488 | $12 \frac{1}{2}$ | II•106 | 11 | 9.998 | 10 | 90 |
| 91 | 14.255 | $14 \frac{1}{1}$ | 12.489 | I2 $2 \frac{1}{2}$ | ${ }^{11} \cdot 107$ | 11 | $9 \cdot 998$ | 10 | 91 |
| 92 | 14.257 | $14 \frac{1}{4}$ | 12.489 | $12 \frac{3}{2}$ | ${ }^{11} \cdot 107$ | 11 | 9.998 | 10 | 92 |
| 93 | 14.259 | $14 \frac{1}{1}$ | 12.490 | $12 \frac{1}{2}$ | $11 \cdot 107$ II | 11 | 9.999 | 10 | 93 |
| 94 | 14.261 | $14 \frac{1}{1}$ | 12.491 | $12 \frac{2}{2}$ | II•108 | 11 | 9.999 | 10 | 94 |
| 95 | 14.263 | $14 \frac{1}{4}$ | 12.492 | $12 \frac{1}{2}$ | 11.108 | 11 | 9.999 | 10 | 95 |
| 96 | 14.264 | $14 \frac{1}{4}$ | 12.492 | $12 \frac{2}{2}$ | 11.108 | II | 9.999 | 10 | 96 |
| 97 | 14.266 | $14 \frac{1}{4}$ | 12.493 | $12 \frac{1}{2}$ | $\begin{array}{r}11 \cdot 109 \\ \hline 15 \cdot 109\end{array}$ | 11 | 9.999 | 10 | 97 |
| 98 | 14.267 | $14 \frac{1}{4}$ | 12.493 | $12 \frac{1}{2}$ | II 1 109 | II | $9 \cdot 999$ | 10 | 98 |
| 99 | 14.268 | 143 | 12.494 | $12 \frac{2}{2}$ | II 'IO9 | 11 | $9 \cdot 999$ | 10 | 99 |
| 100 | 14.269 | $14 \frac{1}{4}$ | 12.494 | 12 $\frac{1}{2}$ | II•109 | 11 | 9.999 | 10 | 100 |

For Explanations and Examples see pp. xviii., xix. Tables continued on pp. xx. to xxix.

INTEREST TABLES

| $\begin{aligned} & \text { After } \\ & \text { Years } \end{aligned}$ | $\underset{\text { Purchase }}{Y_{\text {sars' }}^{\prime}} \mathbf{1} \frac{1}{2} \%$ |  | $\left\lvert\, \begin{gathered} \text { Years' } \\ \text { Purchase } \end{gathered}\right.$ | $1 \frac{3}{4} \%$ | $\begin{aligned} & \text { Ysars' } \\ & \text { Purchass } \end{aligned}$ | 2\％ | Yearg＇ Purchass | \％ | $\left\lvert\, \begin{aligned} & \text { After } \\ & \text { Years } \end{aligned}\right.$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $65 \cdot 681$ | 654 | 56．160 | 56눈 | 49．020 | 49 | 43.466 | $43^{\frac{1}{2}}$ | 1 |
| 2 | $64 \cdot 711$ | $64 \frac{3}{}$ | $55 \cdot 194$ | 554 | 48.058 | 48 | 42.510 | 42 2 | 2 |
| 3 | 63.754 | $63 \frac{3}{6}$ | 54.245 | $54 \frac{1}{4}$ | $47 \cdot 116$ | 47 | $41 \cdot 575$ | $41 \frac{1}{2}$ | 3 |
| 4 | 62.812 | $62 \frac{8}{4}$ | 53.312 | 53 ${ }^{\frac{2}{4}}$ | $46 \cdot 192$ | $46 \frac{1}{4}$ | $40 \cdot 660$ | $40 \frac{3}{4}$ | 4 |
| 5 | 6I．884 | 62 | 52.395 | $52 \frac{1}{2}$ | $45 \cdot 287$ | $45 \frac{1}{4}$ | $39 \cdot 765$ | $39 \frac{3}{4}$ | 5 |
| 6 | 60.969 | 61 | 51.494 | $51 \frac{1}{2}$ | 44.399 | $44 \frac{1}{2}$ | 38.890 | 39 | 6 |
| 7 | 60.068 | 60 | $50 \cdot 608$ | $50 \frac{1}{2}$ | 43.528 | $43 \frac{1}{2}$ | $38 \cdot 034$ | 38 | 7 |
| 8 | 59．181 | 59준 | 49.738 | $49 \frac{3}{4}$ | $42 \cdot 675$ | $42 \frac{3}{4}$ | $37 \cdot 197$ 36.379 | 37 | 8 |
| 9 | $58 \cdot 306$ | $58 \frac{1}{4}$ | $48 \cdot 882$ | 49 | $41 \cdot 838$ | 415 | $36 \cdot 379$ | $36 \frac{1}{2}$ | 9 |
| 10 | $57 \cdot 444$ | $57 \frac{1}{2}$ | $48 \cdot 042$ | 48 | 41.017 | 41 | 35．578 | $35 \frac{1}{2}$ | 10 |
| 11 | 56．596 | $56 \frac{1}{2}$ | 47.215 | 47震 | $40 \cdot 213$ | $40 \frac{1}{4}$ | $34 \times 795$ | $34 \frac{3}{4}$ | II |
| 12 | $55 \cdot 759$ | 55 | $46 \cdot 403$ | $46 \frac{1}{2}$ | 39.425 | $39 \frac{1}{2}$ | $34^{\circ} \mathrm{O} 3 \mathrm{O}$ | 34 | 12 |
| 13 | 54.935 | 55 | $45 \cdot 605$ | $45 \frac{1}{2}$ | 38.652 | $38 \frac{3}{4}$ | $33 \cdot 281$ | $33 \frac{1}{4}$ | 13 |
| 14 | $54 \cdot 123$ | 54 | $44 \cdot 821$ | 443 ${ }^{\frac{3}{4}}$ | $37 \cdot 894$ | 38 | $32 \cdot 549$ | $332 \frac{1}{2}$ | 14 |
| 15 | 53.323 | 531 | 44.050 | 44 | 37.151 | $37 \frac{1}{4}$ | $3 \mathrm{I} \cdot 832$ | 31年 | 15 |
| 16 | $52 \cdot 535$ | 52 $\frac{1}{2}$ | $43 \cdot 292$ | $43 \frac{1}{4}$ | $36 \cdot 422$ | $36 \frac{1}{2}$ | $3 \mathrm{I} \cdot 132$ | $31 \frac{1}{4}$ | 16 |
| 17 | 51＇759 | 51 | $42 \cdot 548$ | $42 \frac{1}{2}$ | $35 \cdot 708$ | $35 \frac{3}{4}$ | $30 \cdot 447$ | $30 \frac{1}{2}$ | 17 |
| 18 | 50.994 | 51 | 41.816 | $41 \frac{3}{4}$ | $35 \cdot 008$ | 35 | 29.777 | $29 \frac{9}{4}$ | 18 |
| 19 | 50.241 | $50 \frac{1}{4}$ | 41＇097 | 41 | 34．322 | $34 \frac{1}{4}$ | $29 \cdot 122$ | 29 | 19 |
| 20 | $49 \cdot 498$ | $49 \frac{1}{3}$ | 40＇390 | 4012 | $33 \cdot 649$ | $33 \frac{3}{4}$ | 28.48 I | 281 $\frac{1}{2}$ | 20 |
| 21 | $48 \cdot 767$ | $48 \frac{8}{4}$ | 39.695 | $39^{\frac{3}{4}}$ | 32.989 | 33 | 27.854 | $27{ }^{2} \frac{3}{4}$ | 21 |
| 22 | $48 \cdot 046$ | 48 | 39.013 | 39 | $32 \cdot 342$ | $32{ }^{\frac{1}{4}}$ | 27.241 | $27 \frac{1}{4}$ | 22 |
| 23 | 47.336 | $47 \frac{1}{4}$ | $38 \cdot 342$ | $38 \frac{1}{4}$ | $3 \mathrm{I} \cdot 708$ | $31 . \frac{3}{4}$ | $26 \cdot 642$ | $26 \frac{1}{4}$ | 23 |
| 24 | 46.636 | $46 \frac{1}{2}$ | $37 \cdot 682$ | $37 \frac{3}{4}$ | $3 \mathrm{I} \cdot 086$ | 31 | $26 \cdot 055$ | 26 | 24 |
| 25 | 45.947 | $46^{2}$ | $37 \cdot 034$ | 37 | 30.477 | $30 \frac{1}{2}$ | 25.482 | 2512 | 25 |
| 26 | $45 \cdot 268$ | $45 \frac{1}{4}$ | $36 \cdot 397$ | $36 \frac{1}{2}$ | 29.879 | 30 | 24.921 | 25 | 26 |
| 27 | 44.599 | 44 ${ }^{\frac{1}{2}}$ | $35 \cdot 771$ | $35 \frac{3}{4}$ | 29.293 | $29 \frac{1}{4}$ | 24.373 | $24^{\frac{1}{3}}$ | 27 |
| 28 | 43.940 | 44 | $35 \cdot 156$ | 35， | 28.719 | $28 \frac{3}{4}$ | 23.837 | $23 \frac{3}{4}$ | 28 |
| 29 | 43.291 | 43年 | 34.551 | 34 ${ }^{\frac{1}{2}}$ | $28 \cdot 156$ | 28 | 23.312 | 23 ${ }^{\frac{1}{4}}$ | 29 |
| 30 | $42 \cdot 651$ | $42{ }^{\frac{8}{4}}$ | 33.957 | 34 | $27 \cdot 604$ | $27 \frac{1}{2}$ | 22.799 | 22 2 ${ }^{2}$ | 30 |
| 31 | 42.021 | 42 | 33.373 | 33 $\frac{1}{4}$ | 27.062 | 27 | 22.297 | $22{ }^{2}$ | 31 |
| 32 | $4 \mathrm{I} \cdot 400$ | $4{ }^{1 \frac{1}{2}}$ | 32＇799 | $32 \frac{3}{4}$ | $26 \cdot 532$ | $26 \frac{1}{2}$ | 21．807 | $21 \frac{3}{4}$ | 32 |
| 33 | $40 \cdot 788$ | $40 \frac{3}{3}$ | 32．235 | $32 \frac{1}{4}$ | 26.011 | 26 | 21.327 | $21 . \frac{1}{4}$ | 33 |
| 34 | $40 \cdot 185$ | $40 \frac{1}{1}$ | 31．680 | $31 \frac{3}{4}$ | $25 \cdot 501$ | $25 \frac{1}{2}$ | $20 \cdot 858$ | $20{ }^{\frac{9}{4}}$ | 34 |
| 35 | 39＊591 | $39 \frac{1}{2}$ | $31 \cdot 136$ | $31 \frac{1}{4}$ | $25^{\circ} \mathrm{OO} 1$ | 25 | 20.399 | $20 \frac{1}{2}$ | 35 |
| 36 | $39^{\circ} 006$ | 39 | $30 \cdot 600$ | $30^{\frac{1}{2}}$ | 24.511 | $24 \frac{1}{3}$ | 19.950 | 20 | 36 |
| 37 | 38.430 | $38 \frac{1}{2}$ | 30.074 | 30 | 24.031 | 24 | 19.511 | 1912 | 37 |
| 38 | 37－862 | $37 \frac{3}{4}$ | 29.557 | 2912 | 23.559 | $23{ }^{\frac{1}{2}}$ | 19.081 | 19 | 38 |
| 39 | 37.302 36.751 | $37 \frac{1}{4}$ | 29.048 | 29 | 23.097 | 23 | 18.662 | $18 \frac{3}{4}$ | 39 |
| 40 | $36 \cdot 751$ | $36 \frac{4}{4}$ | 28.549 | $28 \frac{1}{2}$ | 22.645 | $22 \frac{3}{4}$ | 18.251 | $18 \frac{1}{4}$ | 40 |
| 41 | $36 \cdot 208$ | $36 \frac{1}{4}$ | 28.058 | 28 | $22 \cdot 201$ | $22 \frac{1}{4}$ | 17.849 | $17 \frac{3}{4}$ | 41 |
| 42 | 35.673 | $35 \frac{3}{4}$ | 27.575 | $27 \frac{1}{2}$ | $21 \cdot 765$ | 21 $\frac{3}{4}$ | 17.457 | $17 \frac{1}{2}$ | 42 |
| 43 | 35＇145 | 354 | $27 \cdot 101$ | 27 | 21.338 | $21 \frac{1}{4}$ | 17.072 | 17 | 43 |
| 44 | 34．626 | $34 \frac{1}{2}$ | 26.635 | $26 \frac{3}{1}$ | 20.920 | 21 | 16.697 | $16 \frac{3}{4}$ | 44 |
| 45 | $34 \cdot 114$ | 34 | 26．177 | $26 \frac{1}{4}$ | 20.510 | $20 \frac{1}{2}$ | 16.329 | $16 \frac{1}{4}$ | 45 |
| 46 | 33.610 | $33 \frac{1}{2}$ | $25 \cdot 726$ | $25 \frac{3}{4}$ | $20 \cdot 108$ | 20 | 15.970 | 16 | 46 |
| 47 | $33 \cdot 113$ | 33 | 25.284 | 25군 | 19.713 | $19 \frac{3}{4}$ | 15.619 | $15 \frac{1}{2}$ | 47 |
| 48 | 32．624 | $32 \frac{1}{2}$ | 24.849 | $24 \frac{8}{4}$ | 19.327 | $19 \frac{1}{4}$ | 15.275 | 15 | 48 |
| 49 | $\begin{array}{r}32 \cdot 142 \\ \hline\end{array}$ | $32 \frac{1}{4}$ | 24.422 | $24 \frac{1}{2}$ | 18．948 | 19 | 14.939 | 15 | 49 |
| 50 | $31 \cdot 667$ | 31 $\frac{3}{4}$ | $24^{\circ} 002$ | 24 | 18.576 | 181 | 14.610 | $14 \frac{1}{2}$ | 50 |

Examples．－The perpetuity of an annuity of £1 per annum after 14 years is worth in present money：At $1 \frac{1}{2}$ per cent．， $\mathbf{t}^{\mathbf{E} 54} \cdot \mathbf{1 2 3}$ or 54 years＇purchase； at 2 per cent．，$x^{5} 37 \cdot 894$ or 38 years＇purchase．
（xxxii）

| The Present Value of the REVERSION OF A PERPETUITY after any given Term not exceeding 100 Years |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { After } \\ & \text { Years } \end{aligned}$ | Years' Purchase | \% | $\begin{aligned} & \text { Years' } \\ & \text { Purchase } \end{aligned}$ | $3 \frac{3}{4} \%$ | $\begin{aligned} & \text { Years' } \\ & \text { Purchass } \end{aligned}$ | $3 \%$ | $\begin{aligned} & \text { Yesrs' } \\ & \text { Purcha3 } \end{aligned}$ | \% | $\begin{array}{\|l\|} \text { Aftel } \\ \text { Years } \end{array}$ |
| I | 39.024 | 39 | 35.390 | 352 | 32.362 | $32 \frac{1}{4}$ | $27 \cdot 605$ | 272 |  |
| 2 | 38.073 | 38 | 34.443 | $34 \frac{1}{2}$ | 31.420 | 312 | 26.672 | $26 \frac{3}{3}$ | 2 |
| 3 | $37 \cdot 144$ | $37 \frac{1}{4}$ | 33.521 | $33 \frac{1}{2}$ | $30 \cdot 505$ | 30 | 25.770 | 259 | 3 |
| 4 | 36.238 | 36 | $32 \cdot 624$ | $32 \frac{1}{2}$ | 29.616 | $29 \frac{1}{2}$ | 24.898 | 25 | 4 |
| 5 | 35.354 | 354 | 31.751 | 31 年 | 28.754 | $28 \frac{3}{4}$ | $24 \cdot 056$ | 24 | 5 |
| 6 | 34.492 | $34 \frac{1}{2}$ | 30.901 | 31 | 27.916 | 28 | 23.243 | $23{ }^{\frac{1}{4}}$ | 6 |
| 7 | 33.651 | 33 $\frac{3}{4}$ | $30 \cdot 074$ | 30 | $27 \cdot 103$ | 27 | 22.457 | $22 \frac{1}{2}$ | 7 |
| 8 | 32.830 | $32 \frac{3}{4}$ | 29.269 | $29 \frac{1}{4}$ | 26.314 | $26 \frac{1}{4}$ | $2 \mathrm{~L} \cdot 697$ | $2 \mathrm{I} \frac{3}{4}$ | 8 |
| 9 | $32 \cdot 029$ | 32 | 28.486 | 281 | 25.547 | 251 | 20.964 | 21 | 9 |
| Io | 31.248 | $31 \frac{1}{4}$ | 27.724 | $27 \frac{3}{4}$ | 24.803 | $24 \frac{3}{4}$ | 20.255 | $20 \frac{1}{4}$ | Io |
| 11 | 30.486 | 3012 | 26.982 | 27 | 24.08 I | 24 | 19.570 | $19 \frac{1}{2}$ | II |
| 12 | 29.742 | $29 \frac{3}{4}$ | $26 \cdot 259$ | $26 \frac{1}{4}$ | 23.379 | 23 ${ }^{\frac{1}{2}}$ | 18.908 | 19 | 12 |
| 13 | 29.017 | 29 | 25.557 | $25 \frac{1}{2}$ | 22.697 | 223 | $18 \cdot 269$ | $18{ }^{\frac{1}{4}}$ | 13 |
| 14 | $28 \cdot 309$ | 28, ${ }^{\frac{1}{4}}$ | 24.873 | $24 \frac{3}{4}$ | 22.037 | 22 | 17.651 | $17 \frac{3}{4}$ | 14 |
| I5 | 27.619 | $27 \frac{1}{2}$ | 24.207 | $24 \frac{1}{4}$ | 21.395 | $21 . \frac{1}{2}$ | 17.054 | 17 | 15 |
| 16 | 26.945 | 27 | 23.559 | 23 $\frac{1}{3}$ | 20.772 | $20 \frac{3}{4}$ | 16.477 | $16 \frac{1}{2}$ | 16 |
| 17 | 26.288 | $26 \frac{1}{4}$ | 22.929 | 23 | $20 \cdot 167$ | $20{ }^{\frac{1}{4}}$ | 15.920 | 16 | 17 |
| 18 | 25.647 | $25 \frac{3}{4}$ | 22.315 | $22^{\frac{1}{4}}$ | 19.580 | $19{ }^{1} \frac{1}{2}$ | 15.382 | $15 \frac{1}{2}$ | 18 |
| 19 | 25.021 | 25 | 2 I 718 | $2{ }^{1} \frac{3}{4}$ | 19.010 | 19 | 14.862 | 144 | 19 |
| 20 | 24.411 | $24 \frac{1}{2}$ | 2I•136 | 21.1 | 18.456 | 181 | 14.359 | $14 \frac{1}{4}$ | 20 |
| 21 | 23.815 | $23 \frac{3}{4}$ | 20.57 I | $20 \frac{1}{2}$ | 17.918 | 18 | 13.873 | $13{ }^{\frac{3}{4}}$ | 21 |
| 22 | 23.235 | 23 表 | 20.020 | 20 | 17.396 | $17 \frac{1}{2}$ | 13.404 | $13 \frac{1}{2}$ | 22 |
| 23 | 22.668 | 22931 | 19.484 | $19 \frac{1}{2}$ | 16.890 | 17 | $12 \cdot 951$ | 13 | 23 |
| 24 | $22 \cdot 115$ | 22 | $18 \cdot 963$ | 19 | 16.398 | $16 \frac{1}{2}$ | 12.513 | $12{ }^{\frac{1}{2}}$ | 24 |
| 25 | 21.576 | $21 \frac{1}{2}$ | 18.455 | 181 ${ }^{1}$ | 15.920 | 16 | 12.090 | 12 | 25 |
| 26 | 21.049 | 21 | 17.961 | 18 | 15.456 | $15 \frac{1}{2}$ | 11.681 |  | 26 |
| 27 | $20 \cdot 536$ | $20 \frac{1}{2}$ | 17.481 | 172 | 15.006 | 15 | II 1286 | $11{ }^{\frac{1}{4}}$ | 27 |
| 28 | 20.035 | 20 | 17.013 | 17 | 14.569 | $14 \frac{1}{2}$ | 10.904 | $\mathrm{II}^{4}$ | 28 |
| 29 | 19.546 | $19 \frac{1}{2}$ | 16.557 | 1661 | 14.145 | $14 \frac{1}{4}$ | 10.536 | $10 \frac{1}{2}$ | 29 |
| 30 | 19.070 | 19 | 16.114 | 16 | 13.733 | $13 \frac{3}{4}$ | 10.179 | IO ${ }_{4}^{1}$ | 30 |
| 3 I | $18 \cdot 605$ | $18 \frac{1}{2}$ | 15.683 | 154 | 13.333 | $13{ }^{\frac{1}{4}}$ | $9 \cdot 835$ | $9 \frac{3}{4}$ | 31 |
| 32 | 18.151 | $18 \frac{1}{4}$ | 15.263 | $15 \frac{1}{4}$ | 12.945 | 13 | 9.503 | $9{ }^{\frac{1}{2}}$ | 32 |
| 33 | 17.708 | ${ }^{1} 7 \frac{3}{4}$ | 14.855 | 144 ${ }^{\frac{3}{4}}$ | $12 \cdot 568$ | $12{ }^{\frac{1}{2}}$ | $9 \cdot 181$ | 9 | 33 |
| 34 | 17.276 | ${ }^{174}$ | 14.457 | $14 \frac{1}{2}$ | 12.201 | 121 $\frac{1}{4}$ | 8.871 | $8 \frac{3}{4}$ | 34 |
| 35 | 16.855 | $16 \frac{3}{4}$ | 14.070 | 14 | II 846 | 115 | $8 \cdot 571$ | $8 \frac{1}{2}$ | 35 |
| 36 | 16.444 | 161 | 13.694 | 13 ${ }^{\frac{3}{4}}$ | 11.501 | 11 ${ }_{2}^{1}$ | $8 \cdot 281$ | $8 \frac{1}{4}$ | 36 |
| 37 | 16.043 | 16 | 13.327 | $13{ }^{\frac{1}{4}}$ | II•166 | $1{ }^{1} \frac{1}{4}$ | 8.001 | 8 | 37 |
| 38 | 15.65 I | $15 \frac{3}{4}$ | 12.97 I | 13 | 10.841 | 103 | 7.730 | $7 \frac{8}{4}$ | 38 |
| 39 | 15.270 | $15 \frac{1}{4}$ | 12.623 | $12 \frac{1}{2}$ | $10 \cdot 525$ | $\mathrm{ro}^{\frac{1}{2}}$ | $7 \cdot 469$ | $7 \frac{1}{2}$ | 39 |
| 40 | 14.897 | 15 | 12.286 | $12 \frac{1}{4}$ | 10.219 | 10 ${ }^{1}$ | $7 \cdot 216$ | $7{ }^{\frac{1}{4}}$ | 40 |
| 41 | 14.534 | 142 $\frac{1}{2}$ | II.957 | 12 |  | 10 | 6.972 |  | 41 |
| 42 | 14.179 | $14^{\frac{2}{4}}$ | 11.637 | $11 \frac{3}{4}$ | 9.632 | $9{ }^{\frac{3}{4}}$ | $6 \cdot 737$ | $6 \frac{3}{4}$ | 42 |
| 43 | 13.834 | I3 $3 \frac{3}{4}$ | II 325 | 115 | 9.35 I | $9{ }^{\frac{1}{4}}$ | 6.509 | $6 \frac{1}{2}$ | 43 |
| 44 | 13.496 | $13 \frac{1}{2}$ | 11.022 | 11 | $9 \cdot 079$ | 9 | $6 \cdot 289$ | $6 \frac{1}{4}$ | 44 |
| 45 | 13.167 | I $3 \frac{1}{4}$ | 10.727 | 108 ${ }^{\frac{8}{4}}$ | 8.815 | $8 \frac{3}{4}$ | $6 \cdot 076$ | 6 | 45 |
| 46 | 12.846 | $12 \frac{8}{4}$ | 10.440 | $10 \frac{1}{2}$ | $8 \cdot 558$ | $8 \frac{1}{2}$ | $5 \cdot 871$ | $5 \frac{3}{4}$ | 46 |
| 47 | 12.533 | I2 2 | 10•161 | $10 \frac{1}{4}$ | $8 \cdot 309$ | $8 \frac{1}{4}$ | $5 \cdot 672$ | $5 \frac{3}{4}$ | 47 |
| 48 | 12.227 | $12 \frac{1}{4}$ | 9.889 | 10 | $8 \cdot 067$ | 8 | $5 \cdot 480$ | $5 \frac{1}{2}$ | 48 |
| 49 | 11.929 | 12 | 9.624 | 9 $\frac{1}{2}$ | $7 \cdot 832$ | $7 \frac{3}{4}$ | $5 \cdot 295$ | $5 \frac{1}{4}$ | 49 |
| 50 | 11.638 | 11 $\frac{8}{4}$ | 9.366 | $9{ }^{\frac{1}{4}}$ | $7 \cdot 604$ | $7 \frac{1}{2}$ | 5•116 | 5 | 50 |

For Explanations and Examples, see pp. xviii. and xix. Tables continued on pp. xxxiv.-xxxix.

## The Present Value of the REVERSION OF A PERPETUITY after any given Term not exceeding 100 Years

| ${ }_{\text {Years }}^{\text {After }}$ | $\begin{aligned} & \text { Purchase } \\ & \text { Purars } \end{aligned} \frac{1}{2} \%$ |  | $\left\lvert\, \begin{aligned} & \text { Years' } \\ & \text { Purchase } \end{aligned} 1 \frac{3}{4} \%\right.$ |  | $\underset{\text { Purchass }}{\text { Years' }} \mathbf{2} \%$ |  | $\begin{gathered} \text { Yearg' }^{\text {Purchsee }} 2 \frac{1}{4} \% \end{gathered}$ |  | $\left\lvert\, \begin{aligned} & \text { After } \\ & \text { Years } \end{aligned}\right.$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | 31－199 | $31 \frac{1}{4}$ | 23.589 | $23 \frac{1}{2}$ | 18.212 | 181 $\frac{1}{4}$ | 14.289 | $14 \frac{1}{4}$ | 51 |
| 52 | $30 \cdot 738$ | $30 \frac{3}{4}$ | 23．183 | $23 \frac{1}{4}$ | 17.855 | $17 \frac{3}{4}$ | 13.974 | 14 | 52 |
| 53 | $30 \cdot 284$ | $30 \frac{1}{4}$ | $22 \cdot 784$ | 22 年 | 17.505 | $17 \frac{1}{2}$ | 13.667 | $13{ }^{\frac{3}{7}}$ | 53 |
| 54 | 29.836 | 29.3 | 22．393 | 22 $\frac{1}{2}$ | $17 \cdot 162$ | $17 \frac{1}{4}$ | ${ }^{1} 3 \cdot 366$ | ${ }^{1} 3^{\frac{1}{4}}$ | 54 |
| 55 | 29.395 | 29를 | 22.007 | 22 | 16.825 | $16 \frac{1}{4}$ | 13.072 | 13 | 55 |
| 56 | 28.961 | 29 | $21 \cdot 629$ | $21^{\frac{3}{4}}$ | 16.495 | 161 ${ }^{1}$ | $12 \cdot 784$ | $12 \frac{3}{4}$ | 56 |
| 57 | $28 \cdot 533$ | $28 \frac{1}{2}$ | 21.257 | $21{ }^{\frac{1}{4}}$ | $16 \cdot 172$ | $16 \frac{1}{1}$ | 12.503 | I2 $2 \frac{1}{2}$ | 57 |
| 58 | 28.111 | 28 | 20.891 | 2 I | 15.855 | $15{ }^{\frac{3}{4}}$ | 12.228 | 12 21 | 58 |
| 59 | 27.696 | $27 \frac{3}{4}$ | 20.532 | $20 \frac{1}{2}$ | 15.544 | $15 \frac{1}{2}$ | 11．959 | 12 | 59 |
| 60 | 27.286 | 27i | 20．179 | $20 \frac{1}{4}$ | 15.239 | $15 \frac{1}{4}$ | 11．695 | $11 \frac{8}{4}$ | 60 |
| 61 | 26.883 | 27 | 19.832 | $19 \frac{3}{4}$ | 14.940 | 15 | 11.438 | $11 \frac{1}{2}$ | 61 |
| 62 | 26.486 | $26 \frac{1}{2}$ | 19.491 | $19 \frac{1}{2}$ | 14.647 | $14 \frac{3}{4}$ | 11．186 | $11 \frac{1}{4}$ | 62 |
| 63 | 26.094 | 26 | 19.156 | 19 | 14.360 | $14 \frac{1}{4}$ | 10.940 | 11 | 63 |
| 64 | 25.709 | 25 ${ }^{\frac{3}{7}}$ | 18.826 | $18 \frac{3}{4}$ | 14.079 | 14 | $10 \% 00$ | 103 | 64 |
| 65 | 25.329 | $25 \frac{1}{4}$ | 18.502 | $18 \frac{1}{2}$ | 13.803 | $13 \frac{3}{4}$ | 10．464 | 10，${ }^{\frac{1}{2}}$ | 65 |
| 66 | 24.955 | 25 | 18.184 | 181 | 13.532 | $13 \frac{1}{2}$ | 10．234 | $10 \frac{1}{4}$ | 66 |
| 67 | 24.586 | $24^{\frac{1}{2}}$ | 17.871 | $17 \frac{3}{4}$ | 13.267 | $13 \frac{1}{4}$ | 10.009 | 10 | 67 |
| 68 | 24.222 | 24 ${ }^{\frac{1}{8}}$ | 17.564 | $17 \frac{1}{2}$ | 13.006 | 13 | $9 \cdot 788$ | $9 \frac{8}{4}$ | 68 |
| 69 | 23.864 | $23 \frac{3}{4}$ | 17.262 | $17 \frac{1}{4}$ | 12.751 | 12 $\frac{8}{4}$ | 9.573 | $9{ }^{\frac{1}{2}}$ | 69 |
| 70 | 23.512 | ．232 | 16.965 | 17 | 12.501 | 122 ${ }^{2}$ | $9 \cdot 362$ | $9 \frac{1}{4}$ | 70 |
| 7 I | $23 \cdot 164$ | 23 $\frac{1}{4}$ | $16 \cdot 673$ | 1638 | $12 \cdot 256$ | 122 ${ }^{\frac{2}{4}}$ | 9．156 | $9 \frac{1}{4}$ | 71 |
| 72 | 22.822 | 22 $\frac{3}{4}$ | $16 \cdot 386$ | 16⿳亠丷厂犬 | 12.016 | 12 | 8.955 | 9 | 72 |
| 73 | 22.485 | $22 \frac{1}{2}$ | $16 \cdot 105$ | 16 | 11.780 | $1{ }^{1} \frac{3}{4}$ | $8 \cdot 758$ | $8 \frac{3}{4}$ | 73 |
| 74 | 22.152 | $22 \frac{1}{4}$ | 15.828 | $15 \frac{3}{4}$ | 11．549 | I 112 | $8 \cdot 565$ | $8 \frac{1}{2}$ | 74 |
| 75 | 21.825 | $21 \frac{3}{4}$ | 15.555 | $15 \frac{1}{2}$ | 11.323 | $11 \frac{1}{4}$ | 9．377 | $8 \frac{1}{2}$ | 75 |
| 76 | 21.503 | $21 \frac{1}{2}$ | 15.288 | $15 \frac{1}{4}$ | 11．101 | 11 | $8 \cdot 192$ | $8 \frac{1}{4}$ | 76 |
| 77 | 21.185 | $21 \frac{1}{4}$ | 15.025 | 15 | 10.883 | 11 | $8 \cdot 012$ | 8 | 77 |
| 78 | 20.872 | $20 \frac{1}{1}$ | 14.766 | $14 \frac{3}{4}$ | 10.670 | $10 \frac{3}{4}$ | 7.836 | $7{ }^{\frac{8}{2}}$ | 78 |
| 79 | $20 \cdot 563$ | $20 \frac{1}{2}$ | 14.513 | $14 \frac{1}{2}$ | 10．461 | 102 | $7 \cdot 663$ | $7 \frac{3}{4}$ | 79 |
| 80 | 20．259 | $20 \frac{1}{4}$ | 14.263 | $14 \frac{1}{4}$ | $10 \cdot 255$ | $10 \frac{1}{4}$ | 7.495 | $7 \frac{1}{2}$ | 80 |
| 85 | 18.806 | 183 ${ }^{\frac{3}{4}}$ | 13.078 | 13 | 9•289 | $9 \frac{1}{4}$ | $6 \cdot 706$ | $6 \frac{3}{4}$ | 85 |
| 90 | 17.457 | 173 ${ }^{\frac{1}{2}}$ | 11.991 | 12 | 8.413 | $8 \frac{1}{2}$ | 6.000 | 6 | 90 |
| 95 | $16 \cdot 204$ | $16 \frac{1}{4}$ | 10．995 | 11 | 7.620 | $7{ }^{\frac{3}{4}}$ | $5 \cdot 368$ | $5 \frac{1}{4}$ | 95 |
| 100 | $15 \cdot 042$ | 15 | 10.081 | 10 | 6.902 | 7 | $4 \cdot 803$ | $4{ }^{\frac{3}{4}}$ | 100 |

Examples．－－The perpetuity of an annuity of $£ 1$ per annum after 65 years is worth in present money：at $1 \frac{3}{4}$ per cent．$£ 18.502$ ，or $18 \frac{1}{2}$ years＇purchase； at $2 \frac{1}{4}$ per cent．$£ 10 \cdot 464$ ，or $10 \frac{1}{2}$ years＇purcliase．

The Present Value of the REVERSION OF A PERPETUITY after any given Term not exceeding 100 Years

| After Years | $\begin{array}{\|l\|} \text { Purchass } \end{array} \mathbf{Z} \frac{1}{2} \%$ |  | $\left\lvert\, \begin{array}{\|l\|l} \text { Pureara' }^{\prime} \\ 2 \frac{3}{4} & \% \end{array}\right.$ |  | $\underset{\text { Purohass }}{\text { Years' }}$ |  | Years' <br> Purchase | \% | $\begin{array}{\|l\|l\|} \text { After } \\ \text { Years } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | 1 1.354 | $11 \frac{1}{4}$ | 9.116 | 9 | $7 \cdot 382$ | $7{ }^{1}$ | 4.943 | 5 | 5 I |
| 52 | 11.077 | 11 | 8.872 | $8 \frac{3}{4}$ | $7 \cdot 167$ | 719 | 4.776 | $4 \frac{3}{4}$ | 52 |
| 53 | 10.807 | $\mathrm{IO}_{\frac{3}{4}}$ | 8.634 | 8年 | 6.958 | 7 | $4 \cdot 614$ | $4 \frac{1}{2}$ | 53 |
| 54 | 10.543 | 103 | $8 \cdot 403$ | $8 \frac{1}{2}$ | 6.756 | $6 \frac{8}{4}$ | 4.458 | $4 \frac{1}{2}$ | 54 |
| 55 | 10.286 | 10를 | 8-178 | $8 \frac{1}{4}$ | $6 \cdot 559$ | $6 \frac{1}{2}$ | $4 \cdot 307$ | $4{ }^{\frac{1}{4}}$ | 55 |
| 56 | 10.035 | 10 | 7.959 | 8 | $6 \cdot 368$ | 61 | $4 \cdot 162$ | 4 ${ }^{\frac{1}{4}}$ | 56 |
| 57 | 9.790 | $9{ }^{\frac{3}{4}}$ | 7.746 | $7{ }^{\frac{3}{4}}$ | $6 \cdot 182$ | $6 \frac{1}{4}$ | 4.021 | 4 | 57 |
| 58 | 9.552 | $9 \frac{2}{2}$ | 7.539 | $7 \frac{1}{1}$ | $6 \cdot 002$ | 6 | 3.885 | 4 | 58 |
| 59 | 9.319 | $9{ }^{9}$ | 7.337 | $7{ }^{\frac{1}{4}}$ | $5 \cdot 828$ | $5 \frac{3}{4}$ | $3 \cdot 754$ | 3 ${ }^{\frac{3}{4}}$ | 59 |
| 60 | 9.09 I | 9 | $7 \cdot 141$ | $7{ }^{\frac{1}{4}}$ | $5 \cdot 658$ | $5{ }^{\frac{3}{4}}$ | $3 \cdot 627$ | $3{ }^{\frac{8}{4}}$ | 60 |
| 61 | $8 \cdot 870$ | $8 \frac{3}{4}$ | 6.950 | 7 | 5.493 | $5 \frac{1}{2}$ | 3.504 | $3 \frac{1}{2}$ | 61 |
| 62 | $8 \cdot 653$ | $8 \frac{3}{4}$ | $6 \cdot 764$ | $6 \frac{3}{4}$ | 5.333 | $5{ }^{\frac{1}{4}}$ | $3 \cdot 386$ | $3{ }^{\frac{1}{2}}$ | 62 |
| 63 | 8.442 | $8 \frac{1}{2}$ | $6 \cdot 583$ | $6 \frac{1}{2}$ | $5 \cdot 178$ | 5 | 3.271 | $3{ }^{\frac{1}{2}}$ | 63 |
| 64 | $8 \cdot 236$ | $8 \frac{1}{4}$ | $6 \cdot 407$ | $6 \frac{1}{2}$ | 5.027 | 5 | $3 \cdot 160$ | $3{ }^{\frac{1}{4}}$ | 64 |
| 65 | 8.035 | 8 | $6 \cdot 235$ | $6 \frac{1}{4}$ | $4 \cdot 880$ | 5 | $3 \cdot 054$ | 3 | 65 |
| 66 | 7.839 | $7 \frac{3}{4}$ | 6.068 | 6 | 4.738 | $4 \frac{3}{4}$ | 2.950 | 3 | 66 |
| 67 | 7.648 | $7{ }^{\frac{3}{4}}$ | $5 \cdot 906$ | 6 | $4 \cdot 600$ | $4 \frac{1}{2}$ | $2 \cdot 851$ | $2{ }^{\frac{3}{4}}$ | 67 |
| 68 | $7 \cdot 462$ | $7{ }^{\frac{1}{2}}$ | $5 \cdot 748$ | $5{ }^{\frac{3}{4}}$ | $4 \cdot 466$ | $4 \frac{1}{2}$ | $2 \cdot 754$ | $2 \frac{3}{4}$ | 68 |
| 69 | $7 \cdot 280$ | 71 ${ }^{\frac{1}{4}}$ | 5.594 | $5 \frac{1}{2}$ | 4.336 | $4 \frac{1}{1}$ | $2 \cdot 661$ | $2 \frac{3}{4}$ | 69 |
| 70 | $7 \cdot 102$ | 7 | 5.444 | 52 | 4.210 | $4{ }^{\frac{1}{4}}$ | $2 \cdot 57 \mathrm{I}$ | $2 \frac{1}{2}$ | 70 |
| 71 | 6.929 | 7 | 5.299 | $5{ }^{\frac{1}{4}}$ | 4.087 | 4 | 2.484 | $2 \frac{1}{2}$ | 71 |
| 72 | $6 \cdot 760$ | $6 \frac{3}{4}$ | $5 \cdot 157$ | $5{ }^{\frac{1}{4}}$ | 3.968 | 4 | $2 \cdot 400$ | $2 \frac{2}{3}$ | 72 |
| 73 | $6 \cdot 595$ | $6 \frac{1}{2}$ | 5.019 | 5 | 3.853 | $3{ }^{\frac{8}{4}}$ | $2 \cdot 319$ | $2 \frac{1}{4}$ | 73 |
| 74 | $6 \cdot 434$ | $6 \frac{1}{2}$ | $4 \cdot 884$ | 5 | 3.740 | $3{ }^{\frac{3}{7}}$ | 2.241 | $2 \frac{1}{4}$ | 74 |
| 75 | $6 \cdot 277$ | $6 \frac{1}{4}$ | 4.754 | $4^{\frac{3}{4}}$ | 3.632 | $3{ }^{\frac{3}{4}}$ | 2.165 | $2{ }_{\text {d }}^{\text {d }}$ | 75 |
| 76 | $6 \cdot 124$ | 6 | 4.626 | $4{ }^{\frac{3}{4}}$ | $3 \cdot 526$ | $3{ }^{\frac{1}{2}}$ | 2.092 | 2 | 76 |
| 77 | 5.975 | 6 | $4 \cdot 503$ | $4 \frac{1}{3}$ | 3.423 | $3{ }^{\frac{1}{2}}$ | 2.021 | 2 | 77 |
| 78 | 5.829 | $5{ }^{\frac{3}{4}}$ | 4.382 | $4 \frac{1}{2}$ | $3 \cdot 233$ | 31 | I.952 | 2 | 78 |
| 79 | 5.687 | 53 | 4.265 | $4 \frac{1}{4}$ | $3 \cdot 227$ | $3{ }^{31}$ | 1.886 | 2 | 79 |
| 80 | $5 \cdot 548$ | $5{ }^{\frac{1}{2}}$ | $4 \cdot 151$ | $4{ }^{\frac{1}{4}}$ | 3•133 | $3{ }^{\frac{1}{4}}$ | I.823 | $1{ }^{\frac{3}{4}}$ | 80 |
| 85 | 4.904 | 5 | 3.624 | $3 \frac{1}{2}$ | $2 \cdot 702$ | $2{ }^{2} \frac{3}{1}$ | 1 5335 | $1{ }^{1}$ | 85 |
| 90 | 4.334 | $4{ }^{\frac{1}{4}}$ | $3 \cdot 164$ | 37 | $2 \cdot 331$ | $2{ }^{2}$ | 1.292 | $1{ }^{\frac{1}{4}}$ | 90 |
| 95 | 3.831 | $3{ }^{\frac{3}{4}}$ | $2 \cdot 763$ | $2 \frac{3}{4}$ | 2.011 | 2 | 1.088 | I | 95 |
| 100 | $3 \cdot 386$ | $3 \frac{1}{2}$ | 2.413 | $2 \frac{1}{2}$ | $1 \cdot 734$ | $1{ }^{\frac{3}{4}}$ | '916 | 1 | 100 |

For Explanations and Examples, see pp. xviii. and xix. Tables continued on pp. xxxii., xxxiii. and xxxvi.-xxxix.

| $\begin{aligned} & \text { After } \\ & \text { Years } \end{aligned}$ | $\underset{\text { Purchass }}{\text { Years' }} 4 \%$ |  | $\begin{array}{\|c\|} \hline \text { Years' } \\ \text { Purchass } \end{array} \mathbf{4}_{2}^{2} \%$ |  | $\begin{gathered} \text { Yeara' } \\ \text { Purchase } \end{gathered}$ | $5 \%$ | $\begin{gathered} \text { Years' } \\ \text { Purohass } \end{gathered}$ | 6\％ | ${ }_{\text {Years }}^{\text {After }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24.038 | 24 | 21－265． | $21{ }^{\frac{1}{4}}$ | 19.048 | 19 | 15.723 | $15 \frac{3}{4}$ | 1 |
| 2 | $23 \cdot 114$ | 23 | 20.350 | $20 \frac{1}{4}$ | 18．141 | $18 \frac{1}{4}$ | 14.833 | $14 \frac{3}{4}$ | 2 |
| 3 | $22 \cdot 225$ | $22 \frac{1}{4}$ | 19.473 | $19 \frac{1}{2}$ | 17.277 | $17 \frac{1}{4}$ | 13.994 | 14 | 3 |
| 4 | 21.370 | $2{ }^{2} \frac{1}{4}$ | 18.635 | $18 \frac{3}{4}$ | 16.454 | $16 \frac{1}{2}$ | 13.202 | $13 \frac{1}{4}$ | 4 |
| 5 | $20 \cdot 548$ | $20 \frac{1}{2}$ | 17.832 | $17 \frac{8}{4}$ | 15.67 I | $15 \frac{8}{4}$ | 12.454 | $12 \frac{1}{2}$ | 5 |
| 6 | $19 \cdot 758$ | $19 \frac{3}{4}$ | 17.064 | 17 | 14.924 | 15 | 11．749 | $11 \frac{3}{4}$ | 6 |
| 7 | 18．998 | 19 | 16.330 | $16 \frac{1}{4}$ | 14．214 | $14 \frac{1}{4}$ | 11.084 | 11 | 7 |
| 8 | $18 \cdot 267$ | $18 \frac{1}{4}$ | $15 \cdot 626$ | $15 \frac{3}{5}$ | I3．537 | $13 \frac{1}{2}$ | 10.457 | 10 ${ }^{\frac{1}{2}}$ | 8 |
| 9 | 17.565 | $17 \frac{1}{2}$ | 14.953 | 15 | 12.892 | 13 | 9.865 | $9{ }^{\frac{8}{4}}$ | 9 |
| Io | 16.889 | 17 | 14．310 | 14 ${ }^{\frac{1}{4}}$ | 12.278 | 12 ${ }_{1}^{1}$ | $9 \cdot 307$ | $9{ }^{\frac{1}{4}}$ | 10 |
| 11 | 16.240 | 16 ${ }_{4}^{1}$ | 13.693 | $13 \frac{3}{4}$ | II． 694 | $1 \overline{10}$ | $8 \cdot 780$ | 88 | 11 |
| 12 | 15.615 | $15 \frac{1}{2}$ | 13.104 | 13 | 11－137 | II ${ }^{\frac{1}{4}}$ | $8 \cdot 283$ | $8 \frac{1}{4}$ | 12 |
| 13 | ${ }^{1} 5.014$ | ${ }_{1}^{15}$ | 12.539 | $12 \frac{1}{2}$ | 10.606 | ${ }_{10} 10$ | 7.814 | $7{ }^{\frac{3}{4}}$ | 13 |
| 14 | 14.437 | $14{ }^{\frac{1}{2}}$ | 11．999 | 12 | 10．101 | 10 | 7372 | $7{ }^{\frac{1}{4}}$ | 14 |
| 15 | 13.882 | 14 | 11.483 | $1{ }_{1}^{12}$ | $9 \cdot 620$ | 9 ${ }^{\frac{1}{2}}$ | 6.954 | 7 | 15 |
| 16 | 13．348 | $13 \frac{1}{4}$ | 10．988 | 11 | 9．162 | $9{ }^{\frac{1}{4}}$ | $6 \cdot 561$ | $6 \frac{1}{2}$ | 16 |
| 17 | I2．834 | $12 \frac{3}{4}$ | $10 \cdot 515$ | $10^{\frac{1}{2}}$ | $8 \cdot 726$ | $8{ }^{8}$ | 6．189 | $6 \frac{1}{4}$ | 17 |
| 18 | 12.341 11 | ${ }_{12} 2^{\frac{1}{4}}$ | 10.062 | 10 | $8 \cdot 310$ | $8 \frac{1}{4}$ | 5.839 | 53 ${ }^{\frac{1}{4}}$ | 18 |
| 19 | 11.866 | ${ }_{1}^{11}$ | $9 \cdot 629$ | $9 \frac{3}{4}$ | 7.915 | 8 | $5 \cdot 509$ | $5 \frac{1}{2}$ | 19 |
| 20 | 11．410 | $\mathrm{II}_{1}^{1}$ | 9.214 | $9 \frac{1}{4}$ | $7 \cdot 538$ | 7 $\frac{1}{2}$ | $5 \cdot 197$ | $5 \frac{1}{4}$ | 20 |
| 21 | 10.971 | ${ }_{\text {I }} 1$ | 8.818 | $8 \frac{3}{4}$ | 7．179 | $7 \frac{1}{4}$ | 4．903 | 5 | 21 |
| 22 | $10 \cdot 549$ | $10 \frac{1}{2}$ | $8 \cdot 438$ | $8 \frac{8}{8}$ | 6.837 | $6 \frac{3}{4}$ | $4 \cdot 625$ | $4{ }^{\frac{3}{4}}$ | 22 |
| 23 | 10．143 | 10 ${ }^{10}$ | 8.074 | 8 | $6 \cdot 51 \mathrm{I}$ | $6 \frac{1}{2}$ | 4.363 | $4{ }^{\frac{1}{4}}$ | 23 |
| 24 | 9.753 | $9{ }^{9}$ | 7.727 | $7{ }^{7}{ }^{\frac{3}{4}}$ | $6 \cdot 201$ | $6 \frac{1}{4}$ | 4.116 | 4 | 24 |
| 25 | $9 \cdot 378$ | $9 \frac{1}{2}$ | $7 \cdot 394$ | $7 \frac{1}{2}$ | 5．906 | 6 | 3.883 | $3 \frac{3}{4}$ | 25 |
| 26 | 9.017 |  | 7.076 | 7 | $5 \cdot 625$ | $5 \frac{3}{4}$ | $3 \cdot 663$ | $3{ }^{\frac{3}{4}}$ | 26 |
| 27 | 8.670 8.337 | $88 \frac{8}{4}$ | 6.771 6.479 | $6 \frac{3}{4}$ | 5.357 | $5{ }^{\frac{1}{4}}$ | 3.456 | $3 \frac{1}{2}$ | 27 |
| 28 | 8.337 8.016 | 88 | 6．479 | $6{ }_{6}^{1}$ | 5.102 4.859 | 5 | 3.261 3.076 | $3{ }^{3 \frac{1}{4}}$ | 28 |
| 29 30 | 8.016 7708 | 7 ${ }^{\frac{3}{4}}$ | 6．200 | ${ }_{6}^{6 \frac{1}{4}}$ | 4.859 4.628 | $44^{\frac{3}{3}}$ | 3.076 2.902 | 3 | 29 |
| 31 | $7 \cdot 412$ | $7 \frac{1}{2}$ | 5.678 | 53 | 4.407 | $4{ }^{4}$ | $2 \cdot 738$ | $2{ }^{\frac{3}{4}}$ | 30 31 |
| 32 | 7.126 | $7{ }^{\frac{1}{4}}$ | $5 \cdot 433$ | $55^{\frac{1}{2}}$ | 4．197 | $4 \frac{1}{4}$ | 2.583 | $2{ }_{2} \frac{1}{2}$ | 32 |
| 33 | $6 \cdot 852$ | $6 \frac{3}{4}$ | 5•199 | $5{ }^{\frac{1}{4}}$ | 3．997 | 4 | 2.436 | $2 \frac{1}{2}$ | 33 |
| 34 | $6 \cdot 589$ | $6 \frac{1}{2}$ | 4.975 | 5 | 3．807 | $3 \frac{8}{4}$ | $2 \cdot 299$ | $2 \frac{1}{4}$ | 34 |
| 35 | $6 \cdot 335$ | $6 \frac{1}{4}$ | $4 \cdot 76 \mathrm{I}$ | $4 \frac{3}{4}$ | $3 \cdot 626$ | $3 \frac{3}{4}$ | $2 \cdot 168$ | $2 \frac{2}{4}$ | 35 |
| 36 | 6.092 | 5 | $4 \cdot 556$ | $4 \frac{1}{2}$ | 3.453 | $3 \frac{1}{2}$ | 2.046 | 2 | 36 |
| 37 | $5 \cdot 857$ | $5 \frac{3}{4}$ | 4.360 | $4 \frac{1}{4}$ | 3.289 | $3{ }^{\frac{1}{4}}$ | 1.930 | 2 | 37 |
| 38 | 5.632 | ${ }^{5 \frac{3}{4}}$ | 4．172 | $4 \frac{1}{4}$ | 3.132 | $3 \frac{1}{4}$ | I－821 | $1 \frac{8}{4}$ | 38 |
| 39 | $5 \cdot 416$ | $5 \frac{1}{2}$ | 3．993 | 4 | 2.983 | 3 | 1778 | $1{ }^{1}$ | 39 |
| 40 | $5 \cdot 207$ | $5 \frac{1}{4}$ | 3．821 | $3 \frac{3}{4}$ | 2．84I | $2 \frac{3}{4}$ | 1.620 | $1 \frac{1}{2}$ | 40 |
| 4 I | $5 \cdot 007$ | 5 | $3 \cdot 656$ | $3{ }^{\frac{3}{4}}$ | $2 \cdot 706$ | $2 \frac{8}{4}$ | 1．529 | $1{ }_{1}^{1}$ | 41 |
| 42 | 4.814 | $4{ }^{\frac{3}{4}}$ | $3 \cdot 499$ | $3 \frac{1}{2}$ | $2 \cdot 577$ | $2 \frac{1}{2}$ | 1442 | $1 \frac{1}{2}$ | 42 |
| 43 | 4.629 | 4年 | 3．348 | $3 \frac{1}{4}$ | $2 \cdot 454$ | $2 \frac{2}{2}$ | I 360 | $1{ }^{1}$ | 43 |
| 44 | 4.451 | $4 \frac{1}{2}$ | 3.204 | $3 \frac{1}{4}$ | $2 \cdot 337$ | $2 \frac{2}{4}$ | 1.283 | $1{ }^{\frac{3}{4}}$ | 44 |
| 45 | 4.280 | $4 \frac{1}{4}$ | 3.066 | 3 | 2.226 | $2 \frac{1}{4}$ | 1.211 | $1 \frac{1}{4}$ | 45 |
| 46 | $4 \cdot 115$ | 4 | 2.934 | 3 | $2 \cdot 120$ | 2 | I．142 | ${ }^{1} \frac{1}{4}$ | 46 |
| 47 | 3.957 3.805 | $4{ }^{4}$ | 2.808 2.687 |  | 2.019 | 2 | $1{ }^{1} 078$ | 1 | 47 |
| 48 | 3.805 3.659 | $3{ }^{3 \frac{3}{2}}$ | 2.687 | 2 $2 \frac{3}{4}$ | 1.923 1.835 | 2 | $1 \times 17$ | 1 | 48 |
| 49 | 3.659 | 3年 | 2.571 | $2 \frac{1}{2}$ | 1.83 I | $1{ }^{\frac{3}{4}}$ | $\cdot 959$ | 1 | 49 |
| 50 | 3.518 | 3立 | 2460 | $2 \frac{1}{2}$ | 1744 | $1{ }^{\frac{3}{4}}$ | ＇905 | 1 | 50 |

Examples．－The perpetuity of an annuity of £ix per annum after 37 years is worth in present money：at 4 per cent．，$£^{2} 5 \cdot 857$ ，or $5 \frac{3}{4}$ years＇purchase； at 5 per cent．，$f^{\circ} 3^{\prime 2} 89$ ，or 34 years＇purchase．

INTEREST TABLES

| $\begin{array}{\|l\|} \hline \text { After } \\ \text { Years } \end{array}$ | $\underset{\text { Purchass }}{\text { Years' }} 7 \%$ |  | $\underset{\text { Purchase }}{\text { Years' }} \mathbf{8 \%}$ |  |  |  | $\underset{\text { Purchase }}{\text { Years }} 10 \%$ |  | After |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 13.351 | $13 \frac{1}{4}$ | 11•574 | $1 \mathrm{I}_{2}^{2}$ | 10•194 | $10 \frac{1}{4}$ | 9．091 | 9 | 1 |
| 2 | 12.477 | 122 | 10.717 | $10 \frac{3}{4}$ | 9.352 | $9 \frac{1}{4}$ | $8 \cdot 264$ | $8 \frac{1}{4}$ | 2 |
| 3 | 11．66I． | $11 \frac{3}{4}$ | 9.923 | 10 | $8 \cdot 580$ | $8 \frac{1}{2}$ | 7.513 | $7 \frac{1}{2}$ | 3 |
| 4 | 10.898 | 1 I | $9 \cdot 188$ | $9 \frac{1}{4}$ | 7.872 | $7 \frac{3}{4}$ | 6.830 | $6 \frac{3}{4}$ | 4 |
| 5 | $10 \cdot 185$ | $1 \mathrm{IO}_{\frac{1}{4}}$ | $8 \cdot 507$ | $8 \frac{1}{2}$ | 7.222 | $7 \frac{1}{4}$ | $6 \cdot 210$ | $6 \frac{1}{4}$ | 5 |
| 6 | 9.519 | $9 \frac{1}{2}$ | $7 \cdot 877$ | $7 \frac{3}{4}$ | $6 \cdot 626$ | $6 \frac{3}{4}$ | $5 \cdot 645$ | $5 \frac{3}{4}$ | 6 |
| 7 | 8.896 | 9 | 7.294 | $7 \frac{1}{4}$ | 6.078 | 6 | $5 \cdot 132$ | $5 \frac{1}{4}$ | 8 |
| 8 | 8.314 | $8 \frac{1}{4}$ | $6 \cdot 753$ | $6 \frac{3}{4}$ | $5 \cdot 577$ | $5 \frac{1}{2}$ | $4 \cdot 665$ | $4 \frac{5}{4}$ | 8 |
| $9$ | 7.770 | $7 \frac{7}{4}$ | $6 \cdot 253$ | $6 \frac{1}{4}$ | $5 \cdot \mathrm{II} 6$ | 5 | 4.24 I | $4{ }^{\frac{1}{4}}$ |  |
| Io | $7 \cdot 262$ | $7 \frac{1}{4}$ | $5 \cdot 790$ | 59 | $4 \cdot 694$ | 4 ${ }^{\frac{3}{4}}$ | 3.855 | $3 \frac{3}{4}$ | 10 |
| II | $6 \cdot 787$ | $6 \frac{3}{4}$ | $5 \cdot 361$ | $5 \frac{1}{4}$ | 4.306 | $4 \frac{1}{4}$ | 3.505 | $3 \frac{1}{2}$ | II |
| 12 | $6 \cdot 343$ | $6 \frac{1}{4}$ | 4.964 | 5 | 3.951 | 4 | 3．186 | $3 \frac{1}{4}$ | 12 |
| 13 | 5.928 | 6 | 4.596 | 42 $\frac{2}{2}$ | $3 \cdot 625$ | $3 \frac{1}{2}$ | 2.897 | 3 | 13 |
| 14 | $5 \cdot 540$ | $5 \frac{1}{2}$ | $4 \cdot 256$ | $4 \frac{1}{4}$ | $3 \cdot 325$ | $3 \frac{1}{4}$ | 2.633 | $2 \frac{3}{4}$ | 14 |
| 15 | 5．178 | $5 \frac{1}{4}$ | 3.940 | 4 | 3.051 | 3 | $2 \cdot 394$ | 2 $\frac{1}{2}$ | 15 |
| 16 | 4.839 | $4 \frac{3}{4}$ | $3 \cdot 649$ | 3 ${ }^{\frac{3}{4}}$ | $2 \cdot 799$ | $2 \frac{8}{4}$ | 2．176 | $2 \frac{1}{4}$ | 16 |
| 17 | $4 \cdot 522$ | $4 \frac{1}{2}$ | 3.378 | 32 | 2.568 | $2 \frac{1}{2}$ | 1－978 | 2 | 17 |
| 18 | 4.226 | $4 \frac{1}{4}$ | 3．128 | $3 \frac{1}{4}$ | $2 \cdot 356$ | $2 \frac{1}{4}$ | $1 \cdot 799$ | $1{ }^{\frac{3}{4}}$ | 18 |
| 19 | 3.950 | 4 | 2.896 | 3 | $2 \cdot 16 \mathrm{I}$ | $2 \frac{1}{4}$ | 1.635 | 1 | 19 |
| 20 | 3.691 | $3 \frac{3}{4}$ | 2.682 | $2 \frac{3}{4}$ | I．983 | 2 | 1.486 | $1 \frac{1}{2}$ | 20 |
| 21 | 3.450 | $3 \frac{1}{2}$ | 2.483 | $2 \frac{2}{2}$ | I．819 | $1 \frac{8}{4}$ | $1 \cdot 351$ | $1 \frac{1}{4}$ | 2 I |
| 22 | 3.224 | $3{ }^{\frac{1}{4}}$ | $2 \cdot 299$ | $2 \frac{1}{4}$ | I 669 | ${ }^{1}$ | 1.229 | $1 \frac{1}{4}$ | 22 |
| 23 | 3.013 | 3 | 2.129 | $2 \frac{1}{4}$ | 1.531 | $1{ }^{\frac{1}{2}}$ | $1 \cdot 117$ | I | 23 |
| 24 | 2.816 | $2{ }^{\frac{3}{4}}$ | 1.971 | 2 | 1.405 | $\underline{1} \frac{1}{2}$ | $1 \times 15$ | I | 24 |
| 25 | 2.632 | $2 \frac{3}{4}$ | 1.825 | $1{ }^{\frac{3}{4}}$ | I 289 | $1{ }^{1}$ | ＇920 | 1 | 25 |
| 26 | 2.460 | $2 \frac{1}{2}$ | 1.690 | $1 \frac{3}{4}$ | 1－182 | $1{ }^{\frac{1}{4}}$ | －839 | $\frac{3}{4}$ | 26 |
| 27 | 2.299 | $2 \frac{1}{4}$ | 1.565 | $1 \frac{1}{2}$ | r 085 | I | $\cdot 763$ |  | 27 |
| 28 | 2.148 | $2{ }_{4}^{1}$ | 1.449 | $1{ }_{1}^{1}$ | 1.005 | I | ． 693 | $\frac{3}{4}$ | 28 |
| 29 | 2.008 | 2 | －I•342 | $1{ }^{1}$ | $\cdot 913$ | ${ }^{1}$ | $\cdot 630$ | $\frac{3}{4}$ | 29 |
| 30 | 1.876 | 2 | 1.242 | $1{ }^{1}$ | －838 | $\frac{8}{4}$ | －573 | 1 | 30 |
| 3 I | 1－754 | $1{ }^{\frac{3}{4}}$ | 1.150 | I ${ }^{1}$ | 7769 | ${ }^{\frac{3}{4}}$ | －521 | $\frac{1}{2}$ | 3 I |
| 32 | － 639 | ${ }^{1} \frac{1}{4}$ | 1.065 | 1 | $\cdot 705$ | $\frac{3}{4}$ | －474 | $\frac{3}{2}$ | 32 |
| 33 | r．532 | ${ }^{1}$ | ＇986 | 1 | $\cdot 647$ | $\frac{3}{4}$ | $\cdot 431$ | $\frac{2}{2}$ | 33 |
| 34 | 1.431 | ${ }^{1}$ | ． 913 | ${ }^{1}$ | ． 594 | $\frac{3}{2}$ | ． 391 | $\frac{1}{3}$ | 34 |
| 35 | I 338 | ${ }^{1}$ | $\cdot 845$ | $\frac{3}{4}$ | －545 | $\frac{1}{2}$ | $\cdot 356$ | 1 | 35 |
| 36 37 | I 250 － 168 | ${ }_{1}{ }_{1}^{1}$ | $\cdot 783$ | $\frac{3}{4}$ | ． 500 | 产 | $\cdot 323$ | ${ }^{\frac{1}{3}}$ | 36 |
| 37 | I－168 | ${ }^{1} \frac{1}{4}$ | ＇725 | $\frac{8}{4}$ | －458 | 咼 | $\cdot 294$ | $\frac{1}{3}$ | 37 |
| 38 | 1.092 | I | ． 671 | 4 | －421 | $\frac{2}{2}$ | $\cdot 267$ | 1 | 38 |
| 39 | I 002 I | 1 | －62I | $\frac{1}{2}$ | $\cdot 386$ | $\frac{3}{3}$ | －243 | $\frac{1}{4}$ | 39 |
| 40 | －954 | 1 | ＇575 |  | －354 |  | －22I | $\frac{1}{5}$ | 40 |
| 41 | －891 | ${ }^{1}$ | $\cdot 533$ | $\frac{1}{2}$ | － 325 | $\frac{1}{3}$ | － 201 | $\frac{1}{5}$ | 41 |
| 42 | $\cdot 833$ | $\frac{3}{4}$ | $\cdot .493$ | 年 | － 298 | $\frac{1}{3}$ | －183 | $\frac{2}{5}$ | 42 |
| 43 | $\checkmark 778$ | ${ }^{\text {s }}$ | －457 | $\frac{1}{2}$ | $\cdot 273$ | $\frac{1}{4}$ | －166 | $\frac{1}{6}$ | 43 |
| 44 | ． 728 | 年 | $\cdot 423$ | $\frac{1}{2}$ | $\cdot 251$ | $\frac{1}{4}$ | －151 | $\frac{1}{5}$ | 44 |
| 45 | $\cdot 680$ | $\frac{8}{4}$ | －392 | $\frac{1}{2}$ | －230 | $\frac{1}{4}$ | －137 | $\frac{1}{7}$ | 45 |
| 46 | $\cdot 635$ |  | －363 | $\frac{1}{3}$ | $\cdot 211$ | $\frac{1}{5}$ | －125 | $\frac{1}{8}$ | 46 |
| 47 | $\cdot 594$ | $\frac{3}{2}$ | $\cdot 336$ | $\frac{1}{3}$ | －194 | $\frac{1}{5}$ | －113 | $\frac{1}{9}$ | 47 |
| 48 | $\cdot 555$ | 年 | －311 | $\stackrel{3}{3}$ | －178 | $\frac{1}{6}$ | －103 | $\frac{1}{10}$ | 48 |
| 49 | $\cdot 519$ | $\frac{1}{2}$ | $\cdot 288$ | $\frac{1}{3}$ | －163 | $\frac{8}{6}$ | －094 | $\frac{1}{11}$ | 49 |
| 50 | 485 | $\frac{1}{2}$ | ＇267 | $\frac{1}{4}$ | $\cdot 150$ | $\frac{1}{7}$ | －085 | $\frac{1}{12}$ | 50 |

For Explanations and Examples，see pp．xviii．and xix．Tables continued on pp．xxxii．－xxxv．and xxxviii．，xxxix．

| The Present Value of the REVERSION OF A PERPETUITY after any given Term not exceeding 100 Yeare |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\left.\right\|_{\text {Aiter }}$ | $\underset{\text { Purchase }}{\text { Years' }^{4}} \mathbf{\%}$ |  | ${ }_{P}^{\text {Yearg' }}{ }_{\text {Purchase }} 4 \frac{1}{2} \%$ |  | $\underset{\text { Yurchase }}{ }{ }^{\text {Years }}$, 5 |  | $\underset{\text { Purchase }}{\text { Years' }} 6 \%$ |  | \|After Years |
| 5 I | 3.383 | $3 \frac{1}{2}$ | $2 \cdot 354$ | 2 $\frac{1}{4}$ | $1{ }^{6} 661$ | $1{ }^{\frac{3}{4}}$ | . 854 | $\frac{3}{4}$ | 51 |
| 52 | 3.253 | $3 \frac{1}{4}$ | 2.253 | $2 \frac{1}{4}$ | 1.582 | $1{ }^{1}$ | -806 | $\frac{3}{4}$ | 52 |
| 53 | $3 \cdot 128$ | $3{ }^{\frac{1}{4}}$ | $2 \cdot 156$ | $2 \frac{1}{4}$ | 1.507 | $1 \frac{1}{2}$ | $\cdot 760$ | $\frac{3}{4}$ | 53 |
| 54 | 3.007 | 3 | $2 \cdot 063$ | 2 | 1.435 | I $\frac{1}{2}$ | 717 |  | 54 |
| 55 | 2.892 | 3 | 1 974 | 2 | 1.367 | $1{ }^{\frac{1}{4}}$ | -677 | $\frac{3}{4}$ | 55 |
| 56 | $2 \cdot 781$ | $2 \frac{3}{4}$ | 1.889 | 2 | I. 302 | $1 \frac{1}{4}$ | . 639 | $\frac{3}{4}$ | 56 |
| 57 | 2.674 | $2 \frac{3}{4}$ | 1.808 | I ${ }^{\frac{3}{4}}$ | I-240 | ${ }^{1}$ | . 603 | $\frac{2}{2}$ | 57 |
| 58 | 2.57 I | $2 \frac{1}{2}$ | 1-730 | I ${ }^{\text {a }}$ | I.18I | ${ }^{1}{ }^{\frac{1}{4}}$ | -568 | $\frac{1}{2}$ | 58 |
| 59 | 2.472 | $2 \frac{1}{2}$ | 1.655 | 1 ${ }^{\frac{3}{4}}$ | 1.125 | 1 | -536 | $\frac{1}{2}$ | 59 |
| 60 | $2 \cdot 377$ | 2 $\frac{1}{2}$ | 1-584 | $1 \frac{1}{2}$ | 1007 | 1 | '506 | $\frac{3}{2}$ | 60 |
| 6 t | $2 \cdot 285$ | $2 \frac{1}{4}$ | 1.516 | $1{ }^{\frac{1}{2}}$ | 1020 | 1 | 477 | $\frac{1}{2}$ | 6 r |
| 62 | 2•197 | $2 \frac{1}{4}$ | 1.451 | $1 \frac{1}{2}$ | 971 | I | -450 | $\frac{1}{2}$ | 62 |
| 63 | 2-113 | 2 | 1-388 | $1{ }^{\frac{1}{2}}$ | 925 | 1 | -424 | $\frac{1}{2}$ | 63 |
| 64 | 2.031 | 2 | I•328 | $1{ }^{\frac{1}{4}}$ | -881 | 1 | -400 | $\frac{1}{3}$ | 64 |
| 65 | I•953 | 2 | 1-271 | I $\frac{1}{4}$ | -839 | $\frac{3}{4}$ | $\cdot 378$ | $\frac{1}{3}$ | 65 |
| 66 | 1.878 | 2 | 1.217 | $1 \frac{1}{4}$ | $\cdot 799$ | $\frac{3}{4}$ | -356 | $\frac{1}{3}$ | 66 |
| 67 | 1.806 | $1 \frac{8}{4}$ | 1.164 | ${ }^{1} \frac{1}{4}$ | 761 | $\frac{8}{4}$ | $\cdot 336$ | $\frac{1}{3}$ | 67 |
| 68 | I'736 | $1{ }^{\frac{3}{4}}$ | I•14 | 1 | 725 | $\frac{3}{4}$ | 317 | $\frac{1}{3}$ | 68 |
| 69 | 1.670 | $1 \frac{3}{4}$ | I 066 | 1 | $\cdot 690$ | $\frac{3}{4}$ | -299 | $\frac{1}{3}$ | 69 |
| 70 | I 605 | $1 \frac{1}{2}$ | -020 | 1 | $\cdot 657$ | $\frac{8}{4}$ | $\cdot 282$ | $\frac{1}{4}$ | 70 |
| 71 | 1 544 | I $\frac{1}{2}$ | -976 | 1 | . 626 | $\frac{8}{4}$ | $\cdot 266$ | $\frac{1}{4}$ | 71 |
| 72 | 1.484 | $1 \frac{1}{2}$ | -934 | 1 | $\cdot 596$ | $\frac{1}{2}$ | -255 | $\frac{1}{4}$ | 72 |
| 73 | I 4272 | ${ }_{1} \mathrm{I} \frac{1}{2}$ | . 894 | ${ }_{3}$ | $\cdot 568$ | $\frac{1}{2}$ | $\cdot 237$ | ${ }_{\frac{1}{4}}^{4}$ | 73 |
| 74 | 1.372 | $1{ }^{1}$ | . 855 | $\frac{3}{8}$ | . 541 | $\frac{1}{2}$ | $\cdot 223$ | ${ }_{4}^{4}$ | 74 |
| 75 | 1 320 | $1 \frac{1}{4}$ | -819 | $\frac{3}{4}$ | -515 | $\frac{1}{2}$ | -211 | $\frac{1}{5}$ | 75 |
| 76 | I $\cdot 269$ | $1 \frac{1}{4}$ | $\cdot 783$ | $\frac{3}{4}$ | -491 | $\frac{1}{2}$ | -199 | $\frac{1}{5}$ | 76 |
| 77 | I 220 | $1{ }^{1}$ | 750 | $\frac{3}{4}$ | -467 | $\frac{1}{2}$ | -188 | 5 | 77 |
| 78 | 1-173 | $1{ }_{1}^{1}$ | $\cdot 717$ | $\frac{8}{8}$ | -445 | $\frac{1}{2}$ | -177 | $\frac{1}{1}$ | 78 |
| 79 | 1.128 | $1{ }^{1}$ | -686 | $\frac{8}{4}$ | -424 | 立 | -167 | $\frac{1}{4}$ | 79 |
| 80 | $\mathrm{I} \cdot 085$ | 1 | $\cdot 657$ | $\frac{3}{4}$ | $\cdot 404$ | $\frac{1}{2}$ | -158 | $\frac{1}{6}$ | 80 |
| 85 | -891 | 1 | $\cdot 527$ | $\frac{1}{2}$ | 316 | $\frac{1}{3}$ | -118 | $\frac{1}{8}$ | 85 |
| 90 | $\cdot 733$ | $\frac{8}{4}$ | -423 | $\frac{1}{2}$ | $\cdot 248$ | $\frac{1}{4}$ | -088 | $\frac{1}{41}$ | 90 |
| 95 | $\cdot 602$ | $\frac{1}{2}$ | -339 | $\frac{1}{3}$ | -194 | $\frac{1}{5}$ | -066 | $\frac{1}{15}$ | 95 |
| 100 | -495 | $\frac{1}{2}$ | $\cdot 272$ | $\frac{1}{4}$ | -152 |  | -049 | $\frac{1}{20}$ | 100 |

Examples.-The perpetuity of an annuity of $\mathfrak{£ i}$ per annum after 65 years is worth in present money : at 4 per cent., $\mathfrak{E}^{2} 1953$, or 2 years' purchase ; at $4 \frac{1}{2}$ per cent., $\mathbb{E}^{\prime} \mathbf{1} \cdot 27 \mathrm{I}$, or $\mathrm{I} \frac{1}{4}$ years' purchase.

INTEREST TABLES

The Present Valne of the REVERSION OF A PERPETUITY after any given Term not exceeding 100 Years

| After Yeara | Years' Purchase | $7 \%$ | $\underset{\text { Yurchase }}{\text { Years' }}$ | \% | $\begin{aligned} & \text { Years' } \\ & \text { Purchase } \end{aligned}$ | \% | $\left[\begin{array}{c} \text { Years' } \\ \text { Purohase } \end{array}\right]$ | \% | $\begin{array}{\|l\|l\|} \text { After } \\ \text { Yeara } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | 453 | $\frac{1}{2}$ | $\stackrel{247}{ } \cdot$ | ${ }_{\frac{1}{4}}^{\frac{1}{4}}$ | - 137 |  | .078 |  | 51 |
| 52 | -423 | 2 | $\cdot 229$ | $\frac{1}{4}$ | - 126 | $\frac{1}{6}$ | $\bigcirc 071$ | $\frac{1}{14}$ | 52 |
| 53 | -396 | $\frac{2}{2}$ | $\cdot 212$ | $\frac{3}{5}$ | $\cdot 116$ | $\frac{2}{8}$ | $\cdot 064$ | $\frac{1}{18}$ | 53 |
| 54 | 370 | 3 | -196 | $\frac{3}{5}$ | -106 | $\frac{1}{1}$ | . 059 | $\frac{1}{17}$ | 54 |
| 55 | '346 | $\frac{1}{3}$ | -182 | $\frac{1}{5}$ | $\cdot 097$ | $\frac{1}{10}$ | -053 | $\frac{1}{19}$ | 55 |
| 56 | -323 | $\frac{1}{3}$ | -168 | $\frac{1}{6}$ | -089 | $\frac{1}{11}$ | . 049 | $\frac{1}{20}$ | 56 |
| 57 | $\cdot 302$ | $\frac{1}{3}$ | ${ }^{1} 56$ | $\frac{1}{6}$ | $\bigcirc 82$ | $\frac{1}{12}$ | $\bigcirc$ | $\frac{1}{23}$ | 57 |
| 58 | -282 | $\frac{1}{4}$ | -144 | $\frac{1}{7}$ | - 075 | $\frac{1}{131}$ | - 040 | $\frac{1}{25}$ | 58 |
| 59 | -264 | $\frac{1}{1}$ | -134 | $\frac{2}{7}$ | .069 | $\frac{1}{1.1}$ | . 037 | ${ }^{\frac{3}{27}}$ | 59 |
| 60 | '246 | $\frac{1}{4}$ | -124 | $\frac{1}{4}$ | . 063 | $\frac{1}{18}$ | -033 | $\frac{1}{10}$ | 60 |
| 61 | -230 | ${ }^{\frac{1}{4}}$ | -114 |  | -058 |  | -030 | $\frac{1}{33}$ | 61 |
| 62 | $\cdot 215$ | ${ }_{5}^{1}$ | -106 | $\frac{1}{8}$ | - 05 | $\frac{1}{19}$ | $\cdot 027$ | $\frac{1}{37}$ | 62 |
| 63 | -201 |  | -098 | $\frac{7}{10}$ | . 049 | $\frac{1}{20}$ | . 025 | $\frac{1}{40}$ | 63 |
| 64 | -188 | $\frac{1}{5}$ | $\bigcirc 91$ | $\frac{1}{11}$ | . 045 | $\frac{1}{22}$ | . 022 | $\frac{1}{45}$ | 64 |
| 65 | $\cdot 176$ | $\frac{1}{6}$ | $\cdot 084$ | $\frac{1}{12}$ | . 041 | $\frac{1}{24}$ | -020 | $\frac{1}{50}$ | 65 |
| 66 | $\cdot 164$ | $\frac{1}{6}$ | -078 | $\frac{1}{13}$ | -038 | $\frac{1}{20}$ | -019 | $\frac{1}{53}$ | 56 |
| 67 | - 154 | $\frac{1}{8}$ | ${ }^{\circ} 72$ | $\frac{1}{11^{4}}$ | $\bigcirc 35$ | $\frac{1}{29}$ | $\bigcirc 017$ | $\frac{1}{19}$ | 67 |
| 68 | -143 | $\frac{1}{7}$ | -067 | $\frac{1}{15}$ | . 032 | $\frac{1}{31}$ | $\bigcirc 015$ | $\frac{1}{\mathrm{~A}^{7}}$ | 68 |
| 69 | -134 | $\frac{1}{7}$ | -062 | $\frac{1}{18}$ | . 029 | $\frac{1}{34}$ | $\bigcirc$ | $\frac{1}{71}$ | 69 |
| 70 | -125 | $\frac{1}{8}$ | -057 | $\frac{1}{18}$ | . 027 | $\frac{1}{37}$ | -13 | $\frac{1}{77}$ | 70 |
| 71 | -117 | $\frac{1}{8}$ | -053 | $\frac{1}{19}$ | . 024 | $\frac{1}{42}$ | $\cdot 012$ | $\frac{1}{83}$ | 71 |
| 72 | -109 | $\frac{1}{8}$ | -049 | $\frac{1}{20}$ | $\bigcirc 022$ | $\frac{1}{45}$ | -10 | ${ }_{1}^{10}$ | 72 |
| 73 | -102 | $\frac{1}{10}$ | 045 | $\frac{1}{22}$ | -021 | $\frac{1}{48}$ | $\bigcirc 10$ | $\frac{1}{100}$ | 73 |
| 74 | $\cdot 096$ | $\frac{1}{10}$ | ${ }^{\circ} \mathrm{O} 2$ | $\frac{1}{24}$ | -019 | $\frac{1}{53}$ | -009 | $\frac{1}{1} 1$ | 74 |
| 75 | -089 | $\frac{1}{11}$ | -039 | $\frac{1}{26}$ | . 017 | $\frac{1}{59}$ | '008 | $\frac{1}{125}$ | 75 |
| 76 | -084 | $\frac{1}{12}$ | . 036 | $\frac{1}{28}$ | . 016 | $\frac{1}{82}$ | -007 | $\frac{1}{143}$ | 76 |
| 77 | -078 | $\frac{1}{13}$ | .033 | $\frac{3}{30}$ | $\bigcirc$ |  | .006 | $\frac{1}{197}$ | 77 |
| 78 | -073 | $\frac{1}{14}$ | $\cdot 031$ | $\frac{1}{32}$ | - 013 | ${ }^{\frac{1}{7}}$ | . 006 | $\frac{1}{107}$ | 78 |
| 79 80 | .068 | $\frac{1}{15}$ | -029 | $\frac{1}{34}$ | .012 | $\frac{\frac{1}{13}}{\frac{13}{13}}$ | . 005 | - | 79 80 |
| 80 | -064 | $\frac{1}{16}$ | -026 | $\frac{1}{38}$ | OII | $\frac{1}{91}$ | -005 | $\frac{1}{200}$ | 80 |
| 85 | -045 | $\frac{1}{1}$ | -018 | $\frac{1}{56}$ | . 007 | $\frac{1}{143}$ | -003 | $\frac{1}{3 \times 3}$ | 85 |
| 90 | $\bigcirc 32$ | $\frac{1}{31}$ | . 012 | $\frac{1}{63}$ | -005 | $\frac{1}{200}$ | .002 | $\frac{1}{500}$ | 90 |
| 95 | -023 | $\frac{1}{43}$ | .008 | $\frac{1}{125}$ | -003 | ${ }^{\frac{1}{3}}$ | -001 | $\frac{1}{1000}$ | 95 |
| 100 | -016 | $\frac{1}{62}$ | . 006 | $\frac{1}{167}$ | -002 | $\frac{1}{500}$ | -001 | $\frac{1}{1000}$ | 100 |

For Explanations and Examples, see pp. xviii. and xix. Tables continued on pp. xxxii.-xxxvii.

| Years | PRESENT | VALUE OF | Years | PRESENT VALUE OF |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | One Pound | £1 per Annum |  | One Pound | £1 per Annum |
| I | -8695652 | -8695652 | 51 | -0008024 | 6.6613171 |
| 2 | -7561437 | 1.6257089 | 52 | -0006978 | $6 \cdot 6620149$ |
| 3 | - 6575162 | $2 \cdot 2832251$ | 53 | -0006068 | $6 \cdot 6626216$ |
| 4 | -5717532 | 2.8549784 | 54 | $\cdot 0005276$ | 6.6631492 |
| 5 | -4971767 | 3.3521551 | 55 | -0004588 | $6 \cdot 6636080$ |
| 6 | -4323276 | $3 \cdot 7844827$ | 56 | -0003990 | $6 \cdot 6640070$ |
| 7 | -3759370 | 4'1604197 | 57 | -0003469 | $6 \cdot 6643539$ |
| 8 | -3269018 | 4.4873215 | 58 | -0003017 | $6 \cdot 6646556$ |
| 9 | -2842624 | 47715839 | 59 | -0002623 | $6 \cdot 6649179$ |
| 10 | -2471847 | $5 \cdot 187686$ | 60 | -000228I | 6.6651460 |
| 11 | -2149432 | 5.2337118 | 61 | -0001983 | $6 \cdot 6653443$ |
| 12 | -1869072 | 5.4206190 | 62 | -0001725 | 6.6655168 |
| 13 | -1625280 | $5 \cdot 5831470$ | 63 | .0001500 | $6 \cdot 6656668$ |
| 14 | -1413287 | $5 \cdot 7244756$ | 64 | -0001304 | 6.6657972 |
| 15 | -1228945 | 5.8473701 | 65 | .0001134 | $6 \cdot 6659106$ |
| 16 | -1068648 | 5'9542349 | 66 | -0000986 | $6 \cdot 6660092$ |
| 17 | -0929259 | 6.0471608 | 67 | .0000858 | $6 \cdot 6660950$ |
| 18 | -080805 1 | $6 \cdot 1279659$ | 68 | -0000746 | 6.6661696 |
| 19 | $\cdot 0702653$ | $6 \cdot 1982312$ | 69 | $\cdot 0000648$ | $6 \cdot 6662344$ |
| 20 | -0611003 | $6 \cdot 2593315$ | 70 | $\cdot 0000564$ | $6 \cdot 6662908$ |
| 21 | -0531307 | $6 \cdot 3124622$ | 71 | . 0000490 | $6 \cdot 6663398$ |
| 22 | -0462006 | $6 \cdot 3586627$ | 72 | .0000426 | $6 \cdot 6663824$ |
| 23 | -0401744 | $6 \cdot 3988372$ | 73 | -0000371 | $6 \cdot 6664195$ |
| 24 | -0349343 | $6 \cdot 4337714$ | 74 | -0000322 | 6.6664518 |
| 25 | -0303776 | 6.4641491 | 75 | .0000280 | 6.6664798 |
| 26 | -0264153 | $6 \cdot 4905644$ | 76 | .0000244 | $6 \cdot 6665042$ |
| 27 | -0229699 | $6 \cdot 5135343$ | 77 | -0000212 | 6.6665254 |
| 28 | -0199738 | $6 \cdot 5335081$ | 78 | -0000184 | $6 \cdot 6665438$ |
| 29 | -0173685 | $6 \cdot 5508766$ | 79 | -0000160 | $6 \cdot 6665598$ |
| 30 | -015103I | $6 \cdot 5659796$ | 80 | .0000139 | $6 \cdot 6665738$ |
| 31 | -0131331 | $6 \cdot 5791127$ | 81 | -0000121 | $6 \cdot 6665859$ |
| 32 | -O114201 | $6 \cdot 5905328$ | 82 | -0000105 | $6 \cdot 6665954$ |
| 33 | -0099305 | $6 \cdot 6004633$ | 83 | -0000092 | $6 \cdot 6666056$ |
| 34 | -0086352 | $6 \cdot 6090985$ | 84 | -0000080 | $6 \cdot 6666135$ |
| 35 | -0075089 | $6 \cdot 6166074$ | 85 | -0000069 | 6.6666205 |
| 36 | . 0065295 | $6 \cdot 6231369$ | 86 | -0000060 | $6 \cdot 6666265$ |
| 37 | -0056778 | $6 \cdot 6288147$ | 87 | -0000052 | 6.6666317 |
| 38 | -0049372 | $6 \cdot 6337519$ | 88 | -0000046 | $6 \cdot 6666363$ |
| 39 | -0042932 | 6.6380451 | 89 | -0000040 | $6 \cdot 6666403$ |
| 40 | .0037332 | $6 \cdot 6417784$ | 90 | $\cdot 0000034$ | $6 \cdot 6666437$ |
| 4 I | -0032463 | $6 \cdot 6450247$ | 91 | -0000030 | $6 \cdot 6666467$ |
| 42 | $\cdot 0028229$ | $6 \cdot 6478475$ | 92 | -0000026 | 6.6666493 |
| 43 | -0024547 | $6 \cdot 6503022$ | 93 | $\cdot 0000023$ | $6 \cdot 6666516$ |
| 44 | -0021345 | $6 \cdot 6524367$ | 94 | -0000020 | $6 \cdot 6666535$ |
| 45 | . 0018561 | $6 \cdot 6542928$ | 95 | -0000017 | $6 \cdot 6666552$ |
| 46 | -0016140 | $6 \cdot 6559068$ | 96 | -0000015 | $6 \cdot 6666567$ |
| 47 | -0014035 | $6 \cdot 6573102$ | 97 | -0000013 | 6.6666580 |
| 48 | -0012204 | $6 \cdot 6585306$ 6.6595919 | 98 | -0000011 | 6.6666592 |
| 49 50 | -0010612 | $6 \cdot 6595919$ | 99 | -0000010 | $6 \cdot 6666601$ |
| 50 | -0009228 | $6 \cdot 6605147$ | 100 | $\cdot 0000009$ | $6 \cdot 6666610$ |

For explanation see pp, xviii, $10,-12$

## INTRODUCTION

## ON THE NATURE AND USE OF DECIMALS

In order to render the following tables intelligible to persons only moderately acquainted with common arithmetic it may be well to frive a brief explanation of decimals, since most of the tables here given involve their use.

Our entire system of numbering (if for the moment we leave fractions out of consideration) is, in fact, the decimal system, which means literally a system of tens, for if any number consist of a single figure-say, 6 -we call that number six-that is, six units or six onesbut if another figure-a 4, for instance-stand before it, making the number 46 , we do not call this 4 four ones, but four tens, and thus regard the number as forty-six. In like manner if another figure- 3 , for instance-be prefixed making the number 346, we regard this 3 not as three ones, nor as three tens, but as three hundreds. In this way we give to every figure in a number ten tímes the value the same figure would have if it were moved one place more to the right ; so that the value of a figure depends upon its position. When we are dealing with whole numbers the figure occupying the first place on the right denotes so many ones, the next figure so many tens, the next so many hundreds, and so on. This tenfold increase of value which every advance towards the left gives to a figure is properly called the decimal system of notation.

Now what are more particularly called decimals are numbers that are less than unity, and they are dealt with on exactly the same principle as numbers that are more than unity, a decimal dot being placed to indicate what numbers are more than unity and what numbers are less than unity. Whether we are dealing with numbers greater or less than unity the value of a figure is ten times as much as the value of the same figure placed next to it on the right-hand side and one tenth as much as the value of the same figure placed

## INTRODUCTION

next to it on the left-hand side. It is, therefore, just as simple to deal with decimals as it is to deal with whole numbers.

If we see a number, such as 346 , without any decimal dot we understand, as explained above, that the 6 stands for six ones, but if between the four and the six we place a decimal dot, $34^{\circ} 6$, we then know that the four no longer stands for four tens, but for four ones, and the 6 no longer stands for six ones, but for six tenths of one. So if we write 3.46 the 3 no longer stands for three hundreds, but for three ones, the 4 for four tenths of one, and the 6 for six hundredths of one. The decimal dot, therefore, is simply employed to tell us where the ones come, for the figure immediately to the left of the decimal dot always stands for so many ones. If these uniform gradations by tens and tenths are kept in mind no difficulty will arise in dealing with the decimals.

## Decimals and Fractions

From this it will be seen that any decimal may be converted into its equivalent fraction at once: we have only to write the decimal, removing the dot, for numerator, and to write for denominator $\mathbf{I}$ followed by as many cyphers as there are figures, or places, in the decimal. Thus :

$$
0.6=\frac{6}{10} ; \quad 06=\frac{6}{100} ; \cdot 006=\frac{6}{1000} ; \quad 42=\frac{42}{100} ; \quad 423=\frac{423}{1000},
$$

and so on.
Every fraction too of which the denominator 1 is followed by cyphers may just as readily be written as a decimal, thus

$$
\frac{3}{10}=3 ; \frac{7}{100}=\cdot 07 ; \quad \frac{9}{1000}=\cdot 009 ; \quad \underset{100}{2463}=24 \cdot 63, \& c .
$$

We have only to write down the numerator and to point off from the right as many decimal places as there are cyphers in the denominator, supplying this necessary number of places by cyphers immediately after the decimal point, should the number of figures in the numerator be too few.

Fractions, whatever be their denominators, may also be converted into decimals, as will be seen presently.

## Addition of Decimals

From what has been already said it will be seen that the important thing in the addition of decimals is to take care that the decimal dots all come under one another, just as in the addition of whole
numbers the units have to come under the units, the tens under the tens, and so on. If this point is attended to the matter is perfectly simple, and is conducted exactly like simple addition. A few examples are given below :-
r. Add together $2.345, \cdot 64,23 \cdot 7,{ }^{\circ}$ o2.
2. $7 \cdot 43^{2}, 16 \cdot 207, \cdot 021, \cdot 4628$.
3. ${ }^{\circ} 005,614,{ }^{\circ} 68,7 \cdot 2$.

| $(\mathrm{I})$ | $(2)$ | $(3)$ |
| :---: | :---: | :---: |
| 2.345 | 7.432 | .005 |
| .64 | 16.207 | 61.4 |
| 23.7 | .021 | .368 |
| .02 | .4628 | 7.2 |
| 26.705 | 24.1228 | 68.973 |

## Subtraction of Decimals

In subtracting decimals, as in adding them, the important thing as to see that the decimal dots come under one another, and if this is done the subtraction of decimals is carried out in exactly the same way as simple subtraction. A few examples of subtraction are also given :-
I. Subtract $3 \cdot 725$ from $5 \cdot 103$.
2. 27.846 from $3 \mathrm{I}^{\prime} 3$.
3. 026 from $12: 4$.

| $(\mathrm{I})$ | $(2)$ | $(3)$ |
| :---: | :---: | :---: |
| 5.103 | 3 r 3.3 | 12.4 |
| 3.725 | 27.846 | .026 |
| 1.378 | $\underline{3.454}$ | 12.374 |

In the third example of addition two cyphers appear immediately to the right of the decimal dot. These o's serve to indicate the position, and therefore the value, of the figure to the right of them ; thus 005 indicates that there are no tenths nor hundredths, and that the five stands for five thousandths; and similarly in the third example of subtraction 026 indicates that there are no tenths, but that the 2 stands for two hundredths and the 6 for six thousandths.

## Multiplication of Decimals

It will have already been seen that we multiply a number involving decimals by 10 by simply removing the decimal point one place to

## INTRODUCTION

the right; we multiply by 100 by removing the point two places to the right, and so on. Thus:

$$
\begin{gathered}
6 \times 10=6 ; \cdot 6 \times 100=60 ; \cdot 006 \times 100=6 . \\
42 \times 10=4 \cdot 2 ; 42 \times 100=42 ; 4.2 \times 100=420 .
\end{gathered}
$$

In order to multiply a number containing decimals by any whole number-that is, by any number without decimals-we proceed exactly as we should do if there were no decimals at all ; only when the product is cbtained we must point off, as decimals, as many places as there are places pointed off in the number 24.623 multiplied. Thus, if we have to multiply $24^{\circ} 623$ by 47 , $\quad 47$ we proceed as in the margin, and so in all similar ${ }^{172361}$ cases. As the number multiplied has three decimal $9849^{2}$ places, we mark off three places of decimals in the pro- $\overline{{ }^{1157.28 I}}$ duct.

If we have to multiply together two numbers which both contain decimals we proceed as in simple multiplication, and place the decimal dot in the answer in such a position that the number of decimals is the same in the answer as in the two numbers when their decimal places are added together. Thus:

$$
\begin{gathered}
\mathrm{I} 2 \times \mathrm{I} \mathrm{I}=\mathrm{I} \cdot 32 ; \cdot \mathrm{I} 2 \times \cdot \mathrm{I} 2=\cdot 0 \mathrm{I} 44 ; \\
.222 \times 3 \cdot \mathrm{I}=\cdot 6882 ; \cdot 033 \times \cdot 22=\cdot 00726 .
\end{gathered}
$$

## Division of Decimals

In dividing a number containing decimals by a whole number we place the decimal dot in the quotient as soon as we bring down a decimal of the dividend. Thus to divide 27344 by 4 we proceed as follows :-

$$
\frac{4 \longdiv { 2 7 \cdot 3 4 4 }}{6 \cdot 836^{\circ}}
$$

After dividing 27 by 4 we come to the decimal 3 , and so the decimal dot had to be placed between the 6 and 8 of the quotient.

If we have to divide by a number that will not go into the decimal part of the dividend we must te careful to record the fact by putting a cypher in the quotient.

Thus $37^{2} \div 4$ gives

$$
\text { 4) } \frac{372}{0.033}
$$

and $0372 \div 4$ gives
4) $\stackrel{0372}{00093}$
(4)

The values of the 9 and the 3 depend on their position, and they must be put in their right place by prefixing cyphers to the left of them if necessary. Placing cyphers to the right of a decimal dot alters the value of the number. Placing cyphers to the right of a decimal number with no other number after the cyphers makes no difference in its value. With whole numbers it is just the opposite of this. Thus:

$$
\cdot 73=\frac{73}{100} ; \cdot 073=\frac{73}{1000} ; \quad \cdot 0073=\frac{73}{10000} ; \cdot 730=\frac{730}{1000} \text { or } \frac{73}{100} ;
$$

These facts have to be borne in mind in the division of decimals. We may add as many cyphers as we please to the right of a decimal number, and so carry our division as far as we choose. 'Thus $4 \cdot 3 \div 7$ may just as well be called $4,30000 \div 7$. It makes no difference in the value, but there is no need to actually write the cyphers in working out the sum. We may put

$$
7) 4 \cdot 3000000 \text { or } 7) 4 \cdot 3
$$

and the result is the same. The benefit of proceeding in this way is that we may get an answer that is more nearly correct than if we left off at the last figure of the dividend. Thus the result of $4.3 \div 7$ is approximately $\frac{6}{10}$, more nearly $\frac{61}{}{ }_{100}$, still more nearly $\frac{614}{6000}$, and so on.

If both the divisor and the dividend contain decimals there must be as many decimal places in the divisor and quotient together as there are in the dividend. This is obvious from what has been said in regard to multiplication. It was there shown that $\cdot 222 \times 3 \cdot 1=6882$, and so if we have to divide $\cdot 6882$ by $\cdot 222$ we have

$$
\begin{gathered}
\cdot 222)^{68882}(3 \cdot 1 \\
\frac{666}{222} \\
222
\end{gathered}
$$

There are three decimal places in the divisor $\mathbf{2 2 2}$, and four in the dividend 6882 , so there must be one in the quotient $3^{\prime} 1$ to add to the three in the divisor to make up the four in the dividend.

In applying this rule it must be borne in mind that the number of decimal places in the dividend means the number actually used in division, and the number of cyphers added to it ranks as decimal places. Thus $8 \cdot 973 \div \cdot 24=37 \cdot 3$ or $37 \cdot 38$ or $37 \cdot 387$ or 373875 , as we may see.

## INTRODUCTION

## '24) ${ }^{\prime} 973000(37 \cdot 3875$

$$
72
$$

177 168

93
72
210
192
180
168
120
120
There are one, or two, or three, or four places of decimals in the answer, depending upon the extent to which we carry the division. Obviously the answer cannot sometimes be 37.3 (i.e. $37 \frac{3}{10}$ ), sometimes 3.73 (i.e. $3_{100}^{73}$ ), and so on : it must always be 37 and a little more. Hence the number of decimal places used in the dividend have to be noted, and the number in the quotient added to those in the divisor must make up the number used in the dividend.

Some examples of division are appended.
(1) $44.406 \div 12$
(2) $44.406 \div 12$
12) 44.4060
370.05
(3) $44406 \div 1 \cdot 2$
1.2) 444060
37005
(4) $89 \cdot 648 \div 347 \cdot 3$
$347 \cdot 3) 89 \cdot 64800000(\cdot 2581284$
6946
20188
17365
$2823^{\circ}$
2778
4460
3473
9870
6946
29240
27784
14560
13892
668

> (6)

For most of the purposes for which the tables in this book are likely to be used four or five places of decimals is amply sufficient, and it is unnecessary to carry the calculations any further.

## Fractions and Decimals

We have already shown how readily decimals may be converted into fractions, and we must now show how fractions may be converted into decimals. We saw that a decimal may be thought of as a fraction with the decimal as numerator, and for denominator i followed by as many cyphers as there are decimal places in the decimal. Thus $\cdot \mathrm{I}=\frac{\mathrm{I}}{10} ; \cdot 23=\frac{23}{100}$, and so on. Now it is obvious we do not alter the value of any fraction if we multiply both the numerator and denominator by the same quantity. Thus ${ }_{2}^{1}=\frac{2}{4}=\frac{4}{8}=\frac{8}{16}={ }_{32}^{16}$, and so on. All these fractions are of the same value.

If, therefore, we multiply the denominator by a quantity that makes it equal to 10 or 100 , or any other multiple of 10 , and then multiply the numerator by the same quantity as we multiplied the denominator by, we at once get a fraction that can be converted into a decimal at sight.

Thus

$$
\begin{aligned}
& \mathrm{I}=5 \\
& 2=\frac{10}{10}=\cdot 5 \\
& \mathrm{I}=\frac{25}{100}=\cdot 25 \\
& \frac{2}{2}=\frac{4}{10}=4
\end{aligned}
$$

It is often, however, a clumsy way of working to divide 10 or some power of ro by the denominator, and then multiply the numerator by the result. To do so may involve a long multiplication sum. We therefore multiply the numerator by i followed by any number of cyphers we want and divide by the denominator. In other words, we divide the numerator by the denominator. Thus in converting ${ }_{5}^{2}$ into a decimal it makes no difference in the result whether we bave $\frac{2 \times 10 \div 5}{5 \times 10 \div 5}=\frac{2 \times 2}{5 \times 2}=\frac{4}{10}=4$, or whether we have $\frac{2 \cdot 0}{5}=4$.

But it makes a great deal of difference in the working whether in converting, say, ${ }_{3736}^{868}$ into a decimal we first divide 1 by 3736 and

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multiply the result by 1868 , or whether we divide 1868 by 3736 and get ' 5 as our answer at once.

A few examples of converting fractions into decimals are appended.

$$
\frac{1}{2}=\cdot 5 ; \frac{1}{4}=\cdot 25 ; \frac{3}{4}=\cdot 75 ; \frac{1}{8}=\cdot 125 ; \frac{1}{3}=\cdot \dot{3} ; \frac{2}{3}=\cdot \dot{6}
$$

These are useful fractions of which to know the corresponding decimals. A recurring decimal is marked with a dot above it, and means that it is repeated continuously. Where a group of several figures recurs it is marked with a dot over the first and last of the group. Thus $\frac{1}{3}=33333$ and as many more threes as we care to write. It is shortly expressed as ' $\dot{3}$. If we wish to convert ${ }_{7}^{\mathbf{r}}$ into a decimal, we have

$$
\text { 7) } \frac{1}{\cdot i 4^{28}} 5 \overline{5},
$$

which means that at this stage there is r over, and the numbers 142857 would be repeated indefinitely if the division were continued for an indefinitely long time. Other examples are :-

$$
4 \frac{3}{8}=4.375 ; 7 \frac{9}{16}=7.5625 ; \frac{17}{21}=\cdot 8095_{2}^{2} ; \frac{14}{373}={ }^{\circ} 0375335+
$$

## INTEREST TABLES

On pp. $\mathrm{xx}-\mathrm{xl}$ and 50-124 Interest Tables of various kinds are given. Their construction and use is here explained, in order to facilitate their employment, and to make it possible for those unfamiliar with the subject to perform calculations at other rates and for other periods than those given in the table.

Unless otherwise stated the tables throughout the book are calculated at compound interest, not at simple interest. Compound interest, of course, means that the interest as it becomes due is added to the original debt, and the interest for subsequent periods is calculated on the original debt increased by all the previous accumulations of interest.

## The Amount of $£ \mathrm{I}$

On pp. 50-85 are tables which show for various rates of interest-
(1) The sum which $£ \mathrm{I}$ will amount to in any number of years from 1 to roo ,
(2) The present value of $£ \mathrm{I}$ due at the end of any number of years from I to 100.
(3) The sum to which $£ \mathrm{I}$ per annum will amount in any number of years from t to 100 .
(4) The present value of $£$ I per annum to be received for any number of years.

We will consider these in the order stated, taking our illustrations principally from the $4 \%$ table on pp. 70 and 7 I . It will be convenient to give the explanations by quite simple algebra first, and then to give the arithmetical explanations or numerical examples.

If by $i$ we represent the rate of interest, it is clear that one pound, or one dollar, or any other unit, will amount in one year to $\mathrm{t}+i$; and if we represent the amount by s , we have $\mathrm{s}=\mathrm{r}+\boldsymbol{i}$. If the rate of interest is $4 \%$, or 4 on one hundred, it is o4 on a unit and $1+i=1$. 04 .

At the beginning of the second year, if the interest has not been paid, the loan or investment, s , is $\mathrm{r}+i$, $=\mathrm{r} \cdot 04$, and the interest on this is $i(\mathrm{I}+i),=\mathrm{I} \cdot 04 \times 04=0416$. To find the amount at the end of the second year we must add the second year's interest to the amount at the beginning of the second year. Thus we have $(\mathrm{I}+i)$ $+i(\mathrm{I}+i)=(\mathrm{I}+i) \times(\mathrm{I}+i)=(\mathrm{I}+i)^{2}$, or $\mathrm{I} \cdot 04+(.04 \times \mathrm{I} \cdot \mathrm{O})$ $=1.04+.0416=1.0816=1.04 \times 1.04=1.04^{2}$.

We begin the third year with $\mathrm{s}=(\mathrm{I}+i)(\mathrm{I}+i)$, and the interest for the third year is this amount multiplied by $i=i(\mathrm{x}+i)(\mathrm{x}+i)$, and, adding this to the amount at the beginning of the third year, we have $(\mathrm{r}+i)(\mathrm{I}+i)(\mathrm{I}+i)=(\mathrm{I}+i)^{3},=1.08 \mathrm{I} 6+(.04 \times \mathrm{I} \cdot 08 \mathrm{I} 6)$ $=\mathrm{I} \cdot 08 \mathrm{I} 6+\cdot 043264=\mathrm{I} \cdot \mathrm{t} 24864=1 \cdot 04^{3}$.

Thus the amount of one in any number of years, $n$, is the amount of one in one year raised to the $n^{\text {th }}$ power. This is expressed as $(\mathrm{I}+i)^{n}$, and, if $i=04$, then $(\mathrm{I}+i)^{n}=1 \cdot 04^{n}$. If $n=5$ this is $\mathrm{I}^{\circ} \mathrm{O}_{4}{ }^{5}$. This may be seen below.

| Year | Amount at Beginnin of Year | Process | Amount at End of Year |
| :---: | :---: | :---: | :---: |
| 1 | $1 \times$ | $\times \mathrm{I} \cdot \mathrm{O} 4=\mathrm{I} \cdot \mathrm{O}$ | = 1004 |
| 2 | I.04 $\times$ | $\times 1.04=1.0$ | $4^{2}=1.0816$ |
| 3 | I.08ı6 $\times$ | $\times 1.04=1.0$ | $4^{3}=\mathrm{T}$-1 24864 |
| 4 | I.124864 $\times$ | $\times 1.04=1.0$ | $4^{4}=\mathrm{I} \cdot 16985856$ |
| 5 | I'I6985856 $\times$ | $\times 1.04=1.0$ | $4^{5}=1 \cdot 2166529024$ |

This tells as the amount of s , and, if we want to know what any other sum comes to, we must multiply the sum by the amount of I .

What is the amount of $£, \mathrm{r} 7$ in five years at $4 \%$ ?
(9)


We might get this result more exact by using more places of decimals. Thus, $1.2166529024 \times 17=20.6830993408$, which is no000493408 more than we previously had. The difference is less than $\frac{5}{100000}$ of $£ \mathrm{r}$, which is $\frac{1}{1000}$ of a shilling, or almost $\frac{1}{20}$ of a farthing. This shows that five places of decimals, as given in the tables, give results quite near enough for most purposes.

It is explained later on (pp. 206-228) how easily a table of this kind can be constructed by means of logarithms the practical use of which is extremely simple, and if other rates of interest than those tabulated are needed they should be obtained by logarithms.

It should be noted that the table gives the amount of one pound at the end of the year, i.e. just after the year's interest has been added. The amount at the beginning of any year is the same as the amount at the end of the preceding year. Before explaining some of the uses of these tables it will be best to explain the contents of the other columns on these pages.

We at present assume that the interest is reckoned annually, but later on we shall consider the case of interest convertible half-yearly and at other intervals.

## The Present Value of $£ \mathrm{I}$

If, as we have seen, $£ \mathrm{r}$ amounts to $£ \mathrm{Xro4}$ in one year the present value of this $£ \mathrm{r} \cdot 04$ is obviously $£ \mathrm{f}$. In other words, $\notin \mathrm{r}$ invested now at $4 \%$ will amount to $£^{\circ} \circ 4$ in one year. But if the present value of $£ 104=1$ the present value of $\mathrm{I}=\frac{\mathrm{I}}{\mathrm{I} \cdot 04}$, and using $v$ to represent the present value of I one year hence we have $v=\frac{1}{\mathrm{I}+i}$, and ${v^{n}}^{=} \frac{\mathrm{I}}{(\mathrm{I}+i)^{n}}$, where, as before, $n$ represents the term. If $i=04$ and $n=5$ we have

$$
v^{5}=\frac{1}{(1+i)^{5}}=\frac{1}{1.21665}=82193
$$

Whatever the term may be

$$
\begin{align*}
v & =\frac{\mathrm{r}}{\mathrm{r}+i} \\
\mathrm{I}+i & =\frac{\mathrm{r}}{v} \\
v(\mathrm{x}+i) & =\mathrm{r} \tag{IO}
\end{align*}
$$

Thus to take io years at $4 \%$

$$
\begin{gathered}
\frac{\mathrm{I}}{\mathrm{I}+i}=\frac{\mathrm{I}}{\mathrm{I} \cdot 48024}=6755^{6}=v \\
\mathrm{I}+i=\mathrm{I} 48024=\frac{\mathrm{I}}{6755}=\frac{\mathrm{I}}{v} \\
v(\mathrm{I}+i)=\mathrm{I} .48024 \times .67556=99999
\end{gathered}
$$

By calculating the values of $i$ and $v$ to more places of decimals we may obtain as close an approximation as we please to 1 by multiplying $v$ by $(\mathrm{x}+i)$.

To find the present value of any other sum than i we multiply the sum by the present value of 1 for the number of years required. Thus, the present value of $\mathscr{E} 83$ due at the end of 10 years at $4 \%$ is $\cdot 67556 \times 83=£ 56.07148$. It will be noticed that the table of present values, like the table of amounts, refers to the end of the year. See also pp. xviii, 218.

## The Amount of $£ \mathrm{I}$ per Annum

The third table on each page gives the amount of $f_{1}$ I per annum immediately after each annual payment is made. Thus the first line is in all cases 100000 . This table may be found from the amount of $\mathcal{E} \mathrm{r}$ by a series of additions. Thus at $4 \%$ if to the initial payment of $\mathcal{E}$ we add 1.04000 , the amount of $\mathcal{E}^{\mathrm{I}}$ in one year, we obtain 2.04000 , which is the amount of $\mathcal{E} 1$ per annum immediately after the second annual payment has been made. If to this amount we add 1.08160 , the amount of $\mathcal{E} 1$ at the end of the second year, we obtain $\mathscr{E} 3 \cdot 12160$, the amount of $\mathcal{E}$ i per annum immediately after the third annual payment has been made.

We can, however, obtain the result in another way. The amount of $\mathcal{E} \mathrm{r}$ in five years at $4 \%$ is 1.21665 , of which amount $I$ was the original payment and $\cdot 21665$ the accumulated interest. Now $\mathcal{f}$ yields - 04 every year at interest at $4 \%$, therefore the amount of 04 per annum for 5 years is 21665 . But if .04 per annum amounts to $\cdot 21665$ in 5 years on per annum will amount to one fourth of this sum, which is $054{ }^{16} 6$, and 1 amounts to 100 times this sum, which is $5.4 \mathrm{I}^{2}$, which we see to be the amount of $\mathcal{L}_{1}$ per annum in 5 years. Hence it follows that we can obtain the amount of $£ \mathrm{I}$ per annum by subtracting unity from the amount of $\mathscr{E}_{1}$ and dividing the result by the rate of interest. Hence we get the following expression :

$$
s_{n}^{-}=\frac{(\mathrm{I}+i)^{n}-\mathrm{I}}{i}
$$

where $s_{n}$ is the amount of $£_{\mathrm{I}}$ per annum in $n$ years, $i$ is the rate of interest, and $(\mathrm{I}+i)^{n}$ is the amount of $£ \mathrm{I}$ in $n$ years.

## INTRODUCTION

To find the amount of any other sum for any number of years we take from the table the amount of $£ 1$ per annum at the rate of interest and for the number of years required, and multiply this amount by the sum with which we have to deal. Thus the amount of $£ 75$ per annum for 30 years at $4 \%=£ 56.08494$ (p. 70) $\times 75$ $=£ 4206.3705$. For further details see p. 224 .

## The Present Value of $£ \mathrm{I}$ per Annum

By similar reasoning we see that the present value of $£^{\text {r per }}$ annum may be obtained from the present value of $£ \mathrm{I}$-that is to say; by a series of additions the present value of $\mathcal{E}$ r per annum can be obtained from the present value of $£ \mathrm{r}$. It may also be obtained by a second method similar to the second method of finding the amount of $£ \mathrm{I}$ per annum from the amount of $£ \mathrm{r}$. Thus the present value of $\mathcal{E}_{\mathrm{r}}$ at the end of 10 years is 67556 , and the difference between this amount and unity is 32444 , which is the present value of 04 per annum for to years. The value of or per annum is one fourth of this amount, which is 0811 . The present value of 1 per annum is 100 times this amount, viz. $8 . \mathrm{II}$, which is seen (p.70) to be the present value of $£ \mathrm{r}$ per annum for 10 years at $4 \%$.

It will be noticed that the present value of $\mathcal{E}^{1}$ per annum for ro years is stated to be 8.11090 , not 8.1 rr . This slight discrepancy is due to the fact that the present value of $£ \mathrm{I}$ is only given to five places of decimals. If we calculate the present value of $£ \mathrm{I}$ due at the end of 10 years at $4 \%$ to six places of decimals instead of five we find that it comes to 675564 . Subtracting this amount from unity we obtain 324436 , which divided by 4 and multiplied by 100 gives us 8.11090 as the present value of $£$ i per annum for 10 years, which is in accordance with the table.

This relation between the present value of $£ \mathrm{r}$ and $£ \mathrm{r}$ per annum may be expressed by the formula

$$
a_{\vec{n}}=\frac{1-v^{2}}{i}
$$

where $a_{\bar{n}!}$ is the present value of $£_{1}$ per annum for $n$ years, $v^{n}$ is the present value of 1 due at the end of $n$ years, and $i$ is the rate of interest.

A knowledge of the methods by which the tables are constructed greatly facilitates their use. Hence in all cases we first describe the construction of the tables and then give some account of the purposes to which they may be applied. See also pp. xviii, 222.

The table giving the present value of $\mathcal{E}$ r per annum is applicable to many different purposes. Thus if we want to know the present value of an annuity, or pension for a definite number of years-the
value, that is to say, of what is called an 'annuity certain,' or the value of a lease, or of any other property yielding a fixed and certain yearly income, we can readily obtain it from this table. Thus a lease, or annuity, yielding $\mathcal{E}^{\mathrm{I}}$ per annum, with 25 years to run, if purchased for $£^{15.62208}$, would yield the purchaser $4 \%$ on his money and replace the capital by the end of 25 years. If the annuity were $£ 10$ a year its value would be ten times as much ; if $£ 20$ a year, twenty times as much, and so on.

We sometimes want to know what rate of interest will be yielded by purchasing an annuity for a given amount at a certain price, which may not be exactly any rate of interest that is here tabulated. In order to ascertain this we must see what an annuity of $\mathcal{E} \mathrm{r}$ per annum would cost at the same price, and then turning to tables at various rates we shall be able to see approximately what rate the investment would yield. Thus, if we buy an annuity of $£ 30$ a year, for 20 years, for $£ 450$ we see that an annuity of $£$ i per annum at the same price would cost $£ \mathrm{I} 5$. A reference to the tables on pp . 64 and 66 shows that this is less than we should pay to yield $2 \frac{3}{4} \%$ on the investment, and more than we should pay to yield interest at $3 \%$; but the return would be more nearly $3 \%$ than $2 \frac{3}{4} \%$ being, in fact, a trifle over $2 \frac{\pi}{8} \%$. It is sometimes convenient to be able to see the results at different rates of interest in this way; consequently on pp . 86-93 abbreviated tables showing the amount and present value of $£_{\mathrm{I}}$ and of $£^{\mathrm{I}}$ per annum are printed. These are only extracts from the tables on pp. 50-85 arranged in a different form with a few other rates of interest added.

## The Present Value of a Perpetuity

On $p .94$ is given the present value of a perpetuity of $£(1$ per annum for every $\frac{1}{8} \%$ up to $10 \%$. These results are obtained by dividing roo by the rate of interest. From this table the value of freehold property, advowsons, \&c., can be obtained, it of course being necessary to ascertain the net annual value of the property on which to base the price to be paid for it. Thus a freehold yielding $£ 80$ per annum, after deduction of all expenses connected with it, would yield $4 \%$, if purchased for $£ 2,000$, for $25 \times 80=2,000$. If the same property were purchased for $£_{\mathrm{r}}, 800$, which is at the rate of $£^{22}$ 10s. (for $1,800 \div 80=22.5$ ) for each $£ 1$ per annum, the yield upon the capital invested would be between $4 \frac{3}{8}$ and $4 \frac{1}{2} \%$.

## Present Value of Reversions

On pp. xxxii-xxxix and $95-98$ is given the present value of a Reversion to a Perpetuity of $£ 1$. On p. 94 we have the present value of a
perpetuity to be entered upon immediately, and on pp. xx -xxxi and $50-85$ we have the present value of an annuity for any number of years from r to roo. By subtracting the present value of an annuity for a certain number of years from the present value of a perpetuity we obtain the present value of a perpetuity deferred for that certain number of years. Thus we see that the present value of a perpetuity of $£ \mathrm{I}$ per annum at $4 \%$ is $£^{25}$ (p. 94). The present value of an annuity of $\mathcal{E}$ r per annum for 20 years at $4 \%$ is $£ \mathrm{r}_{3} 59033$ (p. 70). Deducting this amount from $£^{2} 5$, we have $£_{1 \times 40967}$ as the present value of the Reversion after 20 years of a Perpetuity of $£ \mathrm{r}$, which is the amount given on p . 98 . The present value of a perpetuity of any other amount than $£_{\mathrm{I}} \mathrm{r}$ is obtained by multiplying the value of a perpetuity of $£ \mathrm{r}$ by the amount of the perpetuity the value of which it is desired to obtain.

## Commutation of Fines for Renewing Estates

Estates held in perpetuity are sometimes subject to a renewal fine to be paid by the holder at regular specified intervals. These periodical fines may be compounded for by a single payment down. The first table on p . 99 shows what this payment ought to be, so that the holder of the estate may redeem all these continually recurring fines and at the same time be allowed such interest upon the money thus paid in advance as may be agreed upon. Thus if the renewal fine is payable every 7 years for ever then the redemption money to bear $5 \%$ interest is found by the table to be 2.4564 . This means that $£^{2.4564}$ must be paid to redeem a fine of $£ \mathrm{r}$ payable every 7 years. To redeem a fine that is equivalent to one year's rent a sum equal to 2.4564 times the annual rent must be paid. It is obvious that the redemption money must be that sum the interest upon which, if allowed to accumulate at compound interest at the rate agreed upon for the period between the fines, will just suffice to pay the fine. A reference to p. 74 shows that the amount of $\mathfrak{f}$ r for seven years is $£ \mathrm{f} 407 \mathrm{r}$. Deducting from this amount the original $£_{1}$ invested, we see that the interest on $£^{2}$ invested for 7 years is $£ 407$ ro. If now we multiply $\cdot 40710$ by 2.4564 , the amount required to redeem a fine of $£ x$ payable every 7 years, reckoning interest at $5 \%$, we have $40710 \times 2.4564=\mathrm{x}$. Thus it will be seen that in every 7 years the interest on the redemption money amounts to exactly enough to pay the fine.

## Renewal of any Number of Years Expired in a Lease

The second table on p. 99 and the tables on pp. roo-ro3 show the number of years' purchase for the renewal of any number of years
expired in leases of various length. A reference to p .70 shows that the present value of $\mathscr{E}_{1}$ per annum for 10 years is $\mathscr{L}^{8} 11090$, and on p. 99 we see that the amount to be paid for the renewal of a 10 years' lease is this same sum of $£ 8 \cdot 1$ rogo, which may be read as either $£ 8 \cdot 11090$ for every $£ \mathrm{I}$ of income annually derived from the lease, or as 8.1 rogo years' purchase of the annual income from the lease. But if we own a lease that has, say, 5 years to run and we want to convert it into a lease that has io years to run, it is obvious that we must pay something for the extension of the lease. Reckoning interest at $4 \%$ we have just seen that the value of a lease for ${ }^{1}$ years is $8 \cdot r 10 g o$ times its annual value, and another reference to p. 70 shows that the value of the 5 years' lease we at present possess is $£ 4.45182$ for every $£^{1}$ of annual income; in other words, the value of the 5 years' lease we hold is 4.45 I 82 times the annual value of the lease. Deducting this value of the 5 years' lease we own from the total value of the to years' lease we wish to obtain, we have 3.65908 as the number of years' purchase to be paid for extending our 5 -year lease into a 10 -year lease.

We could obtain the same result from the table on p. 70 showing the present value of $\mathscr{£}_{\mathrm{I}}$ instead of the present value of $\mathscr{L}_{\mathrm{I}}$ per annum. We are obviously entitled to the benefit of the lease for the next 5 years, and the additional benefit we have to pay for by having the lease extended to to years is equivalent to the present value of


This gives us $£ 3.65907$ as the present value of $£ \mathrm{I}$ per annum for the 6 th to the roth years, or 3.65907 years' purchase of the annual value of the lease, and is the same result as we obtained before, except that the last figure is a 7 instead of an 8 , which is due to the number of decimal places to which the calculations were carried not being sufficient to produce absolutely identical results.

The tables referring to the Renewals of any number of years in leases for 20,21 , and 40 years are calculated in the same way, and the renewal of leases for different times, or at other rates of interest than those given on pp. 99-103, may be readily calculated from the present value of $£ \mathrm{r}$ per annum given on pp. $50-85$ by subtracting the present value of $\mathcal{L}^{1}$ per annum for the number of years the lease we own has to run from the present value of $£ \mathrm{r}$ per annum for
the number of years for which the fresh lease will be granted. It will be noticed that the last column in the table dealing with the ro years' lease is headed $17.95 \%$; in the 20 years' lease $12.304 \%$; in the 21 years' lease $1 \times 564 \%$; and in the 40 years' lease $8 \%$.

These rates of interest are respectively equivalent to a fine of $r$ year's rent every $4,7,7$, and 14 years. The extraordinary rates of interest here referred to result from customs that must presumably have originated from ignorance of the real rates of interest involved.

## Yield per cent. and Years' Purchase

The percentage per annum which each number of years' purchase of a perpetuity yields to a purchaser is obtained by dividing 100 by the number of years' purchase. The results are given on p. 104.

## Interest, Amount, and Discount

On p. ro5 are shown the interest, amount, and discount of $£_{\mathrm{r}}$ in a year, and in 9,6 , and 3 months. The interest is calculated annually, and consequently in 9 months it is $\frac{3}{4}$ of the interest earned in a year; in 6 months $\frac{1}{2}$, and in 3 months $\frac{1}{4}$ of the annual iriterest. The 'amount' of $£ \mathrm{r}$ is simply the addition of the interest. to the original $£ \mathrm{r}$. Were the interest to be calculated at other intervals than that of I year the figures here given would be different, as we shall see ( p .18 ) when we come to refer to the question in detail.

Discount is the value at the beginning of a period of the interest to be received at the end-in other words, discount is the interest paid in advance. Thus the present value of $£ \mathrm{I}$ due at the end of a year, reckoning interest at $4 \%$, is $\mathcal{E} 96154$ (p. 70). The value of $£ \mathrm{r}$ now due is, of course, $£ \mathrm{r}$, and the discount is the difference between these two amounts, which is $£ .03846$; that is to say, if we owe an amount of $£ \mathrm{r}$ which is due to be paid one year hence, and, to suit the convenience of a creditor, we pay it twelve months in advance, we ought to be allowed a discount of $£ .038_{46}$; that is to say, we should pay $£^{\circ} 9{ }^{6} 54$ now instead of paying $£ 1$ a year hence. This is obviously fair, since if we invested the $\mathcal{E} 96154$ at $4 \%$ for a year it would at the end of that time amount to the $£$ i we should have to pay.

## Sinking Fund

On pp. ro6-ri5 is given the annual amount to be set aside and invested in order to replace the capital at the end of the selected period. This table is obtained by dividing unity by the amount of one pound per annum, as given on pp. 50-85. Thus, comparing the amount of $£ \mathrm{r}$ per annum at $4 \%$, as given on p .70 , divided into unity with the Sinking Fund in the $4 \%$ column on p. rxz, we have for

$$
\begin{aligned}
& \text { Year } \quad \mathrm{I}, \mathrm{I} \div \mathrm{I} \div 00000=\mathrm{I} \cdot 000000 \text {, } \\
& \text { " } \quad 10,1 \div 12.00611=083291 \text {; } \\
& \text { " } 20,1 \div 29.77808=.033582 \text {; } \\
& \text { " } 30,1 \div 56 \cdot 08494={ }^{\circ} 17830 \text {. }
\end{aligned}
$$

This may be stated the other way about, and we may say that $£ .08329$ r per annum accumulated for ten years at $4 \%$ amounts to $£ 1$, or $083291 \times 12 \cdot 00611=1$.

In this table no provision is made for paying interest on the capital. If this has to be done the amounts given in the sinking fund table must be increased each year by the interest on $\mathcal{E}$. Thus to repay $£ \mathrm{I}$ in ten years, and to pay interest annually at $4 \%$, needs an annual payment of $\cdot 083291+04=123291$. Of this amount 04 pays the interest each year, and 08329 accumulated at $4 \%$ replaces the original $£ \mathrm{I}$ invested.

If we take ${ }^{123291}$ and accumulate it at $4 \%$, we find that in ten years it amounts to $123291 \times 12.00611=1.48024$, which, from p. 70, we find is the amount to which $£ 1$ amounts in ten years at $4 \%$ if the interest on it is allowed to accumulate instead of being drawn annually.

In using this table care must be taken to notice whether the purpose for which it is required calls for interest on the original investment to be paid annually or not. See pp. 225 and 219 .

If the purchaser of a leasehold property wishes to set aside out of the net rent received sufficient to replace the purchase price by the time the lease expires, the table must be used as it stands, the difference between the net rent and the sinking fund constituting the interest on the purchase price of the lease.

If, on the other hand, a loan has to be repaid, say, in to years, with interest at $4 \%$, either the interest on the loan must be paid annually, in addition to the sinking fund as given in the table, or - 04 must be added to the sinking fund for every $£ 1$ borrowed, and allowed to accumulate with it.

If the interest is at $1 \%$ there must be an addition of or to the annual sinking fund for every $£ \mathrm{r}$ borrowed; if at $2 \%$ an addition of $\cdot 2$; if at $5 \%$, of $\circ 5$; if at $10 \%$, of $\cdot x$; and so on.

## Value of Annuity to Yield Interest on Capital at One Rate, and Replace Capital at a Lower Rate

On pp. 116-12If are given the annual payments required to pay interest at comparatively high rates, and to replace the capital by a sinking fund accumulating at a lower rate. From p. io we learn that $£ \cdot 08723$ r per annum at $3 \%$ for 10 years will amount to $£ \mathrm{r}$. But if we have to pay $5 \%$ per annum upon the $£ 1$ we must add $\mathcal{E} \circ 05$ to the sinking fund payment of $£ \circ 08723$ I. These two amounts come to $\mathcal{E} \cdot 137231$, and would suffice, if paid annually for 10 years, to pay $5 \%$ per annum on the original loan of $£ 1$, and to replace the $£ \mathrm{r}$ by accumulation at $3 \%$. 'The present value of this annuity of $£ .13723$ I on these terms as to interest is therefore obviously $£ \mathrm{r}$. But if the value of an annuity of $\mathcal{E}^{\prime 1} 37231$ is $\mathscr{f}^{1}$, the value of an annuity of $\mathscr{L}$ is $\frac{1}{\cdot 13723 \mathrm{I}}=7^{\circ} 287$, which, on reference to p . 120 , we see to be the value of an annuity of $£_{1}$ yielding interest on capital at $5 \%$, and replacing capital when invested at $3 \%$.

These terms are very onerous to the borrower, since he has to pay interest at a high rate on the whole capital for the whole term, although by the accumulation of the sinking fund the capital may be rightly considered as partly repaid.

These tables may be readily extended to other periods and rates of interest by taking the reciprocal of the amount obtained by adding to the sinking fund payment the annual interest on the loan. The reciprocal of a number is obtained by dividing unity by the number.

The value of an annuity of any other amount than $£ \mathrm{I}$ per annum is obtained by multiplying the figures in the table by the amount of the annuity. See also p. 226.

## Nominal and Effective Rates of Interest

On p. 122 is given a table comparing nominal and effective rates of interest. This subject is a somewhat intricate one, but the main principles underlying it may be grasped without much difficulty. Hitherto we have been considering that the rate of interest was calculated annually. We now have to deal with the case of interest calculated half-yearly, quarterly, and monthly. Suppose the nominal rate to be $4 \%$ per annum ; it will obviously be $2 \%$ for 6 months, and at the end of the first half-year an original investment of $£_{\mathrm{I}}$ will amount to $£_{1} \cdot 02$. For the second half-year interest at the rate of $2 \%$ for every 6 months is now earned upon $£ \mathrm{r} \cdot{ }^{\circ} 2$ instead of upon only $£ \mathrm{I}$. This brings the amount of the original investment at the end of the second half-year to $£ r \cdot 0404$ instead of
to only $£ \mathrm{r}^{\circ} 04$, which is the amount it would have been if the interest had been calculated annually instead of half-yearly. A reference to p. 58 will show that this is the amount that $£_{1}$ amounts to in 2 years at $2 \%$. Hence we see that if we want to calculate interest at more frequent intervals than 1 year we can divide the nominal rate of interest by the number of periods (at which interest is to be calculated) that are contained in a year, and take the interest for this number of years at the resulting rate of interest. In other words, we see that instead of talking about years we can talk about periods, and if we want to talk about interest that is nominally $4 \%$ per annum, but really $2 \%$ for 6 months, or if convertible quarterly $\%$ for 3 months, we may turn to a $2 \%$ table and look at the result after 2 periods and a $1 \%$ table to find the result after 4 periods. Thus on p. 50 we see that $£ \mathrm{r}$ accumulated for 4 periods at $\mathrm{r} \%$ amounts to $£ \mathrm{r} \cdot 0406$, the interest being $£ .0406$, which is the effective annual rate when interest is convertible quarterly, shown on p. 122 as corresponding to a nominal annual rate of $4 \%$. The same thing holds if interest is convertible monthly. The amount of $£ \mathrm{r}$ accumulated for 12 periods, whatever their length, at $\frac{1}{2} \%$ per period, would amount to $£ \mathrm{r} \cdot 061678$, and ${ }^{\circ} 061678$ is shown on p. 122 to be the effective annual rate when interest is convertible monthly, if the nominal rate is $6 \%$ per annum. The lower part of the table is the converse of the upper. If the real or effective rate is $4 \%$ per annum the nominal annual rate, when interest is convertible half-yearly, is $\mathcal{E} \cdot \circ 39608$, or - 019804 per half-year. Thus $£ \mathrm{r}$ for 6 months at or $9804 \%$ per 6 months amounts to $£ \mathrm{r}$-org804. During a second period of 6 months this amount at the same rate of interest earns $\mathcal{£}$ ozor96, which added to the $£$ rorg804 makes up $£$ ro4, which is equivalent to the amount of $£ \mathrm{I}$ at an effective annual rate of $4 \%$. The higher the rate of interest and the more frequently the interest is convertible the greater is the difference between the effective and the nominal rates. See Preface to 26th Edition.

## Annuities Payable Half-yearly, Quarterly, and Monthly

If we are entitled to receive an annuity of $£$ I per annum, payable yearly, but, instead of receiving it annually, receive it every 6 months, we obviously receive the amount of the half-yearly payment sooner than we are entitled to; and if that half-yearly payment were invested for 6 months, the 2 half-yearly payments, together with this 6 months' interest on one of them, would amount to more than the annual payment to which we are entitled supposing the halfyearly payments were exactly half the yearly payment. That is to say, if the annuity to which we are entitled annually $i s$ divided into 2 , or

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4, or 12 equal parts, and paid half-yearly, quarterly, or monthly, its capital value is greater than if the annuity were paid annually. As a concrete instance of this we have, on p. 123, the value of an annuity of $£ 1$ per annum for 25 years at $4 \%$. If the annuity is payable annually and the interest convertible annually, the present value or the annuity is $£ \times 5.62208$, which is the figure given for its value on p. 70 , as also on p. 123. To find the value of an annuity of 10 . every 6 months for 25 years at $4 \%$ we multiply $£_{15.62208}$ by 1.0099 , the factor given in the upper table on p. ${ }^{2} \mathbf{2 3}$. This gives us ${ }^{15}{ }^{\prime} 77677$ as the value of an annuity of ros. every 6 months for twenty-five years, reckoning interest at $4 \%$ per annum.

Similarly an annuity of $£ \mathrm{I}$ per annum payable quarterly-that is, 5 s. every three months-is worth $15.62208 \times{ }_{1} \cdot 01488$, or $£ 15 \cdot 85449$. The value of an annuity payable monthly is calculated on similar principles, the constant factor by which to multiply the value of the annuity payable yearly being $1 \circ 0182$.

If the interest is convertible half-yearly, and the annuity payable half-yearly, we can obtain the value of the annuity from the tables on pp. $50-85$, by considering that we have an annuity of one-half per period for 50 periods at $2 \%$ instead of an annuity of 1 for 25 periods at $4 \%$. A reference to $p .58$ shows us that the present value of $£_{1}$ per annum for 50 periods is $£ 31.42361$, the half of which is $£_{15 \% 7180,}$ which is the value given in the middle table on p .123 for an annuity payable half-yearly when the interest is convertible half-yearly. Similarly an annuity of $5 s$. every three months at $4 \%$ per annum convertible quarterly, which is $1 \%$ every three months, is $\frac{1}{4}$ of $£_{6} 6.02888$, which on p . 51 is seen to be the amount of $£ \mathrm{r}$ per annum for 100 periods at $1 \%$. Now $£ 63 \cdot{ }^{\circ} 2888 \div 4=$ $£^{15} 757^{22}$, which on p .123 is seen to be the value of an annuity for 25 years at $4 \%$ payable quarterly, with interest convertible quarterly.

This subject is dealt with and the appropriate formulæ given in the 'Theory of Compound Interest and Annuities' by Fédor Thoman.*

## Present Value and Discount

The bottom table on p .123 gives to 9 places of decimals the present value of $£_{1}$ due one year hence, which has already been given to fewer places of decimals on pp. 50-85, and explained on p. 10. The discount has been given for most rates of interest, but fewer places of decimals, on p. 105, and explained on p. 16. No further explanation is therefore necessary here, but for some pur-

[^1]poses it is convenient to have these items calculated with greater approach to accuracy, as is here done.

## Time in which an Amount Doubles at Interest

On p. 124 is stated the number of years in which an amount is doubled at simple and compound interest. At simple interest all we have to do is to divide roo by the rate of interest ; thus, $£ \mathrm{roo}$ at $4 \%$ yields $£ 4$ per annum, and dividing roo by 4 we obtain 25 years as the time it will take for the interest to amount to the same as the principal, or, in other words, double the principal.

At compound interest we obtain the number of years in which the interest will amount to the capital approximately by dividing 69 by the rate of interest, and still more nearly by dividing 693 by the rate of interest and adding 35 to the result. Thus $\frac{693}{\circ}+35=$ i $3 \cdot 86+35=14 \cdot 2 \mathrm{I}$.

## Decimals of One Year

On p. 124 are given the decimals of r year, representing various numbers of weeks, months, and days. From what has been said on p. 7 it will readily be apparent how these figures are arrived at. There being 52 weeks in a year, 13 weeks, for example, is obviously $\frac{13}{5^{2}}$ of a year. To convert the fraction $\frac{13}{5^{2}}$ into a decimal we divide
$\mathrm{r}_{3}$ by 52 and find that it goes 25 times. We assume the year to contain exactly 52 weeks, exactly 12 months, and exactly 365 days, the consequence being that though the figures given are right for practical purposes they are not entirely accurate. There are more than 52 weeks and more than 365 days in a year, while no calendar month is exactly $\frac{1}{12}$ of a year.

If we meet with the decimal of a year different from any given in the table, and desire to know how many weeks, or months, or days it corresponds to, we must multiply by 12 to get the answer in months, multiply by 52 to get the answer in weeks, and multiply by 365 to get the answer in days.

## Decimals of $£ \mathrm{I}$

On pp. ${ }^{125-128}$ is given the decimal corresponding to every farthing in the $£ \mathrm{r}$. The first and last columns on each page give
the pence and farthings up to $1 \frac{3}{4} d$. , while at the top of each of the other columns the shillings are stated to which the figures in the columns refer. Thus if we wish to know the decimal corresponding to 4 s . 3 d . we look in the column marked 4 s . on the line marked 3 d ., and find that the required decimal is $\mathscr{E} \cdot 21250$. Again, if we want the decimal corresponding to 13 s. $7 \frac{1}{4} d$. we look on p . 127 , column ${ }^{1} 3$ s., line $7 \frac{1}{4} d$., and find the required decimal to be $£ \cdot 68021$. To obtain these results we must first convert the farthings into the decimal of a penny, then the pence and decimals of a penny into the decimal of a shilling, finally the shillings and decimals of a shilling into the decimal of a pound. Thus in the example we have just taken of I 3 s. $7 \frac{1}{4} d$.

$$
\begin{aligned}
& \text { One farthing }=\frac{1}{4}=25 \text { of a penny, } \\
& 7.25 \text { pence } \quad=\frac{7 \cdot 25}{12}=6042 \text { of a shilling, } \\
& { }^{1} 3.6042 \text { shillings }=\frac{13.6042}{20}=.68021 \text { of a pound, }
\end{aligned}
$$

which is the result given in the table.
To find the number of shillings, pence, and farthings corresponding to a given decimal we have only to look for the decimal nearest to the one we are dealing with, which is easily found in the table, as the decimals come in regular order throughout.

To calculate the shillings, pence, and farthings corresponding to a given decimal we have only to carry out the converse of the process just described, multiplying first by 20 to get the shillings and decimals of a shilling, then multiplying the decimal part of a shilling by 12 to get the pence, and multiplying the decimal part of the penny by 4 to get the farthings. Thus :

$$
\begin{aligned}
& .6802 \text { I of a } £ 20=13.6042 \text { shillings } \\
& .6042 \text { of a shilling } \times 12=7.25 \text { pence } \\
& .25 \text { of a penny } \times 4=1 \text { farthing }
\end{aligned}
$$

It will be convenient to remember that $1 s$. is 05 of a $£, 2 s$. is ${ }^{-}$I of a $£$, and every even number of shillings is expressed by half the number with a decimal dot to the left of it. Thus $4 s .=£(2,12 s$. $=£ \cdot 6$, and so on. In the same way an odd number of shillings is always represented by a decimal ending in 5 , and is half its own amount. Thus 5 s. $=£ .25$ of a $£ ; 9$ s. $=£ 45$, and so on.

The figures in the column headed o shillings on p. 125 may be conveniently studied, for it will be seen that the last four of them are repeated exactly in all the columns headed with an even number of shillings, while in the columns headed with an odd number of
shillings the last three of them are repeated exactly, and the figure in the second decimal place is in every instance increased by 5 . Familiarity with the figures in this first column, especially those relating to an exact number of pence, when combined with the rule just referred to relating to shillings, will enable any one with a little practice to know the number of shillings and pence represented by a given decimal as readily as if the shillings and pence were actually written down, and conversely the decimal corresponding to any number of shillings and pence will be at once known without any calculation being consciously made.

## MORTALITY TABLES

On pp. 130-1 $3^{6}$ certain statistics are given concerning the duration of human life. On pp. 130-131 the expectation or average duration of life is stated according to various mortality tables.

The first table mentioned is the Northampton, prepared by Dr. Price in ${ }^{1780}$. This table for many years after its publication was much used, and many calculations based upon it are retained in the present volume. It contains, however, a great many serious defects, and its use for transactions on a large scale as a guide to the duration of Life has long since been abandoned.

The Carlisle Table, published in 1815 , was greatly superior to the Northampton, and may still be used with advantage in many transactions in which the duration of life is concerned. The Experiences of the Equitable Society and of Seventeen Offices, published in 1834 and 1843 respectively, deal with assured lives, but are of less importance in connection with the valuation of life interests of all kinds than either the Carlisle or the Actuaries' Healthy Males Table. The English Experience (No. 3) is a very valuable table, dealing with the mortality recorded by the RegistrarGeneral, and is the most reliable for questions of mortality among the general population. The Actuaries' Healthy Males Table, published in 1869 , is the most reliable record of assured lives, and is the result of the experience accumulated by a large number of life offices. It is the best record of mortality among this class of people-that is to say, among people who have been subjected to a medical examination before going under observation, but who have since lived the ordinary lives of middle-class English people.

Another table of considerable importance in connection with annuity transactions is the Government Annuitants, in regard to which some information will be given later on.

The fundamental facts to be learnt from a life table are the
number living at the beginning of each year and the number dying during the year. When this information is available it is easy to calculate the probable number out of every 100 alive at the beginning of the year who will survive the year and who will die during the year ; the percentage surviving and dying in each year together adds up to 100, as may be seen in columns 4 and 5 on pp. 134 and 135 . The expectation of life given on pp. 130 and 13 r shows the average duration of life among a large number of people, and is determined by dividing the total number of years that a given number of people will live by the given number of people under observation. Thus, if we examine the table on p. 135 , from age 90 we see that of $\mathrm{t}, 460$ living at age 90

| 1,052 | reach | the age of | 91 |
| ---: | ---: | ---: | ---: |
| 723 | $"$ | $"$ | 92 |
| 469 | $"$ | $"$ | 93 |
| 274 | $"$ | $"$ | 94 |
| 135 | $"$ | $"$ | 95 |
| 49 | $"$ | $"$ | 96 |
| 9 | $"$ | $"$ | 97 |
| 2,711 |  |  |  |

Adding together the number who survive to the different ages, we find that the 1,460 people with which we commenced live between them 2,711 complete years; and, dividing this number by $\mathbf{1}, 460$, we get an average of $\mathrm{r} \cdot 857$ complete years as the duration of life of each of the 1,460 people whom we commenced to observe at the age 90 . This, however, considers only the entire years that are survived; lives that live to 9 r years and in months are treated as if they only lived to 9 I . It is, however, much more likely that the deaths will be fairly evenly distributed throughout the year, and they may, therefore, be reckoned as happening in the middle of each year.

In these figures, therefore, we are reckoning that each one of the lives under observation would live six months less than would actually be the case, and if we add this hall-year to the 1.857 years, we arrive at 2.357 , which is the average expectation of life given in the $\mathrm{H}_{\mathrm{m}}$ column on p. izi.

We sometimes hear of the Curtate (or cut short) expectation of life, which means the number of complete years of life which people of the given age may, on the average, expect to live ; the Curtate expectation of life at age 90 is the 1857 years, which we obtained above, and it is always half a year less than the complete expectation of life given on p. 131 .

The expectation of life cannot properly be used in calculations
with which interest is concerned, for the reasons to be given hereafter (p. 26) ; nor can we learn from the expectation anything about the probable duration of life of any individual. It is, however, a remarkable fact that, while the time at which any individual will die is uricertain in the extreme, the average duration of life among large numbers of people is very uniform. The expectation of life should also be distinguished from the Vie Probable, or probable lifetime. This means the number of years that have to elapse before exactly half the number of people alive at a given age have died. Thus from the table on $p .135$ we find that 51,373 people are alive at age 64. By age 75 we find that only half this number survives, the other half having died in the meantime. The Vie Probable at age 64 is therefore the difference between 64 and 75 , viz. II years.

## Mortality of Single Lives and Interest

The tables on pp. ${ }^{1}{ }^{38-1} 54$ are concerned with single lives and interest. They give the values of annuities and the single and annual payments to secure $£ \mathrm{r}$ at death, together with the values of reversions.

## Values of Annuities

The tables that are in many ways the most important are those which give the values of annuities to be received annually throughout the lifetime of the person of the age stated. In every case, unless specially mentioned as being otherwise, an annuity means an annual payment of $£ \mathrm{I}$, or of course $\$ 1$, or any other unit, the value being given in pounds if the annuity is $£ \mathrm{I}$, in dollars if the annuity is $\$ \mathrm{I}$, and so on. Annuity values derive their importance not merely from the immediate use that may be made of the table, but also from the facility with which other benefits dependent upon the duration of life may be derived from them. It is therefore worth while to explain in some detail how the annuity values may be determined. If we know that I year hence we have to pay $£ \mathrm{I}$, reckoning interest at $3 \%$, we can tell from p. 66 that we must have $£ .970874$ in hand now in order to possess $£^{1}$ in a year's time, while, according to the Carlisle Table on p. 136, we see that out of 30 people alive at age 95 seven will die during the year, and that consequently there will be 23 people alive I year hence to receive $£ \mathrm{I}$ each, assuming we have contracted with the 30 people to pay each of them $£ \mathrm{r}$ per annum as long as they are alive. In order to make this first payment to our annuitants we must therefore have 23 times $£ .970874$, viz. $£ 22.330102$, and so on in succeeding years, as set out in the following table :-

Table Showing the Value of an Annuity of $£ 1$ per Annum payable at the End of the Year to each Survivor of $\mathbf{3 0}$ Persons, Age 95

| Vear | Number living at End of Year | Present Value of $\notin$ due at End of Year | Present Value of $£_{I}$ to each Survivor |
| :---: | :---: | :---: | :---: |
| 1 | 23 | ${ }_{970874}^{L_{0}}$ | $\stackrel{t}{22 \cdot 3301}$ |
| 2 | 18 | $\cdot 942596$ | 16.9667 |
| 3 | 14 | -915142 | 12.8120 |
| 4 | 1 I | . 888487 | 9.7734 |
| 5 | 9 | -862608 | 7.7635 |
| 6 | 7 | -837484 | $5 \cdot 8624$ |
| 7 | 5 | -813091 | $4 \cdot 0655$ |
| 8 | 3 | ${ }^{7} 789491$ | $2 \cdot 3685$ |
| 9 | 1 | '766417 | $\cdot 7664$ |
| Total | ... | ... | $82 \cdot 7085$ |

Total const of 30 annuities, $£ 82 \cdot 7085$.
Cost of 1 annuity, $£ 82 \cdot 7085 \div 30=£ 2 \cdot 75695$.
From this we see that, assuming mortality to occur according to the Carlisle Table, we need to have $£ 82 \cdot 7085$ in hand now, and to be able to earn interest upon it at $3 \%$ in order to pay an annuity to each of 30 people at present age 95 . If this is the value of $3^{\circ}$ annuities, the value of i annuity is $\mathscr{f}^{2} 75^{\circ} 695$, or, stated to the nearest third decimal, $£_{2} \cdot 757$ as given in the $3 \%$ column on p. 141 .

The advanced age of 95 was chosen as an illustration, in order to avoid the lengthy table required to illustrate the value for younger ages. It will be noticed that it is necessary to proceed year by year up to the end of the mortality table. It is not correct, as is sometimes supposed, to take the average duration of life and then see the present value of $\mathcal{E} \mathrm{I}$ per annum for that number of years. Thus, according to the Carlisle Table, the average duration of life at age 35 is $3^{1}$ years. If we take the present value of $\mathcal{E}_{1}$ per annum for 31 years from the tables given on pp . 66-80, and compare them with the annuity values on p . 140, we have the following results :-

| Rate of Interest | Value of Annuity according to |  | $\begin{aligned} & \text { Error } \\ & \text { in Excess } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
|  | Expectation | Table, p. 140 |  |
| $\begin{aligned} & \text { Per Cent. } \\ & 3 \end{aligned}$ | $20 \cdot 000$ | ${ }_{18.433}$ | $\stackrel{6}{\text { I }} 567$ |
| 4 | 17.588 | 16.04 I | I. 547 |
| 5 | 15.593 | 14.127 | 1.466 |
| 6 | 13.929 | 12.573 | - 356 |
| 7 | 12.532 11.350 | 11 10.295 | I. 237 |
| 8 | $11.35^{\circ}$ | 10.235 | $1 \cdot 115$ |

If interest had not to be considered, the value of an annuity could correctly be obtained from the average duration of life, since if, say, 100 people at age 35 live 3,100 years between them we must obviously have $£ 3,100$ to pay them $£$ r per annum during life. But when the accumulation of interest comes in we can no longer base our calculations upon the expectation of life, even with the use of an interest table, without getting, as shown above, erroneous results.

In these tables no provision is made for any expenses connected with the granting of annuities, such as has to be provided in the case of life assurance companies who grant them. Although the word annuity is used throughout the tables, the tables of course apply to income derived from any source, whether ordinarily called an annuity or not. Thus, suppose we wish to ascertain the value of a life interest derived from trust funds, or from a lease dependent upon the duration of life, these tables of annuity values of course apply.

Private individuals who use these tables for the purpose of dealing with annuities must remember that dealing with only a few lives is a very speculative transaction. A purchaser may buy a life interest to-day, and the life on whose duration the income depends may die to-morrow, and the bargain prove a bad one, or may live an abnormally long while, and the bargain prove a good one; so that no tables can give any idea of the value of an annuity on only one life. They give correctly the average value of annuities on many lives, and where many lives are concerned are a reliable guide. This is a point that should always be borne in mind by people dealing in life interests of any kind on a small scale.

On pp. 142 and 143 the values of annuities are given according to the Healthy Males Table published by the Institute of Actuaries. These are not the most suitable tables to use for determining the value of an income for life considered by itself, but they are the best tables for many other purposes, and the annuity values are very convenient for calculating the values of other benefits.

On pp. 144 and 145 annuity values are given according to the experience of Government annuitants. These tables are at present the most reliable guide to the average value of annuities. It is well known that annuitants live long, and consequently tables that correctly record the mortality experience of annuitants are not usually appropriate for determining the value of assurance, and vice versa. Several very heavy losses have been made in times past by this now most obvious fact having been overlooked.

## Single and Annual Payments to secure $£ \mathrm{I}$ at Death

On pp. 146-151 the single and annual payments to secure $£ \mathrm{I}$ at death are tabulated. There is a very close connection between these

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items and the values of annuities. Advantage is taken of this connection to derive the values of assurances from those of annuities by means of Premium Conversion Tables, such as are given on pp .185 and r86, in describing which this connection is explained (p. 35). For the moment it will be sufficient to notice that the single payments to secure $£ \mathrm{I}$ at death can be readily obtained from the annuity values, pp. 138-145, by means of conversion tables, and the annual payments to secure $£ \mathrm{r}$ at death can also be obtained from the same pages. For details see pp. 35-39.

## Value of Reversions

If we wish to know the average value of the reversion to a sum of money on the death of a person of a given age we can at once obtain it by multiplying the single payment to secure $£_{\mathrm{I}}$ at death by the sum in question. If, however, we wish to know the value of a reversion to a perpetuity-that is to say, to a perpetual income such as may be derived from freehold property-it is convenient to proceed somewhat differently. On p. 94 we have the present value of a perpetuity to be entered upon at once, but if it is not to be entered upon until the death of a person of a given age it is obviously worth less than if we were to obtain possession at once. The difference between the present value of immediate and of deferred possession is the present value of the benefit the existing holder will receive from it ; in other words, the difference between the value of immediate and of deferred possession is the value of an annuity on the life of the present holder. Thus at $4 \%$ the value of a perpetuity with immediate possession is $£ 25$. The value of an annuity at age 50 according to the Carlisle Table is $£ 12.86$, so that the value of a perpetuity to be entered upon at the death of a person of age 50 , according to the Carlisle Table at $4 \%$, is $25^{\circ} 000-12.869=12.13 \mathrm{I}$, which is the amount given on p. 154. Hence it appears that to obtain the present value of the reversion to a perpetuity at the death of a person of a given age we must deduct the value of an annuity during the life of that person from the value of a perpetuity to be entered upon immediately, as given on p. 94.

The present value of reversions of this kind are given at considerable detail on $\mathrm{pp} .{ }^{1} 5^{2}$ and ${ }^{1} 53$, according to the Government Experience Table, because this is on the whole the most reliable table for the purpose. The values according to other tables and for other ages may readily be obtained by the simple rule just stated.

## Two Lives and Interest

The tables on pp. 156-181 deal with various benefits that are dependent upon the duration of one or both of two lives. In such cases it is necessary to distinguish carefully in what way the lives enter into the question. We sometimes have to deal with joint lives, in which case an annuity is payable so long as both lives continue and ceases at the end of either of them, or in the case of joint life assurance the sum is paid on the occurrence of the first death. Then we have benefits such as annuities or assurances dependent on the duration of the longer of the two lives; that is to say, an annuity payable to the last survivor continues so long as either of the two people concerned is alive, or in the case of assurance the sum assured is paid at the death of the second of the two. Yet again we have Contingent Survivorship benefits, such as the assurance of a sum of money to be paid at the death of X , if Y is living when X dies, nothing being paid in the event of Y dying before $\mathbf{X}$.

## Joint Life Benefits

We will deal first with the values of annuities payable during the joint life of two persons-payable, that is to say, so long as both persons are alive, and ceasing when either of them dies.

We have already explained on p. 26 how the value of an annuity can be calculated if we know the probable number out of every 100 alive at the beginning of a year who will survive to the end of the year, and we must now explain how to ascertain this probability in regard to pairs of lives as distinguished from individual lives, with which we were formerly dealing. We may use in illustration the Healthy Males Mortality Table given on pp. 134 and 135, taking one life at age 30 and the other at age 60 . The probability that a life aged 30 will survive one year is seen to be 99.2277 out of every 100 , and that of a life aged 60 is 97.0322 out of 100 . If we multiply these two probabilities together, we obtain the probability of both persons surviving the year, which works out at $96 \cdot 283$ out of roo. We can deal with successive years in the same way, and so make a fresh Mortality Table for pairs of lives instead of for individuals. Such a table for ten years is given below for two lives aged respectively 30 and 60 at the time they came under observation :-

| Younger Life |  | Elder Life |  | Pairs of Lives |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Age | Probable Number out of every 100 who survive the Year | Age | Probable Number out of every 100 who survive the Year | Probable Number out of every 100 who survive the Year | Number of <br> Pairs living a <br> Beginning of each Year |
| (1) | (2) 9092277 | ${ }^{(3)}$ | ${ }_{97}{ }^{(4)}$ | ${ }_{96}{ }^{(5)} 283$ | (6) 10,000 |
| 30 31 | $99 \cdot 2277$ 99.2083 | 60 | 97.0322 96.7962 | ${ }_{96} 9683$ | 10,000 9,628 |
| 32 | $99 \cdot 1895$ | 62 | 96.5364 | 95.754 | 9,246 |
| 33 | 99•1715 | 63 | 96.2510 | 95.454 | 8,853 |
| 34 | 99•1496 | 64 | 95.9590 | 95•143 | 8,451 |
| 35 | 99-1226 | 65 | 95.6569 | $94 \cdot 818$ | 8,040 |
| 36 | 99.0891 | 66 | 95.343 I | 94.475 | 7,624 |
| 37 | 99.0536 | 67 | 95.0111 | 94.112 | 7,203 |
| 38 | 99.0220 | 68 | 94.6766 | 93.751 | 6,778 |
| 39 | 98.9918 | 69 | 94.2660 | 93.316 | 6,355 |
| 40 | - | 70 | - | - | 5,930 |

The probable number of individuals who will survive out of every hundred at each age is given in column 4 on pp .134 and 135, and by multiplying together the fractions obtained by putting these numbers as numerators and roo as denominators we obtain the probability that a pair of lives of these ages will survive one year.

The first column gives the age of the younger life and the third column the age of the elder life, and the details given in columns 5 and 6 refer to pairs of lives of the ages given in columns 1 and 3 . Columns 2 and 4 are copied from the mortality table on pp. 134 and 135. In column 5 we have the probable number out of every 100 pairs of lives who survive the year. This is obtained for ages 30 and 60 by multiplying $\frac{99^{\circ} 2277}{100} \times \frac{97^{\circ} \cdot 322}{100}$, which equals $\frac{9628.3}{10000}$ as the probability for each pair, or 96.283 pairs per roo. The details for other years are obtained in the same way. The last column gives the number living at the beginning of each year out of every ro,000 pairs alive at the commencement. This corresponds to column 2 of the mortality table on pp. 134 and 135. By multiplying the number living at one pair of ages by the probability of surviving one year we obtain the number living at the commencement of the next age. Thus :-

$$
\begin{aligned}
10000 \times \frac{96 \cdot 283}{100} & =9628 \\
9628 \times \frac{96 \cdot 03}{100} & =9246
\end{aligned}
$$

and so on throughout.

If the above table were continued till one or other member of all the pairs of lives had ceased to exist, we could determine the value of joint life annuities in the same way as we calculated the values of annuities on single lives on p. 26 . Joint life annuity values are given on pp. ${ }^{156-165}$ according to the Northampton, Carlisle, Government Experience (1883), and Institute of Actuaries, Healthy Males Tables. For the most part they are given at every five years of age for both lives. To give them for every year of age would take up a great deal of room. They may, however, be found for every year of age, according to the Government Experience, in 'Joint Life Annuity Tables,' published by the Institute of Actuaries; according to the Healthy Males Table in the 'Institute of Actuaries Life Tables;' and according to the Carlisle Table in 'Jones on Annuities.'

The single payment to secure $£ \mathrm{r}$ at the cessation of the joint life-that is to say, at the death of either of two lives-is given according to the Northampton, Carlisle, and Healthy Males Tables on pp. 166-169. The figures in these tables may readily be found by means of conversion tables from the tables of joint life annuities, as already mentioned and as hereafter explained. By the use of these tables the annual payments during the joint continuance of two lives to secure $£ 1$ at the first death can also be obtained by inspection by the use of conversion tables. They are given according to the Institute of Actuaries Table on p. 170.

## Survivorship Benefits

On pp. 171-173 are given the values of annuities during the continuance of either of two lives. These differ from the joint life tables just considered, inasmuch as joint life annuities are payable only so long as both persons exist, and the last survivor annuities are payable so long as either of the two persons lives. If we have tables of joint life annuities and of single life annuities we can readily find the values of annuities payable during the continuance of either of two lives.

If we undertake to pay $£ 1$ per annum to each of two lives we can tell the value of that undertaking from the single annuity values given on pp. ${ }^{138-145 .}$ Suppose the lives to be 30 and 60 , then the value of the annuity on the life aged 30 by the Carlisle Table at $3 \%$ is $£ 19.556$, and on the life aged $60 £ 10 \cdot 49$, the value of the two together being $£ 30^{\circ} 047$. To pay these annuities would involve paying $£^{2}$ per annum so long as both persons were alive, and $£ \mathrm{r}$ per annum to the survivor of the two. But the annuities we are now considering, those given on p. 172, only require £1 per annum to be paid during the joint continuance of the two lives, and
$\mathcal{L}^{1}$ per annum to the survivor of the two. The difference between these two arrangements is, therefore, $£ 1$ per annum during their joint lives, and from the joint life annuity tables on p. 157 we know the value of this to be $£ 9.529$. Hence we get the rule that to find the value of an annuity on the survivor of two lives we must take the value of an annuity on each of the single lives, and deduct from the sum of these two the value of an annuity on the two joint lives. Thus according to the Carlisle Table at $3 \%$ the value of an annuity


In this way survivorship annuities for other ages and by other tables than those given on pp. 171-173 may readily be arrived at.

The single payment to secure $£_{\mathrm{I}}$ at the death of the last of two lives is given on pp . 174-176. These amounts, like so many others, may be at once obtained by means of premium conversion tables.

The same remark applies to the annual payments to secure the same benefit, which are given on p. 177, it being noted that the annual payments have to be continued during the continuance of either of the two lives.

## Reversions to Perpetuities

On p. 178 the values of the Reversion to a Perpetuity on the death of the first and on the death of the last of two lives are given. It has already been explained ( p .28 ) how the value of a reversion to a perpetuity on the death of a single life may be obtained. Where two lives are concerned the process is exactly the same. Thus at $4 \%$ the value of a perpetuity to be entered upon immediately is (p.94) $£^{25}$; the value of an annuity during the joint continuance of two lives, each aged 6o, according to the Healthy Males Table at $4 \%$, is $£_{6}^{6} 779$. Deducting this amount from the previous one we have $(25.000-6.779=) £ 18.221$, which is the amount given in the upper table on p. 178.

Similarly the value of an annuity during the continuance of either of two lives, each age 60 , is, according to the Healthy Males Table at $4 \%$ (p. 173), $£_{12.139 . ~ D e d u c t i n g ~ t h i s ~ f r o m ~ t h e ~ v a l u e ~ o f ~ a ~}^{\text {a }}$ perpetuity to be entered upon immediately, we have ( $25^{\circ} 000-$ $12.139=$ ) 12.861 , which is the amount given in the lower table on p. 178.

## Reversionary Annuities

In the upper table on p. 179 we have the value of an annuity during the life of $y$ after the death of $x$. Thus, suppose a father to be age 45 and his son to be age 20 , this table tells us the present value of ${ }_{e}$ the annuity to be entered upon by the son on the father's death and to continue during the time that the son survives the father. The value of the annuity on the son's life only is, by the Carlisle Table at $3 \%$ (p. 140), £21.694. The joint life annuity is (p. 157) $£ 14.207$; the difference between the two is $£ 7.487$, which is the amount given on p . 179 as the value of an annuity during the life of $y$ aged 20 after the death of $x$ aged 45 .

Owing to the facility with which this calculation can be made it is not worth while to give in the tables more than a few examples of the results.

In the lower table on p. 179 we have the value of an annuity during the life of $y$, who is to be nominated at the death of $x$. In the preceding case $y$ is supposed to be alive now, and there is, of course, the possibility that he may die before $x$, with the result that he would never come into the annuity at all. In the present case, however, we have the certainty that $y$ will be alive at the death of $x$. Thus, suppose we wish to ascertain the value of a next presentation to a living, we may take the age of the person to be presented at 25 , and suppose the present incumbent to be 45 ; then the problem is to find the value of an annuity on the life of a man aged 25 who is to be nominated at the death of a man aged 45. According to the Carlisle Table at $3 \%$, the present value of $£ 1$ to be received at the death of a man aged 45 is (p. 146) $£ 50885$, and the value of an annuity on a life aged 25 is (p. 140) $£ 20 \cdot 665$. This, however, is the value of an annuity the first payment of which has to be made one year after purchase, but it is here supposed that the annuity is to be entered upon immediately, so that the first annuity payment of $£^{1}$ must be added to the value of the annuity on the life aged 25 , making it 21.665 . The present value of this sum, payable at the death of a life aged 45, is therefore $21.665 \times 50885=11.024$, which is the amount given on p. 179 as the value by the Carlisle Table at $3 \%$ of an annuity during the life of $y$, aged 25 , who is to be nominated at the death of $x$, aged $45, y$, of course, being supposed to enter on the annuity immediately after the death of $x$. In using a next presentation to illustrate the point it is not implied that next presentations can now be sold. It may, however, at times still be useful to calculate their value, while in connection with appointments, leases on lives, and certain other kinds of property it may be convenient to know how to calculate the values of annuities on successive lives.

## Contingent Assurances

On pp. 180 and 18 I we have the single payments to secure $£_{1}$ at the death of $x$ provided he dies before $y$. This is a somewhat more complicated matter to calculate than any that we have dealt with previously. To obtain it we must take the single premium for joint life assurance on the two lives, and add to it the value of an annuity on two joint lives, one a year younger than $x$, the other of the age of $y$, divided by the probability of a life one year younger than $x$ living one year. Then take the value of an annuity on two joint lives, one the age of $x$, the other one year younger than $y$, divided by the chance of a life one year younger than $y$ living one year, subtract this result from the former result, and divide by 2. This process may be more clearly apprehended by the following formula and example:-

$$
\mathrm{A}_{x y}=\frac{1}{2}\left(\mathrm{~A}_{x y}+\frac{a_{x-12}}{p_{x-1}}-\frac{a_{x: y-1}}{p_{y-1}}\right),
$$

vhere $A_{x y}=$ the single premium for an assurance on the life of $x$ provided $y$ be then alive.
$\mathrm{A}_{x y}=$ the single premium for an assurance payable at the first death of $x$ or $y$.
$a_{x: y}=$ the value of a joint life annuity on $x$ and $y$.
$p_{x}=$ the probability of a life age $x$ dying within a year.
As an example let $x=30$ and $y=50$, and let us emplo; the Healthy Males Table with interest at $3 \%$. Then :

$$
\begin{aligned}
& \mathrm{A}_{x y}=\mathrm{A}_{30 \cdot 50}=\left(\mathrm{see} \mathrm{p} . \text { r }^{68}\right) \quad .6077 \\
& \frac{a_{x-\mathrm{x}: y}}{\not p_{x-\mathrm{I}}}=\frac{a_{29: 50}}{p_{29}}=\frac{12.5147}{992567}=12.6084 \\
& \text { By addition }=13.2161 \\
& a_{x: 1 \mu-\mathrm{x}}=\frac{a_{30: 49}}{p_{y-1}}=\frac{12.7333}{984780}=12.9301 \\
& \text { By subtraction }=0.2860 \\
& \text { Divided by } 2=0.1430=A_{x y}
\end{aligned}
$$

which is the amount given on p. 181.
In the above example the values $p_{x-1}$ or $p_{29}$ and $p_{y-5}$ or $p_{49}$ are found on P. 134, and of $\mathrm{A}_{x y}$ on p. 168. The values of $a_{x-x: y}$ and $a_{x: y-1}=a_{29 \cdot 5_{0}}$ and $a_{z v^{*} 4,9}$ are not given in this book.

## ANNUITIES ON THREE LIVES

## Annuities on Three Lives

On pp. 182 and 183 the values of annuities for the joint continuance of three lives are given. Full tables for annuities on three lives would be very extensive, and it is therefore generally necessary to obtain them from the values of annuities on two joint lives by some such method as the following :-

Take the present value of the annuity on the joint lives of the two oldest, and find at what age the present value of an annuity on a single life will be equal thereto; the value of an annuity on the joint lives of the youngest of the three lives and the life of the age just found will be approximately the value of the annuity on the three lives. In general we shall be nearer the truth if we subtract ${ }^{\circ} 05$ from the value just found. The two-life tables given in this book are not sufficiently full to enable the calculation of three-life annuities to be made in very many cases.

On p. 184 is given the value of an annuity during the longest of three lives. The values are obtained by adding together the values of the annuities on each single life, and subtracting from the sum the value of the annuity on each pair of joint lives, then adding the value of the annuity on the three joint lives. In this table, as in the previous one, complete tables of annuities on two joint lives are necessary to enable these values to be calculated.

## Premium Conversion Tables

Pages 185 and 186 contain short Premium Conversion Tables, by means of which the single and annual premiums to secure $£ \mathrm{r}$ at death may be found by inspection. On p. 142 we see that according to the Institute of Actuaries Table at $3 \%$ the value of an annuity on a life aged 40 is $£ 17 \cdot 176$, and on $p$. 148 we find the single payment to secure $£ \mathrm{I}$ at death is $£ 4706$. This latter value may readily be found from the Single Premium Conversion Table on p. 185. Referring to the $3 \%$ column, we find that the single premium corresponding to an annuity value of $£_{17}$ is $£ 47573$. The difference in the single premium corresponding to the decimal part of the annuity value is found from the lower table on p. 185, and must be subtracted from the premium corresponding to the annuity value of $£_{17}$.

The difference corresponding to

| $\cdot 1$ | $=$ | .00291 |
| :--- | :--- | ---: |
| .07 | $=$ | .0204 |
| .006 | $=$ | .017 |
| .0002 | $=$ | $\cdot 1$ |
| .1762 | $=$ | .00513 |

We thus have the single premium corresponding to an

$$
\text { annuity of } £_{17} \text {. . . . }=47573
$$

Subtract difference . . . . $={ }^{\circ} 0{ }^{\circ} 5^{1} 3$
Single premium for annuity of $£ 17 \cdot{ }^{9} 762=$
which is the amount given on p. 148.
The differences, as can be seen from the above example, vary with the position of the figures in them in relation to the decimal point.

Thus at $3 \%:-$

| The difference for | $\cdot 1$ | is | $\cdot 002 \mathrm{gr}$ |
| ---: | :--- | ---: | :--- |
| for | $\cdot 01$ | it is | $\cdot 00029 \mathrm{r}$ |
| for | ${ }^{\circ} \mathrm{OOr}$ | it is | $\cdot 000029 \mathrm{r}$ |

and so on.
The explanation of this connection is very simple.
The annuity value designated $a$ gives the present value of $£ \mathrm{x}$ per annum on the supposition that the first payment of the annuity has to be made one year hence, and that the last payment is to be made on the anniversary of the first which immediately precedes the death of the annuitant. If, however, one further annual payment is to be made after the death of the annuitant, and we know the value of an annuity on these conditions, the difference between the value of an annuity with the last payment before the death of the annuitant and that of an annuity providing for one payment after death will give the value of $£ \mathrm{r}$ to be received at death. The value of an annuity providing for this one extra payment is obtained by taking the present value of $x+a$ due one year hence, which may be expressed by the formula $v(\mathrm{r}+a)$, where $v$ is the value of $£ \mathrm{I}$ due one year hence. Clearly, after the first payment has been made on such an annuity as this, there still remains the same number of payments to make as under an ordinary annuity. Therefore, if we know the present value of the first payment of $£ 1$ which has to be made one year hence, and the present value of an ordinary annuity one year hence, we have the value of an annuity providing for one payment after the death of the annuitant.

Using the same example as before, we have :-

| $a$ | $=17 \cdot 1762$ (see p. 142) |
| :--- | :--- |
| $\mathrm{r}+a$ | $=\mathrm{r} 8 \cdot \mathrm{r} 762$ |
| $v$ | $=97087$ (see p. 123 ) |
| $v(\mathrm{I}+a)$ | $=18 \cdot 1762 \times 97087=17.6468$ |


| Deduct $a$ |
| :--- |
| $v(\mathrm{r}+a)-a$ |$\quad=$| $\mathbf{1 7 1 7 6 2}$ |
| ---: |
| $\quad 4706$ |,$~$

This amount $£ 4706$ is the single premium to secure $£ \mathrm{I}$ at death given on p .148.

This table may be used to find the single premium for assurance on single lives, joint lives, the last survivor or survivors of any number of lives, and on successive lives; but not for contingent assurances.

The single premium for the assurance of $£ \mathrm{I}$ at death may very easily be found from the annuity value by a quite simple calculation even when no Conversion Table is available. We have just seen that $v(\mathrm{I}+a)-a=\mathrm{A}$, or the single premium. Now $v$, which is the present value of $£ \mathrm{I}$ due I year hence, is equal to $\mathrm{I}-d$, where $d$ is the discount on I for I year. Hence we find that $z(\mathrm{I}+a)-a$ $=(\mathrm{r}-d)(\mathrm{r}+a)-a$, which is the same as $\mathrm{I}-d(\mathrm{I}+a)$. The value of $d$ is given on p .123 for various rates of interest. Therefore the single premium is at once found by adding 1 to the value of the annuity, multiplying it by the rate of discount $d$, and subtracting the result from unity. Thus, to refer again to the example given above, $1+a=18 \cdot 1762, d=02913$ (p. 123). Therefore $1-d(1+a)$ $=\mathrm{r}-.02913 \times 18.1762=\mathrm{r}-{ }^{\circ} 294={ }^{\circ} 4706$, which is the value of the single premium previously found.

Page 186 gives a table for finding the annual premium payable throughout life for the assurance of $£ \mathrm{I}$ at death. The present value of all these annual payments is, of course, the same as the single premium to secure the same benefit, assuming the same Mortality Table and the same rate of interest to be employed in the calculations. Inasmuch as the annual premiums to be paid for assurance commence when the assurance is effected, so that the first premium has to be paid immediately, the number of annual premiums that have to be paid is one more than the number of annuity payments on the same life, since the first ordinary annuity payment is made one year after the annuity is taken, and the last is made prior to the death of the annuitant. Hence the single premium is the present value of an annuity the amount of which is the annual premium to secure $£ \mathrm{I}$ at death plus the extra premium that has to be paid when the assurance is effected. Thus the annuity value plus 1 multiplied by the annual premium equals the single premium. That is to say, $\mathrm{P}(\mathrm{I}+a)$ $=\mathrm{A}$, where P is the annual premium, A the single premium, and $a$ the annuity value. We may put this another way and say that the single premium divided by the annuity value plus 1 equals the annual premium or $\mathrm{P}=\frac{\mathrm{A}}{1+a}$

We have just seen, however, that the single premium A can be expressed in terms of an annuity-value for $\mathrm{A}=\mathrm{r}-d(\mathrm{I}+a)$; hence

$$
\begin{equation*}
\mathrm{P}=\frac{\mathrm{I}-d(\mathrm{I}+a)}{\mathrm{I}+a}=\frac{\mathrm{I}}{\mathrm{I}+a}-d \tag{37}
\end{equation*}
$$

## INTRODUCTION

If, therefore, we wish to know the annual premium for the assurance of $£_{\mathrm{I}}$ at death on a life aged 40 according to the Actuaries Table at $3 \%$ we have

$$
\begin{aligned}
& \mathrm{I}+a=18 \cdot 176(\mathrm{p} .142) \\
& \frac{\mathrm{I}}{1+a}=\frac{1}{18 \cdot 17^{6}}=\cdot 05502,
\end{aligned}
$$

$\frac{\mathrm{r}}{\mathrm{r}+a}-d={ }^{0} 05502-{ }^{02913}={ }^{\circ} 02589$, which is the annual pay-
ment during life to secure $£ \mathrm{I}$ at death given on $\mathrm{p} . \mathrm{r}_{50}$.
If we make use of the Annual Premium Conversion Table on p. 186, we can only approximate to this result. The Conversion Table is only a short one and deals with the annuity value to the first decimal place. Looking on line ' $17-179$,' column $\cdot \mathrm{r}$, we find that the annual premium corresponding to an annuity value of $17 \cdot \mathrm{r}$ is 026 I , which is a larger amount than the true value. If we look on the same line in column ${ }^{2} 2$ we find the annual premium corresponding to an annuity value of 17.2 is $\cdot 0258$, which is less than the true value. The annuity value being $17^{\circ} 176$ is approximately $\frac{3}{4}$ of the way between these two amoints, so that if we take $\frac{3}{4}$ of their difference, which is $0003 \times \frac{3}{4}$ equals 0002 , and subtract it from ${ }^{\circ} \mathrm{O} 6 \mathrm{r}$, we have ${ }^{\circ} \mathrm{o} 259$, which corresponds very nearly with the annual premium given on p. ${ }^{1} 50$.

In the Annual Premiunı Conversion Table we have no differences to deal with of the same kind as we have in the Single Premium Conversion Table. What we are concerned with in the Annual Premium Conversion Table is the variation in the rate of discount. If we want to know the annual premium to assure $£ 1$ at death on a life aged 40 , according to the $\mathrm{H}_{\mathrm{m}}$ Table, with interest at $4 \%$ instead of at $3 \%$, as previously, we must take the $4 \%$ annuity value from p. 142, where it is given as 15.135 , find from $p$. 186 the annual premium corresponding to this annuity value, which is ${ }^{\circ}{ }^{\circ} 29$, and subtract from it ${ }^{00093}$ (difference p, 186), so obtaining $\cdot 0236$ as the annual premium at $4 \%$, which corresponds fairly well with the amount given on p. r50. If a closer approximation to the truth is required it can he obtained, as mentioned above, by adding 1 to the annuity value, dividing unity by this amount, and subtracting the rate of discount given on p. 123. Thus, to repeat the last example, we have the annuity value 15.1347 , which with I added amounts to $16 \cdot 1347$. Dividing unity hy this amount, we have 06198 , and subtracting the rate of discount ${ }^{\circ} 03846$ we obtain ${ }^{\circ} \mathbf{2} 235^{2}$, which is the exact amount given on p . $\mathrm{r}_{50}$. Repeating the calculation in connection with the symbols we have

$$
\mathrm{P}=\frac{\mathrm{Y}}{\mathrm{Y}+a}-d=\frac{\mathrm{r}}{\mathrm{I} 6 \cdot 1347}-\cdot 03846=\cdot 06{ }_{19} 8-\cdot 03846=\cdot 0235^{2} .
$$

Annual premiums, like single premiums, may be obtained from annuity values in this way in connection with single lives, joint lives, the last survivor or survivors of any number of lives, and successive lives. The premiums for contingent assurances cannot be obtained in this way.

## Post Office Annuities and Assurances

Hitherto we have been considering the values of annuities and other benefits on what may be called a theoretical basis. That is to say, we have been supposing deaths to occur in exact accordance with certain mortality tables, and interest to be earned at various specified rates.

We have now to consider the terms on which annuities and other benefits can be obtained from various Government Departments. Page 189 gives the cost of inmediate life annuities of $£ \mathrm{r}$ per annum when purchased through the Post Office. A distinction is made between the cost of annuities on male and female lives, and the annuities are payable by half-yearly instalments on January 5 and July 5, or April 5 and October so, according to the date of purchase, the first half-yearly instalment becoming due on the second quarterly day of payment next following the day of purchase. The table gives the cost of an annuity of $£ \mathrm{r}$, and an annuity of a larger amount costs a larger sum in exact proportion. For instance, an annuity of $£$ ro a year would cost ten times the amount given in the table.

The cost of deferred life annuities under which the purchase money will be returned on application or on the death of the nominee if an instalment of the annuity shall not have become due, is given on p. rgo. The annuities are payable half-yearly, the first payment of the annuity being made six months after the number of years they are deferred has expired. Thus the first payment under an annuity deferred io years will become due and payable on the second quarterly day of payment next following the expiration of ten years.

The Table of Annual Payments shows the amount of each annual payment that has to be made for a number of years exceeding by one the number of years the annuity is deferred. Thus if the annuity is deferred ten years, rr payments have to be made; if it is deferred twenty years, 21 payments have to be made, and so on.

On p. igr a corresponding table is given, showing the cost of deferred life annuities under which the purchase price is not returnable in the event of the life on which the annuity is granted ceasing before the first payment of the annuity becomes due.

## INTRODUCTION

Pages 192-194give the premiums for life assurance effected through the Post Office. It will be noticed that the sum assured is sometimes payable at death and sometimes payable in various numbers of years after being effected or at death if previous. The annual premiums for life assurances given on p. 194 differ, in regard to assurances payable at a certain age, from the ordinary practice of life assurance companies. The great majority of life assurance offices, when they assure an amount payable at a specified age or at death if previous, only require as a maximum number of payments the difference between the age at entry and the age at maturity. Thus an endowment assurance effected by a man aged thirty, payable at age sixty or at death if previous, only calls for $(60-30=) 30$ annual payments in the eventof the assured surviving till the age of sixty, while Post Office assurance in such a case as this would require 31 annual premiums to be paid.

Government annuities are also granted by the National Debt Office, and are made chargeable upon the Consolidated Fund of the United Kingdom. Further particulars in connection with these annuities are given at the bottom of the table on p. 195.

## Annuities and Assurances Granted by Life Offices

It is probable that any person wanting to purchase an annuity or to assure to the best advantage would go to a well-established life assurance company rather than to a Government department. He would obtain much better value for money by so doing, and the security offered by the best life offices is so ample and altogether beyond question that no advantage attaches to Government guarantee as compared with the guarantee of first-class life assurance companies. The rates given on p. 196 for annuities and assurances granted by British life offices are only the average rates. Many companies of the highest standing guarantee these benefits on terms much more favourable than the average.

Details for each company may be obtained from various publications, such as Whitaker's Almanack. They are also given, much more fully, in Bourne's ' Insurance Directory' and Bourne's 'Assurance Manual.'

## INCOME TAX

The Income Tax Tables on pp. 198-204 require little explanation. The amounts are arrived at by multiplying the income by the pence in the tax per pound, and dividing the result by 12 and 20 to obtain the answer in pounds. Thus the income tax on $£_{130}$

$$
\begin{aligned}
& \text { •. d. € s. } a \text {. } \\
& \text { at } 5 d .=\frac{130 \times 5}{12}=54 \quad 2=214 \quad 2 \text {; } \\
& \text { at } 6 d .=\frac{130 \times 6}{12}=65 \quad \circ=3 \quad 5 \quad \circ \text { : } \\
& \text { at } 7 d .=\frac{130 \times 7}{12}=75 \quad 10=315 \text { 10; } \\
& \text { at } 8 d .=\frac{\mathrm{r} 30 \times 8}{12}=86 \quad 8=4 \quad 6 \quad 8 ; \\
& \text { at } 9 \mathrm{~d} .=\frac{\mathrm{I} 30 \times 9}{\mathrm{I} 2}=97 \quad 6=4 \mathrm{I} 7 \quad 6 .
\end{aligned}
$$

If it is desired to find the income tax on other amounts than those quoted, may easily be done by addition. Thus the tax at ${ }^{7}$ d. on $£ \mathrm{r}, 493$ is


If the tax is desired at a rate not given in the tables, it can be obtained by addition or subtraction. Thus the tax on $£ 680$ at $1 \mathrm{I} d$. is

## LOGARITHMIC TABLES

On pp. 230-320 there are various logarithmic tables by means of which many calculations required to be made by users of this book can be performed with the greatest ease. These tables are fully explained on pp. 207-228, and with the explanation there given the logarithmic tables may readily be employed by people previously unacquainted with logarithms. It cannot be too strongly urged upon everybody who has calculations to make that logariihms offer a very short and at the same time quite simple means of performing calculations that without their aid frequently involve long and tedious processes.

## EXAMPLES

On pp. 42-48 a collection of examples is given showing some of the many purposes to which the tables in this book may be applied. These, in conjunction with the explanations already given, will, it is hoped, make the use of the tablcs perfectly clear, and at the same time show how many results not specifically tabulated may be arrived at.

## EXAMPLES

## Amount of a Sum in Any Number of Years

(1) Find the amount of $£ 437$ at the end of 35 years at $2 \frac{1}{4} \%$.

See $p$ 1 in 35 years $={ }^{2}{ }^{1} 7879$ 437 in 35 years $=2.17879 \times 437=\{\underline{952 \cdot 13123}$ or

$$
\left.\begin{array}{rl|l}
437 & =\log 2 \cdot 640481 \\
\text { I in } 35 \text { years } & =\log 0 \cdot 338216 \\
437 \text { in } 35 \text { years } & =\log 2 \cdot 978697 & 242 \\
279
\end{array}\right)
$$

(2) Required, the amount of $£ 625$ in 127 years at $4 \frac{1}{2} \%$.

$$
\begin{array}{lr}
1 \text { in } 100 \text { years }= & 81.58852 \\
\text { I in } 27, ~ & 3.28201
\end{array}
$$

$$
1 \text { in } 127 \text { years }=81.58852 \times 3.28201=\quad 26777434
$$

$$
625, \ldots 127 \Rightarrow=26777434 \times 625=£_{167358.96250}
$$

or

$$
625=\log 2.795880
$$

I in 127 years $=\log 0.01911629 \times 127=\log 2.427769$

$$
625 \text { in } 127 \text { years }=\log 5.223649=£ 167359
$$

(3) Find the amount of $£ 475$ in 30 years at $2 \frac{7}{10}=2.7 \%$. 1 in 30 years $=\log 0.01157044 \times 30=\log 20.6767113$

|  | $\begin{aligned} & \text { I in } 100 \text { years= } \\ & \text { I in } 27, \end{aligned}$ | $\begin{array}{r} 81.58852 \\ 3.28201 \end{array}$ |
| :---: | :---: | :---: |
| in 127 years= | 8852 $\times 3.28201=$ |  |
| 625 " 127 " $=26777434 \times 625=\underbrace{167358.96250}$ |  |  |

## EXAMPLES

(4) Find the rate of interest at which $£_{530}$ must be invested in order to amount to $£ 3,000$ in 80 years.

$$
\text { If } 530 \text { amounts to } 3,000
$$

$$
\text { I " } \quad \frac{3,000}{530}=5.66038
$$

This is between $2 \%$ and $2 \frac{1}{4} \%$, but nearer $2 \frac{1}{4} \%$.
See力. 86

1 in 80 years $=\log 0.752845$
I ", I year $=\log 0.75^{28} 45 \div 80=\log 0.009411=1.0219$ The rate of interest therefore is $2.19 \%$.

## Present Value of a Sum to be Received in the Future

(5) It is required to know the present value of $£ 913$ to be received at the end of 37 years, reckoning interest at $4 \%$.

$$
\text { Present value of } 1 \text { in } 37 \text { years }=\cdot_{2} 343
$$

or

$$
" \quad " \quad 913=23430 \times 913 \div £ 213.9 \mathrm{r} 59
$$

$$
\begin{aligned}
913 & =\log 2.96047 \mathrm{I} \\
\mathrm{I} \text { in } 37 \text { years }=\log 0 \cdot-\log 0.630234 & =\log \frac{1}{1} 369766 \\
913 \text { in } 37 \text { years } & =\log _{2.330237}^{2 \cdot}=\mathcal{L}_{213.92}
\end{aligned}
$$

(7) At the end of 20 years an institution will enter into fossession of a property which, it is agreed, will then be worth
$£_{5,000}$. Meantime it receives no income, but must spend $£ 100$ upon the property at the end of 5 years, $£ 100$ in 10 years, and £100 in 15 years. Find the present value of the property, reckoning interest at $3 \%$.

Present value of 5,000 in 20 years $=55368 \times 5000=2768.4$
(10) Find the amount of $£ 735$ per annum in 34 years at $27 \%$. $£ 735$ p. a. in 34 years at $2 \frac{7}{8} \%=\log 4.617542 \mathrm{I}=£ 41451 \cdot 68$

$$
\begin{aligned}
\text { £ per annum at } 3 \% & =57.73018 \\
£ \text { r per annum at } 2 \frac{3}{4} \% & =55^{\prime} 10023 \\
\text { Difference } & =2: 62995 .
\end{aligned}
$$

## EXAMPLES


The error here is considerable. Taking half the difference between $2 \frac{3}{4}$ and $3 \%$ to obtain $2 \frac{7}{8} \%$ is only a means of roughly approximating to the correct amount.

## Present Value of Annuity

(11) Find the present value of $£ 47.25$ per annum for 30 years P.V. of $£$ i per annum $=15.37245$ " $£ 47.25$ per annum $=15.37245 \times 47.25=£ \underline{726.348}$ or

$$
\log 1 \cdot 186743+\log 1 \cdot 674402=\log 2 \cdot 86 \times 145=£ \underline{726 \cdot 35}
$$

$\mathcal{L}$ I p.a. for 27 years $=\log 2 \cdot 136721$
$£_{137} \quad " \quad=\quad=\log 3^{3} 399^{1}{ }^{13}=\mathcal{L}_{2510 \cdot 8}$
(13) Find the present value of $£_{\frac{1}{\%}} 1$ per annum for 75 years at

$$
\text { Present value }=\log 1 \cdot 4023555=£ 25 \cdot 2555
$$

This is very close to 20 , and therefore the required rate is a trifle less than $2 \frac{7}{2} \%$.
Present Value of a Perpetuity(15) Find the value of a perpetuity of $£ 60$ a year, reckoninginterest at $3 \frac{3}{8} \%$.
$29.62963 \times 60=1777.7778$

See p. 94

$$
94
$$66Value required $=265 I^{\circ} 941$

or
(16) Find the value of a property yielding $£ 25$ per annum for the next 15 years and $\mathcal{E} 110$ in perpetwity thereafter, reckoning interest at $3 \%$.
Take the value of a perpetuity of $\mathcal{X} 110$ per annum and deduct the value of (110-25=) £85 per annum for 15 years.

$$
\text { Perpetuity }=33 \times 110=3666.666
$$

P.V. of $£ 85$ p. a. for 15 years $=11{ }^{\circ} 93794 \times 85=1014^{\circ} 725$
P.V. of $£^{25}$ p. a. for 15 years $=11.93794 \times 25=298.448$ ..... 66
P.V. of perpetuity $£_{1 \text { Io }}$ deferred 15 years

$$
\begin{aligned}
=21.39539 \times 110 & =\frac{2353.493}{97} \\
& \text { Value required }=£ 2651.941
\end{aligned}
$$

$$
\text { P.V. at } 2 \frac{5}{8} \%(=16.34350+\cdot 21095)=\quad .16 .55445
$$

Approximate P.V. of perpetuity of $£ \mathrm{Ip}$. a. at

$$
25 \% \text { deferred } 22 \text { years }=21.54079
$$

Approximate P.V. of perpetuity of $£ 496$ p. a.
at $25 \%$ deferred 22 years $=21.54079 \times 496=£$, 10684
or
Value of perpetuity at $25 \%=38.095^{2}$
P.V. of $\underset{22}{\mathcal{E} \text { y } \mathrm{p} .}$ a. for
years at $2 \frac{5}{8} \%$
$=\log 12188635=16.5525$
P.V. of perp. deferred

$$
22 \text { years }=21 \cdot 5427=\log 1 \cdot 333300
$$

$$
496=\log 2 \cdot 695482
$$

P.V. of perp. of $£ 496$ deferred 22 years at 2晋 \%

$$
=\log 4^{\circ} 028782=\notin 10685
$$

## Sinking Fund

(18) Find the sum to be set aside annually to amount to $£ 75^{\circ}$ in 30 years reckoning interest at $4 \%$.

The sum to amount to
$750=\log 2.875061$
Annuity $\quad 1$ will buy $=\log \frac{2}{2} 762154$
$" 75^{\circ} \quad "=\log 1.637215=43.373$
Deduct $4 \%$ on $75^{\circ}=04 \times 75^{\circ}=30.000$
Annual sum to amount to $£ 750$ in 30 years $=\overline{£ 13.373}$

## Annuity a Given Sum will Purchase

(19) Find the annuity for 35 years that may be bought for $£ 1,573$, reckoning interest at $3 \frac{1}{2} \%$.

$$
1573=\log 3 \cdot 196729
$$

Annuity I will buy $=\log \overline{2} \cdot 698956$
See $p$. II 2
${ }_{5} 573$ will buy an annuity of $\frac{1573}{20.00066}=£ \underline{78 \cdot 6474}$

## Annuities and Assurances on Lives

(20) Find the value of an annuity of $£ 250$ on the life of a male aged 45, according to the Government Experience Table at $3 \%$

(21) Find the value of $\mathcal{E} 1,500$ to be received at the death of $a$ male aged 50, according to the Healthy Males Table at $3 \frac{1}{2} \%$.

$$
\cdot 52023 \times 1500=\{780 \cdot 345
$$

(22) Find the annual payment to secure $£_{1,500}$ at the death of a male aged 50, according to the Healthy Males Table at $3 \frac{1}{2} \%$.

$$
.03667 \times 1500=£ 55^{\circ} 005
$$

(23) Find the value of the reversion to a perpetuity of $£, 100$ per annum at the death of a male aged 60, according to the Government Experience Table at $3 \%$, and according to the Healthy Males Table at $3 \%$.

## EXAMPLES

By Government Experience $22^{\circ} 73^{2} \times 100=£ 2273^{\circ} 2$

$$
1000[1-029126(14 \cdot 162+1)]=\leq 558 \cdot 3916
$$

(28) Find the annual payment to secure $£, 1,000$ at the death of a person aged $43 . \quad$ Carlisle Table $4 \%$.

Annuity on life aged $43=14.505$
Annual premium for annuity of $14{ }^{\circ} 5=\cdot 0354-\cdot 0093={ }^{\circ} \cdot 0261$

## INTEREST TABLES

AMOUNT AND PRESENT VALUE of<br>ONE POUND<br>AND OF<br>ONE POUND PER ANNUM<br>VALUES OF PERPETUITIES AND REVERSIONS<br>nominal and effective rates of interest<br>AND OTHER TABLES

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | 1 \% 01000 | -99010 | 1.00000 | 0.99010 | 1 |
| 2 | 1.02010 | -98030 | 2.01000 | 1.97040 | 2 |
| 3 | 1.03030 | -97059 | 3.03010 | 2.94099 | 3 |
| 4 | 1.04060 | -96098 | 4.06040 | 3.90197 | 4 |
| 5 | 1.05101 | 95147 | 5.10101 | 4.85343 | 5 |
| 6 | 1 -06152 | 94205 | 6.15202 | 579548 | 6 |
| 7 | 1.07214 | 93272 | $7 \cdot 21354$ | 6.72819 | 7 |
| 8 | 1.08286 | 92348 | $8 \cdot 28567$ | 7.65168 | 8 |
| 9 | I 09369 | 91434 | 9.36853 | $8 \cdot 56602$ | 9 |
| 10 | 1-10462 | -90529 | $10 \cdot 46221$ | $9.4713^{\circ}$ | 10 |
| II | 1-11567 | -89632 | 11.56683 | $10 \cdot 36763$ | 11 |
| 12 | $1 \cdot 12683$ | -88745 | 12.68250 | $11 \cdot 25508$ | 12 |
| 13 | I'13809 | -87866 | 13.80933 | 12.13374 | 13 |
| 14 | $1 \cdot 14947$ | -86996 | 14.94742 | 13.00370 | 14 |
| 15 | I'16097 | -86135 | 16.09690 | 13.86505 | 15 |
| 16 | 1.17258 | -85282 | 17.25786 | 14.71787 | 16 |
| 17 | $1 \cdot 18430$ | -84438 | 18.43044 | 15.56225 | 17 |
| 18 | 1-19615 | -83602 | 19.61475 | 16.39827 | 18 |
| 19 | I 2081 I | -82774 | 20.81089 | 17.22601 | 19 |
| 20 | 1.22019 | -81954 | 22.11900 | 18.04555 | 20 |
| 2 I | I 23239 | -81143 | 23.23919 | 18.85698 | 2 I |
| 22 | I 24472 | -80340 | 24.47159 | 19.66038 | 22 |
| 23 | I 257716 | . 79544 | 25.71630 | 20.45582 | 23 |
| 24 | I 268973 | $\cdot 78757$ | 26.97346 | $21 \cdot 24339$ | 24 |
| 25 | 128243 | '77977 | 28.24320 | 22.02316 | 25 |
| 26 | 1.29526 | 77205 | 29.52563 | 22.79520 | 26 |
| 27 | $1 \cdot 30821$ | 76440 | $30 \cdot 82089$ | 23.55961 | 27 |
| 28 | I 32129 | 75684 | $32 \cdot 12910$ | 24.31644 | 28 |
| 29 | I 33450 | 74934 | 33.45039 | 25.06579 | 29 |
| 30 | I-34785 | 74192 | 34*78489 | $25 \cdot 80771$ | 30 |
| 31 | 1.36133 | 73458 | 36-13274 | 26.54229 | 3 I |
| 32 | 1.37494 | $\bigcirc 72730$ | 37.49407 | 27.26959 | 32 |
| 33 | $1 \cdot 38869$ | 72010 | $38 \cdot 86901$ | 27.98969 | 33 |
| 34 | 1.40258 | '71297 | $40 \cdot 2577{ }^{\circ}$ | 28.70267 | 34 |
| 35 | 1.41660 | '70591 | 41.66028 | 29.40858 | 35 |
| 36 | 1.43077 | -69892 | $43 \cdot 07688$ | 30-10750 | 36 |
| 37 | 1.44508 | -69200 | 44.50765 | $30 \cdot 79951$ | 37 |
| 38 | 1.45953 | $\cdot 68515$ | 45.95272 | 31.48466 | 38 |
| 39 | 1.47412 1.48886 | -67837 | 47.41225 | $32 \cdot 16303$ | 39 |
| 40 | I-48886 | . 67165 | $48 \cdot 88637$ | $32 \cdot 83469$ | 40 |
| 4 T | 1.50375 | -66500 | 50.37524 | 33.49969 | 41 |
| 42 | I 51578 | $\cdot 65842$ | 51.87899 | $34 \cdot 15811$ | 42 |
| 43 | 153398 | -65190 | 53.39778 | 34.81001 | 43 |
| 44 | $1 \cdot 54932$ | -64545 | 54.93176 | 35.45545 | 44 |
| 45 | I-56481 | -63906 | 56.48107 | 36.09451 | 45 |
| 46 | 1-58046 | . 63273 | 58.04588 | 36.72724 | 46 |
| 47 | 1-59626 | -62646 | 59.62634 | 37.35370 |  |
| 48 | 1.61223 | $\cdot 62026$ | 61.22261 | 37.97396 | 48 |
| 49 | I. 62835 | $\cdot 61412$ | 62.83483 | $38 \cdot 58808$ | 49 |
| 50 | I 64463 | $\cdot 60804$ | 64.46318 | $39 \cdot 19612$ | 50 |

For explanation see pp. 8-13

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 1.66108 | -60202 | 66.10781 | 39.79814 | 51 |
| 52 | I 67769 | -59606 | 67.76889 | $40 \cdot 39419$ | 52 |
| 53 | 1.69447 | -59016 | 69.44658 | $40 \cdot 98435$ | 53 |
| 54 | 1.71141 | -58431 | 71.14105 | $41 \cdot 56866$ | 54 |
| 55 | I 7285 | $\cdot 57853$ | $72 \cdot 85246$ | $42 \cdot 14719$ | 55 |
| 56 | I ${ }^{\prime} 7458 \mathrm{I}$ | -57280 | $74 \cdot 58098$ | 42.71999 | 56 |
| 57 | 176327 | -56713 | $76 \cdot 32679$ | $43 \cdot 28712$ | 57 |
| 58 | 1.78090 | -56151 | $78 \cdot 09006$ | $43 \cdot 84863$ | 58 |
| 59 | 179871 | -55595 | $79 \cdot 87096$ | 44.40459 | 59 |
| 60 | I.81670 | -55045 | 81 $\cdot 66967$ | 44.95504 | 60 |
| 61 | I.83486 | -54500 | 83.48637 | $45 \cdot 50004$ | 61 |
| 62 | 1.85321 | -53960 | $85 \cdot 32123$ | $46 \cdot 03964$ | 62 |
| 63 | I.87174 | -53426 | $87 \cdot 17444$ | $46 \cdot 57390$ | 63 |
| 64 | I. 89046 | -52897 | 89.04619 | $47 \cdot 10287$ | 64 |
| 65 | I'90937 | 52373 | 90.93665 | $47 \cdot 62661$ | 65 |
| 66 | I 92846 | -51855 | $92 \cdot 84601$ | $48 \cdot 14516$ | 66 |
| 67 | I 94774 | -51341 | 9477447 | $48 \cdot 65857$ | 67 |
| 68 | 1.96722 | -50833 | $96 \cdot 72222$ | $49 \cdot 16690$ | 68 |
| 69 | I 988689 | -50330 | 98.68944 | $49 \cdot 67020$ | 69 |
| 70 | $2 \cdot 00676$ | -49831 | 100.67634 | $50 \cdot 16851$ | 70 |
| 71 | 2.02683 | -49338 | 102.68310 | $50 \cdot 66190$ | 71 |
| 72 | 2.04710 | -48850 | 104.70993 | 51-15039 | 72 |
| 73 | 2006757 | -48366 | $106 \cdot 75703$ | 51.63405 | 73 |
| 74 | 2.08825 | -47887 | 108.82460 | 52.11292 | 74 |
| 75 | $2 \cdot 10913$ | -47413 | 110.91285 | $52 \cdot 58705$ | 75 |
| 76 | $2 \cdot 13022$ | -46944 | 113.02197 | $53 \cdot 05649$ | 76 |
| 77 | $2 \cdot 15152$ | -46479 | 115.15219 | 53.52127 | 77 |
| 78 | 2.17304 2.15472 | -46019 | 117.30372 | 53.98146 | 78 |
| 79 | $2 \cdot 19477$ | -45563 | 119.47675 | 54.43709 | 79 |
| 80 | 2.21672 | -45112 | $121 \cdot 67152$ | $54 \cdot 8882 \mathrm{I}$ | 80 |
| 81 | 2.23888 | $\cdot 44665$ | 123.88824 | $55 \cdot 33486$ | 8 I |
| 82 | 2.26127 | -44223 | 126.12712 | 55.77709 | 82 |
| 83 | 2.28388 | -43785 | 128.38839 | $56 \cdot 21494$ | 83 |
| 84 | $2 \cdot 30672$ | -43352 | $130 \cdot 67227$ | $56 \cdot 64845$ | 84 |
| 85 | 2.32979 | $\cdot 42922$ | 132.97900 | $57 \cdot 07768$ | 85 |
| 86 | 2.35309 | -42497 | 135.30879 | $57 \cdot 50265$ | 86 |
| 87 | $2 \cdot 37662$ | $\cdot 42077$ | 137.66187 | 57.92342 | 87 |
| 88 | 2.40038 | 41660 | 140.03849 | $58 \cdot 34002$ | 88 |
| 89 | 2.42439 | $\cdot 41248$ | $142 \cdot 43888$ | $58 \cdot 75249$ | 89 |
| 90 | 2.44863 | -40839 | $144 \cdot 86327$ | $59 \cdot 16088$ | 90 |
| 9 I | 2.47312 | $\cdot 40435$ | 147.31190 | 59.56523 | 91 |
| 92 | 2.49785 | -40034 | 149.78502 | 59.96557 | 92 |
| 93 | $2 \cdot 52283$ | -39638 | $152 \cdot 28287$ | $60 \cdot 36195$ | 93 |
| 94 | $2 \cdot 54806$ | - 39246 | 154.80570 | $60 \cdot 75441$ | 94 |
| 95 | $2 \cdot 57354$ | $\cdot 38857$ | 157.35375 | $61 \cdot 14298$ | 95 |
| 96 | $2 \cdot 59927$ |  | 159.92729 | 61.52770 | 96 |
| 97 | 2.62527 | $\cdot 38091$ | $162 \cdot 52656$ | 61.90862 | 97 |
| 98 | 2.65152 | $\cdot 37714$ | 165.15183 | $62 \cdot 28576$ | 98 |
| 99 | 2.67803 | -37341 | 167.80335 170.48138 | $62 \cdot 65917$ $63 \cdot 02888$ | 99 100 |
| 100 | 2:7048I | 3697 I | 170.48138 | $63^{\circ} 02888$ | 100 |

See also Tables on pp. xx-xxxi

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | 1.01250 | $\cdot 98765$ | 1 -00000 | 0.98765 | 1 |
| 2 | 1.02516 | $\cdot 97546$ | 2.01250 | 1.96312 | 2 |
| 3 | 1.03797 | -96342 | 3.03766 | 2.92653 | 3 |
| 4 | 1.05095 | -95152 | 4.07563 | 3.87806 | 4 |
| 5 | 1.06408 | -93978 | 5-12657 | $4 \cdot 81783$ | 5 |
| 6 | $1 \cdot 07738$ | -92817 | 6.19065 | 5.74601 | 6 |
| 7 | 1.09085 | -91672 | $7 \cdot 26804$ | $6 \cdot 66273$ | 7 |
| 8 | I•10449 | -90540 | $8 \cdot 35889$ | $7 \cdot 56812$ | 8 |
| 9 | 1-11829 | $\cdot 89422$ | 9.46337 | 8.46234 | 9 |
| 10 | 1-13227 | -88318 | $10 \cdot 58167$ | $9 \cdot 34553$ | 10 |
| II | 1-14642 | -87228 | 11781394 | 10.21780 | 11 |
| 12 | 1.16075 | -86151 | 12.86036 | 11.07931 | 12 |
| 13 | I 17526 | - 85087 | 14.02112 | 1193018 | 13 |
| 14 | 1-18995 | -84037 | 15.19638 | $12 \cdot 77055$ | 14 |
| 15 | $1 \cdot 20483$ | -82999 | 16.38633 | $13 \cdot 60055$ | 15 |
| 16 | 1-21989 | -81975 | 17.59116 | 14.42029 | 16 |
| 17 | 1.23514 | -80963 | 18.81105 | 15.22992 | 17 |
| 18 | I-25058 | -79963 | 20.04619 | 16.02955 | 18 |
| 19 | I 266621 | $\cdot 78976$ | 21.29677 | 16.81931 | 19 |
| 20 | I-28204 | $\cdot 78001$ | $22 \cdot 56298$ | 17.59932 | 20 |
| 21 | 1-29806 | -77038 | 23.84502 | 18.36969 | 21 |
| 22 | $1 \cdot 31429$ | $\cdot 76087$ | 25.14308 | 19.13056 | 22 |
| 23 | 1.33072 | $\cdot 75147$ | 26.45737 | 19.88204 | 23 |
| 24 | 1.34735 | -74220 | 27.78808 | $20 \cdot 62423$ | 24 |
| 25 | 1.36419 | -73303 | 29.13544 | 21.35727 | 25 |
| 26 | $1 \cdot 38125$ | $\cdot 72398$ | 30.49963 | 22.08125 | 26 |
| 27 | 1.3985 | $\cdot 71505$ | 31.88087 | 22.79630 | 27 |
| 28 | 1.41599 | -70622 | 33.27938 | 23.50252 | 28 |
| 29 | 1.43369 | -69750 | 34.69538 | 24.20002 | 29 |
| 30 | I-4516I | -68889 | $36 \cdot 12907$ | 24.8889 I | 30 |
| 31 | 1.46976 | -68038 | $37 \cdot 58068$ | $25 \cdot 56929$ | 31 |
| 32 | I.48813 | -67198 | 39.05044 | $26 \cdot 24127$ | 32 |
| 33 | r-50673 | -66369 | $40 \cdot 53857$ | 26.90496 | 33 |
| 34 | I.52557 | -65549 | 42.04530 | $27 \cdot 56046$ | 34 |
| 35 | I-54464 | -64740 | $43 \cdot 57087$ | $28 \cdot 20786$ | 35 |
| 36 | 1.56394 | -63941 | $45 \cdot 11551$ | 28.84727 | 36 |
| 37 | I 58349 | -63152 | $46 \cdot 67945$ | 29.47878 | 37 |
| 38 | 1.60329 | $\cdot 62372$ | $48 \cdot 26294$ | $30 \cdot 10250$ | 38 |
| 39 | I 62333 | -61602 | $49 \cdot 88623$ | $30 \cdot 71852$ | 39 |
| 40 | 1.64362 | .60841 | 51.48956 | 31-32693 | 40 |
| 4 I | 1.66416 | -60090 | 53.13318 | 31.92784 | 41 |
| 42 | I 68497 | -59348 | 54.79734 | 32.52132 | 42 |
| 43 | $1 \cdot 70603$ | $\cdot 58616$ | 56.48331 | $33 \cdot 10748$ | 43 |
| 44 | 172735 | - 57892 | $58 \cdot 18834$ | 33.68640 | 44 |
| 45 | 1.74895 | -57177 | 59.91569 | 34.25817 | 45 |
| 46 | 1.77081 | -56471 | 61.66464 | 34.82288 | 46 |
| 47 | 179294 | -55774 | 63.43545 | $35 \cdot 38062$ | 47 |
| 48 | 1.81535 | - 55086 | 65.22839 | 35.93148 36.4754 | 48 |
| 49 50 | 1.83805 | -54406 | 67.04374 | $36 \cdot 47554$ | 49 |
| 50 | 1.86102 | -53734 | 68.88179 | 37.01288 | 50 |

For explanation see pp. 8-I 3

INTEREST TABLES
$1 \frac{1}{4} \%$

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 1.88429 | ${ }^{\cdot} 53071$ | $70 \cdot 74281$ | 37.54358 | 51 |
| 52 | 1.90784 | -52415 | 72.62710 | 38.06773 | 52 |
| 5 | 193169 | -51768 | 74.53494 | $38 \cdot 58542$ | 53 |
| 54 | I.95583 | -51129 | 76.46662 | $39^{\circ} 09671$ | 54 |
| 55 | 1.98028 | -50498 | $78 \cdot 42246$ | 39.60169 | 55 |
| 56 | 2.00503 | -49874 | $80 \cdot 40274$ | $40 \cdot 10043$ | 56 |
| 57 | 2.03010 | -49259 | 82.40777 | $40 \cdot 59302$ | 57 |
| 58 | 2.05547 | -48651 | $84 \cdot 43787$ | 41.07952 | 58 |
| 59 | 2.08117 | $\cdot 48050$ | $86 \cdot 49334$ | $41 \cdot 56002$ | 59 |
| 60 | 2-10718 | -47457 | 88.5745 I | $42 \cdot 03459$ | 60 |
| 6r | $2 \cdot 13352$ | -46871 | $90 \cdot 68169$ | $42 \cdot 50330$ | 61 |
| 62 | 2.16019 | -46292 | 92-81521 | 42.96622 | 62 |
| 63 | 2.18719 | -45721 | 94.97540 | 43.42343 | 63 |
| 64 | 2.21453 | -45156 | 97-16259 | $43 \cdot 87499$ | 64 |
| 65 | $2 \cdot 2422 \mathrm{I}$ | 44599 | 99.37713 | 44.32098 | 65 |
| 66 | $2 \cdot 27024$ | $\cdot 44048$ | 101.61934 | $44 \cdot 76146$ | 66 |
| 67 | 2.29862 | -43504 | 103.88958 | $45 \cdot 19651$ | 67 |
| 68 | 2.32735 | -42967 | $106 \cdot 18820$ | $45 \cdot 62618$ | 68 |
| 69 | $2 \cdot 35644$ | 42437 | 108.51555 | $46 \cdot 05055$ | 69 |
| 70 | $2 \cdot 38590$ | -41913 | 110.87200 | 46.46968 | 70 |
| 71 | 2.41572 | -41395 | 113.25790 | $46 \cdot 88363$ | 71 |
| 72 | $2 \cdot 44592$ | $\cdot 40884$ | 115.67362 | 47.29247 | 72 |
| 73 | 2.47649 | -40380 | 118.11954 | 47.69627 | 73 |
| 74 | 2.50745 | -39881 | 120.59604 | $48 \cdot 09508$ | 74 |
| 75 | 2.53879 | -39389 | 123•10349 | 48.48897 | 75 |
| 76 | 2.57053 | -38903 | 125.64228 | $48 \cdot 87800$ | 76 |
| 77 | 2.60266 | $\cdot 38422$ | 128.2128 I | 49.26222 | 77 |
| 78 | 2.63519 | -37948 | $130 \cdot 81547$ | $49 \cdot 64170$ | 78 |
| 79 | $2 \cdot 66813$ | -37479 | 133.45066 | $50 \cdot 1649$ | 79 |
| 80 | 2.70149 | -37017 | $136 \cdot 11880$ | $50 \cdot 38666$ | 80 |
| 8 8 | 2.73525 | -36560 | 138.82028 | 50.75225 | 8 r |
| 82 | $2 \cdot 76944$ | -36108 | 141.55554 | 51-11334 | 82 |
| 83 | 2.80406 | - 35663 | 144.32498 | 51.46996 | 83 |
| 84 | 2.83911 | $\cdot 35222$ | $147 \cdot 12904$ | 51.82219 | 84 |
| 85 | 2.87460 | -34787 | 149.96815 | 52'17006 | 85 |
| 86 | 2.91053 | $\cdot 34358$ | 152.84276 | 52.51364 | 86 |
| 87 | 2.94692 | -33934 | 155.75329 | $52 \cdot 85298$ | 87 |
| 88 | 2.98375 | -33515 | 158.70021 | $53 \cdot 18813$ | 88 |
| 89 | 3.02105 | -33101 | 161.68396 | 53.51914 | 89 |
| 90 | $3 \cdot 0588 \mathrm{I}$ | 32692 | $164 \% 0501$ | $53 \cdot 84606$ | 90 |
| 9 I | 3.09705 | -32289 | 167.76382 | $54 \cdot 16895$ | 91 |
| 92 | 3.13576 | -31890 | 170.86087 | 54.48785 | 92 |
| 93 | 3.17496 | $\cdot 31496$ | 173.99663 | 54.80282 | 93 |
| 94 | 3.21464 | -31108 | 177'17159 | $55 \cdot 11389$ | 94 |
| 95 | 3.25483 | -30724 | $180 \cdot 38623$ | $55^{\circ} 42 \mathrm{II} 3$ | 95 |
| 96 | 329551 | -30344 | 183.64106 | 55.72457 | 96 |
| 97 | 3.33671 | - 29970 | 186.93658 | 56.02427 | 97 |
| 98 | 3.37842 | -29600 | $190 \cdot 27328$ | $56 \cdot 32026$ | 98 |
| 99 | 3.42065 | -29234 | 193.65170 | $56 \cdot 61261$ | 99 |
| 100 | 3.46340 | -28873 | 197.07234 | 56.90134 | 100 |

See also Tables on pp. xx-xxxi

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | 1.01500 | -98522 | 1.00000 | $0.98522$ |  |
| 2 | 1.03023 | -97066 | 2.01500 | I.95588 | $\begin{aligned} & 2 \\ & 3 \end{aligned}$ |
| 3 | 1.04568 | . 95632 | 3.04523 4.09090 | 2.91220 3.85438 | 3 4 |
| 4 | 1.06136 | -94218 | 4.09090 5.15227 | 3.85438 4.78265 | 5 |
| 5 | I 07728 | 92826 | 515227 | 4.69719 | 6 |
| 6 | I 093344 | '91454 | 6.22955 | 5.69719 6.59821 | 6 |
| 7 | I-10984 | . 888771 | 7.32299 8.43284 | 6.59821 7.48593 | 8 |
| 8 | I-12649 I.14339 | .88771 .87459 | 8.43284 9.55933 | 7.46593 | 9 |
| ${ }^{9}$ | I-14339 I-16054 | .86167 | 10.70272 | 9.22219 | 10 |
| II | 1-17795 | -84893 | 11.86326 | 10.07112 | 12 |
| 12 | $1 \cdot 19562$ | -83639 | 13.04121 | $10 \cdot 90751$ | 12 |
| 13 | 121355 | -82403 | 14.23683 | 11.73153 | 13 |
| 14 | 1.23176 | -81185 | 15.45038 | 12.54338 | 14 |
| 15 | 1.25023 | $\cdot 79985$ | 16.68214 | 13.34323 | 15 |
| 16 | I 26899 | $\cdot 78803$ | 17.93237 | 14.13126 | 16 |
| 17 | 1.28802 | $\cdot 77639$ | 19.20136 | 14.90765 | 17 |
| 18 | I.30734 | $\cdot 76491$ | 20.48938 | 15.67256 | 18 |
| 19 | I-32695 | $\cdot 75361$ | 21.79672 | 16.42617 | 19 |
| 20 | I 34686 | -74247 | 23'12367 | 17•16864 | 20 |
| 2 I | $1 \cdot 36706$ | -73150 | 24.47052 | 17.90014 | 21 |
| 22 | $1 \cdot 38756$ | $\cdot 72069$ | 25.83758 | 18.62083 | 22 |
| 23 | 1.40838 | $\cdot 71004$ | 27.22515 | 19.33086 | 23 |
| 24 | 1.42950 | . 698954 | 28.63352 | 20.03041 | 24 |
| 25 | 1.45095 | -68921 | 30.06302 | 20.71961 | 25 |
| 26 | 1447271 | $\cdot 67902$ | 3 I 51397 | 21.39863 | 26 |
| 27 | I. 49480 | . 668999 | 32.98668 34.48148 | 22.06762 | 27 |
| 28 | 1.51722 | -65910 | 34.48148 35 | 22.72672 23.37608 | 29 |
| 29 30 | - 53998 1-56308 | -64936 | $35 \cdot 99870$ $37 \cdot 53868$ | 23.01584 | 30 |
| 3 I | $1 \cdot 58653$ | $\cdot 63031$ | $39 \cdot 10176$ | 24.64615 | 31 |
| 32 | 1.61032 | -62099 | $40 \cdot 68829$ | 25.26714 | 32 |
| 33 | 1.63448 | -61182 | 42.29862 | $25 \cdot 87896$ | 33 |
| 34 | 1.65900 | $\cdot 60277$ | 43.93309 | 26.48173 | 34 |
| 35 | I 68388 | -59387 | $45 \cdot 59209$ | 27.07560 | 35 |
| 36 | 1.70914 | -58509 | 47.27597 | 27.66068 | 36 |
| 37 | I 73448 | -57644 | 48.98511 | 28.23713 | 37 |
| 38 | I 76080 | . 56792 | $50 \cdot 71989$ 52.48068 | 28.80505 | 38 |
| 39 | 1.78721 | -55953 | 52.48068 | 29.36458 | 39 |
| 40 | 1.81402 | -55126 | 54.26789 | 29.91585 | 40 |
| 4 I | 1.84123 | -54312 | 56.08191 | $30 \cdot 45896$ | 41 |
| 42 | I.86885 | $\cdot 53509$ | 57.92314 | $30 \cdot 99405$ | 42 |
| 43 | I 89688 | -52718 | 59'79199 | 31.52123 | 43 |
| 44 | I 92533 | $\stackrel{51939}{ }$ | 61.68887 | 32.04062 | 44 |
| 45 | I 95421 | -51171 | 63.61420 | 32.55234 | 45 |
| 46 | I 988353 | -50415 | $65 \cdot 5684 \mathrm{I}$ | 33.05649 | 46 |
| 47 | 2.01328 | -49670 | 67.55194 | $33 \cdot 55319$ | 47 |
| 48 | 2.04348 | -48936 | 69.56522 | 34.04255 34.52468 | 48 |
| 49 | 2.07413 | -48213 -47500 | 71.60870 | 34.52468 | 49 |
| 50 | $2 \cdot 10524$ | 47500 | 73.68283 | 34.99969 | 50 |

For explanation see pp. 8-13

| Years | ONE POUND |  | ONE POUND PER ANNOM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 2.13682 | $\cdot 46798$ | 75.78807 | 35.46767 | 51 |
| 52 | $2 \cdot 16887$ | -46107 | 77.92489 | 35.92874 | 52 |
| 53 | $2 \cdot 20141$ | -45426 | $80 \cdot 09376$ | $36 \cdot 38300$ | 53 |
| 54 | 223443 | -44754 | $82 \cdot 29517$ | $36 \cdot 83054$ | 54 |
| 55 | $2 \cdot 26794$ | 444093 | $84 \cdot 52962$ | 37.27147 | 55 |
| 56 | 2.30196 | -43441 | $86 \cdot 79754$ | 37.70588 | 56 |
| 57 | $2 \cdot 33649$ | -42799 | 89.09951 | $38 \cdot 13387$ | 57 |
| 58 | 2.37154 | -42167 | 91.43600 | $38 \cdot 55554$ | 58 |
| 59 | 240711 | -41544 | 93.80754 | $38 \cdot 97097$ | 59 |
| 60 | 2.44322 | -40930 | $96 \cdot 21465$ | $39 \cdot 38027$ | 60 |
| 61 | $2 \cdot 47987$ | -40325 | $98 \cdot 65787$ | 39.78352 | 6 I |
| 62 | 2.51707 | -39729 | 101-13774 | 40.18080 | 62 |
| 63 | $2 \cdot 55482$ | -39142 | 103.65481 | $40 \cdot 57222$ | 63 |
| 64 | 2.59314 | -38563 | $106 \cdot 20963$ | $40 \cdot 95785$ | 64 |
| 65 | 2.63204 | -37993 | 108.80277 | 41.33779 | 65 |
| 66 | 2.67152 | -37432 | 111.4348 | 4171211 | 66 |
| 67 | 2.71160 | -36879 | $114 \cdot 10634$ | 42.08089 | 67 |
| 68 | 2.75227 | -36334 | 116.81793 | $42 \cdot 44423$ | 68 |
| 69 | 2.79355 | -35797 | 119.57020 | $42 \cdot 80220$ | 69 |
| 70 | 2.83546 | -35268 | 122.36375 | $43 \cdot 15487$ | 70 |
| 71 | 2.87799 | -34746 | $125 \cdot 19921$ | $43 \cdot 50234$ | 71 |
| 72 | $2 \cdot 92116$ | - 34233 | 128.07720 | $43 \cdot 84467$ | 72 |
| 73 | $2 \cdot 96498$ | -33727 | 130.99836 | 44.18194 | 73 |
| 74 | 3.00945 | -33229 | 133.96333 | 44.51422 | 74 |
| 75 | 3.05459 | -32738 | 136.97278 | 44.84160 | 75 |
| 76 | $3 \cdot 10041$ | -32254 | 140.02737 | 45.16414 | 76 |
|  | 3.14692 | $\cdot 31777$ | 143.12778 | $45 \cdot 48191$ | 77 |
| 78 | $3 \cdot 19412$ | -31308 | 146.27470 | $45 \cdot 79499$ | 78 |
| 79 | 3.24203 | $\cdot 30845$ | 149.46882 | $46 \cdot 10343$ | 79 |
| 80 | $3 \cdot 29066$ | -30389 | 152.71085 | $46 \cdot 40732$ | 80 |
| 81 | $3 \cdot 34002$ | -29940 | 156.00152 | $46 \cdot 70672$ | 81 |
| 82 | 3.39012 | -29497 | 159.34154 | $47^{\circ} 00170$ | 82 |
| 83 | 3.44097 | -29062 | 162.73166 | 47.29231 | 83 |
| 84 | 3.49259 | -28632 | $166 \cdot 17264$ | $47 \cdot 57863$ | 84 |
| 85 | $3 \cdot 54498$ | -28209 | 169.66523 | $47 \cdot 86072$ | 85 |
| 86 |  | -27792 | 173.21020 |  | 86 |
| 87 | 3.65213 | -2738I | $176 \cdot 80836$ | 48.41246 | 87 |
| 88 | $3 \cdot 7069 \mathrm{I}$ | - 26977 | $180 \cdot 46048$ | $48 \cdot 68222$ | 88 |
| 89 | 3.76251 | -26578 | $184 \cdot 16739$ | $48 \cdot 94800$ | 89 |
| 90 | 3.81895 | -26185 | 187.92990 | 49.20985 | 90 |
| 91 | 3.87623 | -25798 | 191.74885 | 49.46784 | 9r |
| 92 | 3.93438 | -25417 | 195.62508 | $49 \cdot 72201$ | 92 |
| 93 | 3.99339 | -25041 | 199.55946 | 49.97242 | 93 |
| 94 | 4.05329 | -24671 | 203.55285 | 50.21913 | 94 |
| 95 | 4.11409 | -24307 | $207 \cdot 60614$ | $50 \cdot 46220$ | 95 |
| 96 | $4 \cdot 17580$ | $\cdot 23947$ | 211 '72023 | 50.70168 | 96 |
| 97 | 4.23844 | - 23594 | 215.89604 | $50 \cdot 93761$ | 97 |
| 98 | 4.30202 | - 23245 | $220 \cdot 13448$ | $5 \mathrm{SI} \cdot 17006$ | 98 |
| 99 | $4 \cdot 36655$ | -22901 | 224.43650 | $5 \mathrm{I} \cdot 39907$ | 99 |
| 100 | $4 * 43205$ | $\cdot 22563$ | 228.80304 | $51 \cdot 62470$ | 100 |

See also Tables on pp. xx-zzxi

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | 1.01750 | $\cdot 98280$ | 100000 | 0.98280 | 1 |
| 2 | 1.03531 | -96590 | 2.01750 | I.94870 | 2 |
| 3 | 1.05342 | -94929 | 3.05281 | $2 \cdot 89798$ | 3 |
| 4 | 1.07186 | -93296 | 4-10623 | 3.83094 | 4 |
| 5 | 1 -09062 | -91691 | 5'17809 | 4.74786 | 5 |
| 6 | 1-10970 | -90114 | 6.26871 | 5.64900 | 6 |
| 7 | 1-12912 | $\cdot 88564$ | $7 \cdot 3784 \mathrm{I}$ | $6 \cdot 53464$ | 7 |
| 8 | I-14888 | -87041 | $8 \cdot 50753$ | 7.40505 | 8 |
| 9 | I-16899 | -85544 | 9.65641 | 8-26049 | 9 |
| \% | 1-18944 | -84073 | 10.82540 | 9-10122 | 10 |
| II | 1.21026 | -82627 | 12.01484 | 9.92749 | 11 |
| 12 | 1-23144 | -81206 | 13.22510 | 10'73955 | 12 |
| 13 | 1-25299 | $\cdot 79809$ | 14.45654 | 11.53764 | 13 |
| 14 | 1-27492 | $\cdot 78436$ | 15.70953 | 12.32201 | 14 |
| 15 | I 29723 | $\cdot 77087$ | 16.98445 | 13.09288 | 15 |
| 16 | 1.31993 | 75762 | 18-28168 | 13.85050 | 16 |
| 17 | I.34303 | '74459 | 19.60161 | 14.59508 | 17 |
| 18 | I. 36653 | -73178 | 20.94463 | 15.32686 | 18 |
| 19 | I 39045 | ${ }^{7} 71919$ | 22.31117 | 16.04606 | 19 |
| 20 | 1.41478 | $\cdot 70682$ | 23.70161 | $16 \cdot 75288$ | 20 |
| 21 | 1.43954 | -69467 | $25 \cdot 11639$ | 17.44755 | 21 |
| 22 | 146473 | $\cdot 68272$ | $26 \cdot 55593$ | $18 \cdot 13027$ | 22 |
| 23 | 1.49036 | $\cdot 67098$ | 28.02065 | 18.80125 | 23 |
| 24 | I 51644 | -65944 | 29.51102 | 19.46069 | 24 |
| 25 | I 54298 | -64810 | $31 \cdot 02746$ | 20.10878 | 25 |
| 26 | 1-56998 | . 63695 | $32 \cdot 57044$ | $20 \cdot 74573$ | 26 |
| 27 | I.59746 | -62599 | 34.14042 | 21.37173 | 27 |
| 28 | 1.62541 | -61523 | 35'73788 | 21.98695 | 28 |
| 29 | 1.65386 | $\cdot 60465$ | 37-36329 | 22.59160 | 29 |
| 30 | 1.68280 | '59425 | 39.01715 | $23 \cdot 18585$ | 30 |
| 3 I | 171225 | -58403 | $40 \cdot 69995$ | 23.76988 | 3 I |
| 32 | 1.74221 | -57398 | 42.41220 | $24 \cdot 34386$ | 32 |
| 33 | 1.77270 | -56411 | 44.15441 | 24.90797 | 33 |
| 34 | 1.80372 | $\cdot 5544 \mathrm{I}$ | $45^{\prime} 92712$ | 25.46238 | 34 |
| 35 | I.83529 | -54487 | $47 \cdot 73084$ | $26 \cdot 00725$ | 35 |
| 36 | 1.8674I | -53550 | 49.56613 | $26 \cdot 54275$ | 36 |
| 37 | I'90009 | -52629 | 51.43354 | 27.06904 | 37 |
| 38 | $1 \cdot 93334$ | -51724 | 53.33362 | $27 \cdot 58628$ | 38 |
| 39 | 1.96717 | -50834 | 55.26696 | $28 \cdot 09463$ | 39 |
| 40 | 2.00160 | -49960 | $57 \cdot 23413$ | 28.59423 | 40 |
| 41 | 2.03663 | -49101 | $59 \cdot 23573$ | 29.08524 |  |
| 42 | 2.07227 | -48256 | $61 \cdot 27236$ | 29.56780 | 42 |
| 43 | 2.10853 | -47426 | 63.34462 | $30 \cdot 04207$ | 43 |
| 44 | $2 \cdot 14543$ | 46611 | 65.45315 | $30 \cdot 50817$ | 44 |
| 45 | 2.18298 | 45809 | $67 \cdot 59858$ | $30 \cdot 96626$ | 45 |
| 46 | 2.22118 | -45021 | $69 \cdot 78156$ | 31.41647 | 46 |
| 47 | 2.26005 | -44247 | $72 \cdot 00274$ | 31.85894 | 47 |
| 48 | $2 \cdot 29960$ | $\cdot 43486$ | 74.26278 | $32 \cdot 29380$ | 48 |
| 49 | $2 \cdot 33984$ | -42738 | $76 \cdot 56238$ | $32 \cdot 72118$ | 49 |
| 50 | 2.38079 | ${ }^{42003}$ | $78 \cdot 90222$ | 33-14121 | 50 |

For explanation see pp. 8-I3

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 2.42245 | -41280 | $8 \mathrm{I} \cdot 28301$ | 33.55401 | 51 |
| 52 | 2.46485 | -40570 | 83.70547 | 33.95972 | 52 |
| 53 | $2 \cdot 50798$ | -39873 | $86 \cdot 17031$ | 34.35845 | 53 |
| 54 | 2.55187 | -39187 | 88.67829 | 34.75032 | 54 |
| 55 | 2.59653 | $\cdot 38513$ | 91.23016 | 35•13545 | 55 |
| 56 | $2 \cdot 64197$ | $\cdot 37851$ | 93.82669 | 35•51395 | 56 |
| 57 | $2 \cdot 68820$ | -37200 | 96.46866 | 35.88595 | 57 |
| 58 | 2.73524 | -36560 | $99 \cdot \mathrm{I} 5686$ | 36.25155 | 58 |
| 59 | $2 \cdot 783 \mathrm{II}$ | -3593I | 101.89210 | $36 \cdot 61086$ | 59 |
| 60 | 2.83182 | - 35313 | $104 \cdot 67522$ | 36.96399 | 60 |
| 61 | 2.88137 | -34706 | 107.50703 | $37 \cdot 31104$ | 61 |
| 62 | 2.93180 | -34109 | $110 \cdot 38841$ | 37.65213 | 62 |
| 63 | 2.98310 | -33522 | 113.32020 | 37.98735 | 63 |
| 64 | 3.03531 | -32946 | 116.30331 | $38 \cdot 31681$ | 64 |
| 65 | 3.08843 | -32379 | 119.33861 | 38.64060 | 65 |
| 66 | $3 \cdot 14247$ | -31822 | 122.42704 | $38 \cdot 95882$ | 66 |
| 67 | $3 \cdot 19747$ | $\cdot 31275$ | 125.56951 | 39.27157 | 67 |
| 68 | $3 \cdot 25342$ | $\cdot 30737$ | 128.76698 | $39 \cdot 57893$ | 68 |
| 69 | 3.31036 | -30208 | 132.02040 | 39.88102 | 69 |
| 70 | $3 \cdot 36829$ | -29689 | $135 \cdot 33076$ | 40•17790 | 70 |
| 71 | 3.42723 | -29178 | 138.69905 | $40 \cdot 46968$ | 71 |
| 72 | 3.48721 | -28676 | $142 \cdot 12628$ | 40.75645 | 72 |
| 73 | $3 \cdot 54824$ | $\cdot 28183$ | 145.61349 | 41.03828 | 73 |
| 74 | 3.61033 | -27698 | 149.16173 | $41 \cdot 31526$ | 74 |
| 75 | 3.67351 | -27222 | $152 \cdot 77206$ | $41 \cdot 58748$ | 75 |
| 76 | 3.73780 | -26754 | 156.44557 | $4 \mathrm{I} \cdot 85502$ | 76 |
|  | 3.80321 | -26294 | $160 \cdot 18336$ | $42 \cdot 17795$ | 77 |
| 78 | 3.86977 | - 25841 | 163.98657 | 42.37636 | 78 |
| 79 | 3.93749 | - 25397 | 167.85634 | $42 \cdot 63033$ 42.87994 | 79 |
| 80 | 4.00639 | -24960 | 171 793882 | $42 \cdot 87994$ |  |
| 81 | 4.07650 | -24531 | 175.80022 | $43 \cdot 12524$ | $8 \mathrm{8I}$ |
| 82 | $4 \cdot 14784$ | -24109 | $179 \cdot 87672$ | 43.36633 | 82 |
| 83 | $4 \cdot 22043$ | $\cdot 23694$ | 184.02456 | $43 \cdot 60328$ 43.83614 | 83 84 |
| 84 | 4.29429 | - 23287 | 188.24499 | $43 \cdot 83614$ | 84 |
| 85 | 4.36944 | -22886 | 192.53928 | $44 \cdot 06501$ | 85 |
| 86 | 4*44590 | -22493 | $196 \cdot 90872$ | $44 \cdot 28993$ | 86 |
| 87 | $4 \cdot 52371$ | -22106 | $201 \cdot 35462$ | 44.51099 | 87 |
| 88 | 4.60287 | -21726 | 205.87833 | 44.72824 | 88 |
| 89 | $4 \cdot 68342$ | $\cdot 21352$ | 210.48120 | 44.94176 | 89 |
| 90 | $4 \cdot 76538$ | -20985 | 215.16462 | 45.15161 | 90 |
| 91 | 4.84877 | -20624 | 219.93000 | 45.35785 | 91 |
| 92 | 4.93363 | '20269 | 224.77877 | 45.56054 | 92 |
| 93 | 5.01997 | -19920 | 229.71240 | 45.75974 | 93 |
| 94 | 5.10782 | -19578 | 234.73237 | 45.95552 | 94 |
| 95 | 5'19720 | -1924I | $239 \cdot 84018$ | $46 \cdot 14793$ | 95 |
| 96 | $5 \cdot 28815$ | -18910 | 245.03739 | 46.33704 | 96 |
| 97 | $5 \cdot 38070$ | - 18585 | $250 \cdot 32554$ | $46 \cdot 52288$ | 97 |
| 98 | 5.47486 | -18265 | $255 \cdot 70624$ | $46 \cdot 70554$ 46.88505 | 98 98 |
| 99 | $5 \cdot 57067$ | -1795 $\cdot$ $\cdot 17642$ | $261 \cdot 18110$ 266.75177 | 46.88505 | 99 $\mathbf{1 0 0}$ |
| 100 | $5 \cdot 66816$ | ${ }^{1} 7642$ | $266 \cdot 75177$ | $47 \cdot 06147$ | 100 |

See also Tables on pp. xx-xxxi

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | I 02000 | -98039 | 1.00000 | -98039 | 1 |
| 2 | I $\cdot 04040$ | 96117 | 2.02000 | I.94156 | 2 |
| 3 | I 066121 | -94232 | 3.06040 | 2.88388 | 3 |
| 4 | $1 \cdot 08243$ | -92385 | 4.12161 | $3 \cdot 80773$ | 4 |
| 5 | 1•10408 | '90573 | $5 \cdot 20404$ | 4.71346 | 5 |
| 6 | 1-12616 | -88797 | 6.30812 | 5.60143 | 6 |
| 7 | 1-14869 | . 87056 | 7.43428 | $6 \cdot 47199$ | 7 |
| 8 | 1-17166 | - 85349 | $8 \cdot 58297$ | 732548 | 8 |
| 9 | 1-19509 | . 83676 | 9.75463 | $8 \cdot 16224$ | 9 |
| 10 | I.21899 | -82035 | 10.94972 | $8 \cdot 98258$ | Io |
| 11 | I 24337 | -80426 | $12 \cdot 16872$ | 9.78685 | 11 |
| I2 | I 268824 | $\cdot 78849$ | 13.41209 | 10.57534 | 12 |
| 13 | I-2936I | 77303 | $14 \cdot 68033$ | Ir 34837 | 13 |
| 14 | I-31948 | -75788 | 15.97394 | 12-10625 | 14 |
| 15 | I 34587 | 74301 | 17.29342 | $12 \cdot 84926$ | 15 |
| 16 | 1-37279 | $\cdot 72845$ | 18.63928 | 13.57771 | 16 |
| 17 | 1.40024 | $\cdot 71416$ | 20.01207 | 14.29187 | 17 |
| 18 | I-42825 | -70016 | 21.41231 | 14.99203 | 18 |
| 19 | I 4.45681 | -68643 | 22.84056 | $15 \cdot 67846$ | 19 |
| 20 | 1.48595 | $\cdot 67297$ | 24.29737 | 16.35143 | 20 |
| 21 | 1.51567 | -65978 | 25.78332 | 17.01121 | 21 |
| 22 | 1.54598 | -64684 | 27.29898 | 17.65805 | 22 |
| 23 | 1.57690 | -63416 | 28.84496 | 18.29220 | 23 |
| 24 | I.60844 | -62172 | 30.42186 | 18.91393 | 24 |
| 25 | I 64061 | -60953 | $32 \cdot 3030$ | 19.52346 | 25 |
| 26 | 1.67342 | -59758 | $33 \cdot 67090$ | $20 \cdot 12104$ | 26 |
| 27 | 1 70689 | -58586 | 35.34432 | 20.70690 | 27 |
| 28 | 1.74102 | -57437 | 37.05121 | 21.28127 | 28 |
| 29 | 1.77584 | -56311 | 38.79223 | 21.84438 | 29 |
| 30 | I.81136 | $\cdot 55207$ | $40 \cdot 56808$ | $22 \cdot 39646$ | 30 |
| 3 I | I.84759 | -54125 | $42 \cdot 37944$ | 22.93770 | 31 |
| 32 | I.88454 | -53063 | $44 \cdot 22703$ | 23.46833 | 32 |
| 33 | 1.92223 | -52023 | 46.11157 | 23.98856 | 33 |
| 34 | I.96068 | -51003 | 48.03380 | 24.49859 | 34 |
| 35 | I 999989 | $\cdot 50003$ | 49.99447 | 24.99862 | 35 |
| 36 | $2 \cdot 03989$ | 49022 | $51 \cdot 99436$ | 25.48884 | 36 |
| 37 | $2 \cdot 08068$ | -4806r | 54.03425 | 25.96945 | 37 |
| 38 | $2 \cdot 12230$ | -47119 | 56.11494 | $26 \cdot 44064$ | 38 |
| 39 | $2 \cdot 16474$ | -46195 | $58 \cdot 23723$ | $26 \cdot 90259$ | 39 |
| 40 | $2 \cdot 20803$ | 45289 | $60 \cdot 40198$ | 27.35548 | 40 |
| 41 | 2.25220 | -44401 | $62 \cdot 61002$ | 27.79949 | 4 I |
| 42 | $2 \cdot 29724$ | - 43530 | $64 \cdot 86222$ | 28.23479 | 42 |
| 43 | $2 \cdot 34319$ | -42677 | $67 \cdot 15947$ | 28.66156 | 43 |
| 44 | 2.39005 | -41840 | 69.50265 | 29.07996 | 44 |
| 45 | 2.43785 | 41020 | 71.89271 | 29.49016 | 45 |
| 46 | 2.48661 | '40215 | 74.33056 | 29.89231 | 46 |
| 47 | 2.53634 | -39427 | $76 \cdot 81717$ | 30.28658 | 47 |
| 48 | $2 \cdot 58707$ | -38654 | 79.35352 | 30.67312 | 48 |
| 49 | $2 \cdot 6388 \mathrm{I}$ | $\cdot 37896$ | 81.94059 | $31^{\circ} \mathrm{O} 5208$ | 49 |
| 50 | $2 \cdot 69159$ | -37153 | 84.57940 | 31'42361 | 50 |

For explanation see pp. 8-13

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 2.74542 | $\cdot 36424$ | 87.27098 | 31.78785 | 51 |
| 52 | $2 \cdot 80033$ | -35710' | $90.01640^{\circ}$ | $32 \cdot 14495$ | 52 |
| 53 | 2.85633 | -35010 | 92.81673 | 32.49505 | 53 |
| 54 | 2.91346 | $\cdot 34323$ | 95.67307 | $32 \cdot 83828$ | 54 |
| 55 | 2.97173 | -33650 | $98 \cdot 58653$ | 33'17479 | 55 |
| 56 | 3.03117 | -32991 | 101.55826 | $33 \cdot 50469$ | 56 |
| 57 | 3.09179 | -32344 | 104.58943 | $33 \cdot 82813$ | 57 |
| 58 | $3 \cdot 15362$ | -31710 | 1076812 I | $34 \cdot 14523$ | 58 |
| 59 | 3.21670 | -31088 | 110.83484 | 34*45610 | 59 |
| 60 | $3 \cdot 28 \mathrm{IO}$ | -30478 | 114.05154 | 34.76089 | 60 |
| 61 | 3.34665 | -29881 | 117.33257 | 35.05969 | 61 |
| 62 | 3.41358 | -29295 | 120.67922 | 35.35264 | 62 |
| 63 | 3.48 I 86 | -28720 | 124.09280 | 35.63984 | 63 |
| 64 | 3.55149 | -28157 | 127.57466 | 35.9214 I | 64 |
| 65 | $3 \cdot 62252$ | -27605 | 131.12615 | $36 \cdot 19746$ | 65 |
| 66 | $3 \cdot 69497$ | -27064 | $134 * 74868$ | $36 \cdot 468$ 10 | 66 |
| 67 | $3 \cdot 76887$ | - 26533 | 138.44365 | $36 \cdot 73343$ | 67 |
| 68 | $3 \cdot 84425$ | -26013 | 142.21252 | 36.99356 | 68 |
| 69 | 3.92114 | -25503 | 146.05677 | 37.24859 | 69 |
| 70 | 3•99956 | $\cdot 25003$ | 149.97791 | 37.49862 | 70 |
| 71 | 4.07955 | -24513 | 153.97747 | 37.74374 | 71 |
| 72 | 4-16114 | -24032 | 158.05702 | 37.98406 | 72 |
| 73 | 4.24436 | -2356I | $162 \cdot 21816$ | $38 \cdot 21967$ | 73 |
| 74 | 4.32925 | -23099 | 106.46252 | 38.45066 | 74 |
| 75 | 4.41584 | -22646 | $170 \cdot 79177$ | $3^{8.67711}$ | 75 |
| 76 | 4.50415 | -22202 | 175.20761 | 38.89913 | 76 |
| 77 | 4.59424 | -21766 | 179.71176 | $39 \cdot 11679$ | 77 |
| 78 | $4 \cdot 68612$ | -21340 | 184.30599 | 39.33019 | 78 |
| 79 | 4.77984 | -20921 | 188.99211 | 39.53940 | 79 |
| 80 | 4.87544 | -20511 | 193.77195 | 39.7445 I | 80 |
| 81 | 4.97295 | -20109 | 198.64739 | 39.94560 | 81 |
| 82 | 5.0724 I | -19715 | $203 \cdot 62034$ | $40 \cdot 14275$ | 82 |
| 83 | $5.173^{85}$ | -19328 | 208.69275 | 40.33603 | 83 |
| 84 | 5.27733 | -18949 | 213.86660 | $40 \cdot 52551$ | 84 |
| 85 | 5.38288 | -18577 | $219 \cdot 14394$ | $40 \cdot 71129$ | 85 |
| 86 | 5.49054 | -18213 | 224.52681 | $40 \cdot 89342$ | 86 |
| 87 | $5 \cdot 60035$ | -17856 | $230 \cdot 01735$ | $41^{\circ} \mathrm{O} 7198$ | 87 |
| 88 | 5.71235 | -17506 | 235.61770 | 41.24704 | 88 |
| 89 | $5 \cdot 82660$ | -17163 | 241.33005 | 41.41867 | 89 |
| 90 | $5 \cdot 94313$ | -16826 | 247'I 5665 | 41-58693 | 90 |
| 91 | 6.06200 | -16496 | 253.09979 | 41.75189 | 91 |
| 92. | $6 \cdot 18324$ | -16173 | 259-16178 | 4191362 | 92 |
| 93 | $6 \cdot 30690$ | -15856 | $265 \cdot 34502$ | $42^{\circ} \mathrm{O} 721^{\prime} 7$ | 93 |
| 94. | 6.43304 | -15545 | 271.65192 | 42.22762 | 94 |
| 95 | 6.56170 | -15240 | $278 \cdot 08496$ | $42 \cdot 38002$ | 95 |
| 96 | $6 \cdot 69293$ | -14941 | 284.64666 | 42:52943 | 96 |
| 97 | 6.82679 | $\cdot 14648$ | $291 \cdot 33959$ | 42.67591 | 97 |
| 98 | $6 \cdot 96333$ | -14361 | 298-16638 | 42.81952 | 98 |
| 99 | $7 \cdot 10259$ | -14079 | $305 \cdot 12971$ | $42 \cdot 66032$ | 99 |
| 100 | $7 \cdot 24465$ | -13803 | 312.23230 | 43.09835 | 100 |

See also Tables on pp. xx-xxxi

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | $1 \bigcirc 02250$ | -97800 | 1.00000 | 0.97800 | I |
| 2 | 1.04551 | -95647 | 2.02250 | I.93447 | 2 |
| 3 | 1.06903 | '93543 | 3.06801 | 2.86990 | 3 |
| 4 | 1.09308 | -91484 | 4.13704 | $3 \cdot 78474$ | 4 |
| 5 | 1-11768 | -8947 1 | $5 \cdot 23012$ | 4.67945 | 5 |
| 6 | $1 \cdot 14283$ | . 87502 | 6.34780 | $5 \cdot 55448$ | 6 |
| 7 | 1-16854 | -85577 | 7.49062 | 6.41025 | 7 |
| 8 | I 19483 | -83694 | 8.65916 | 724718 | 8 |
| 9 | 1.22171 | -81852 | 9.85399 | 8.06571 | 9 |
| 10 | I 24920 | -80051 | II 07571 | $8 \cdot 86622$ | 10 |
| 11 | 127731 | $\cdot 78290$ | 12.32491 | $9 \cdot 64911$ | 1 I |
| 12 | 120605 | $\cdot 76567$ | 13.60222 | 10.41478 | 12 |
| 13 | $1 \cdot 33544$ | -74882 | $14 \times 90827$ | II•16360 | 13 |
| 14 | $1 \cdot 36548$ | $\cdot 73234$ | 16.24371 | II.89594 | 14 |
| 15 | 1 39621 | $\cdot 71623$ | 17.60919 | 12.61217 | 15 |
| 16 | 1.42762 | '70047 | 19.00540 | $13.31263{ }^{\prime}$ | 16 |
| 17 | 1.45974 | -68505 | 20.43302 | 13.99768 | 17 |
| 18 | 1.49259 | -66998 | 21.89276 | 14.66766 | 18 |
| 19 | 1.52617 | $\cdot 6523$ | 23.38535 | 15.32290 | 19 |
| 20 | $1 \cdot 56051$ | -64082 | 24.91152 | 15.96371 | 20 |
| 2 L | 1-59562 | . 62672 | 26.47203 | 16.59043 | 21 |
| 22 | 1.63152 | -61292 | 28.06765 | 17.20335 | 22 |
| 23 | 1.66823 | -59944 | 29.69917 | 17.80279 | 23 |
| 24 | $1 \cdot 70577$ | -58625 | $3 \mathrm{3} \cdot 36740$ | $18 \cdot 38904$ | 24 |
| 25 | 1.74415 | -57335 | 33.07317 | 18.96238 | 25 |
| 26 | 1.78339 | -56073 | 34.81732 | 19.52311 | 26 |
| 27 | 1.82352 | -54839 | $36 \cdot 60071$ | 20.07150 | 27 |
| 28 | 1.86454 | -53632 | $38 \cdot 42422$ | $20 \cdot 60783$ | 28 |
| 29 | 1.90650 | -52452 | $40 \cdot 28877$ | 21.13235 | 29 |
| 30 | 1.94939 | -51298 | 42.19526 | 21*64533 | 30 |
| 3 3 | 1.99325 | $\cdot 50169$ | $44 \cdot 14466$ | $22 \cdot 14702$ | 3 I |
| 32 | 2.03810 | -49065 | $46 \cdot 13791$ | 22.63767 | 32 |
| 33 | 2.08396 | -47986 | 48-17602 | $23 \cdot 11753$ | 33 |
| 34 | $2 \cdot 13085$ | -46930 | 50.25998 | 23.58683 | 34 |
| 35 | 2•17879 | -45897 | $52 \cdot 39083$ | 24.04580 | 35 |
| 36 | $2 \cdot 22782$ | -44887 | $54 \cdot 56962$ | 24.49467 | 36 |
| 37 | 2.27794 | -43899 | $56 \cdot 79744$ | 24.93366 | 37 |
| 38 | 2.32920 | $\cdot 42933$ | 59.07539 | 25.36299 | 38 |
| 39 | 2.38160 | -41989 | 61.40457 | 25.78288 | 39 |
| 40 | 2.43519 | -41065 | 63.78618 | 26.19352 | 40 |
| 4 I | 2.48998 | -4016I | $66 \cdot 22137$ | 26.59513 | 4 I |
| 42 | $2 \cdot 54601$ | - 39277 | 68.71135 | 26.98790 | 42 |
| 43 | 2.60329 | -38413 | $71 \cdot 25735$ | 27-37203 | 43 |
| 44 | $2 \cdot 66186$ | -37568 | $73 \cdot 86064$ | 27.74771 | 44 |
| 45 | 2.72176 | -3674I | 76.52251 | 28.11512 | 45 |
| 46 | 2.78300 | -35932 | 79.24426 | 28.47444 | 46 |
| 47 | 2.84561 | -35142 | 82.02726 | 28.82586 | 47 |
| 48 | $2 \cdot 90964$ | -34369 | 84.87287 | $29 \cdot 16955$ | 48 |
| 49 | 2.97511 | -33612 | 87.78251 | 29.50567 | 49 |
| 50 | 3.04205 | -32873 | 90'75762 | 29.83440 | 50 |

For explanation see pp. 8-13

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | $3 \cdot 11049$ | $\cdot 32149$ | 93.79966 | $30 \cdot 15589$ | 51 |
| 52 | $3 \cdot 18048$ | -31442 | $96 \cdot 91016$ | $30 \cdot 47031$ | 52 |
| 53 | 3.25204 | -30750 | 100.09064 | $30 \cdot 77781$ | 53 |
| 54 | $3 \cdot 32521$ | -30073 | $103 \cdot 34267$ | 31.07854 | 54 |
| 55 | 3.40003 | -29412 | 106.66788 | 31.37265 | 55 |
| 56 | 3.47653 | -28764 | $110 \cdot 06791$ | 3166030 | 56 |
| 57 | 3.55475 | -28131 | 113.54444 | 31.94161 | 57 |
| 58 | 3.63473 | -27512 | 117.09919 | $32 \cdot 21673$ | 58 |
| 59 | 3.71651 | -26907 | 120.73392 | $32 \cdot 48580$ | 59 |
| 60 | 3.80013 | -26315 | 124.45043 | 32-74895 | 60 |
| 61 | 3.88564 | - 25736 | 128.25057 | 33.00631 | 6 I |
| 62 | 3.97306 | - 25169 | $132 \cdot 13621$ | 33.25800 | 62 |
| 63 | 4.06246 | -24616 | $136 \cdot 10927$ | $33 \cdot 50416$ | 63 |
| 64 | 4-15386 | -24074 | $140 \cdot 17173$ | 33.74490 | 64 |
| 65 | 4.24733 | - 23544 | 144.32559 | 33.98034 | 65 |
| 66 | 4.34289 | -23026 | 148.57292 | 34.21060 | 66 |
| 67 | 4.44061 | -22519 | 152.91581 | 34.43580 | 67 |
| 68 | $4 \cdot 54052$ | -22024 | 157.35642 | 34.65604 | 68 |
| 69 | $4 \cdot 64268$ | -21539 | 161.89694 | 34.87143 | 69 |
| 70 | 4.74714 | -21065 | $166 \cdot 53962$ | 35.08208 | 70 |
| 7 I | 4.85395 | -20602 | $171 \cdot 28676$ | 35.28810 | 71 |
| 72 | 4.96317 | -20148 | 176.14071 | 35.48959 | 72 |
| 73 | 5'07484 | -19705 | 181.10388 | $35 \cdot 68664$ | 73 |
| 74 | $5 \cdot 18902$ | -1927 I | $186 \cdot 17871$ | $35 \cdot 87935$ | 74 |
| 75 | $5 \cdot 30577$ | -18847 | 191 36774 | ${ }_{36} \cdot 06783$ | 75 |
| 76 | 5.42515 | -18433 | 196.67351 | 36.25215 | 76 |
| 77 | 5.54722 | -18027 | 202.09866 | $36 \cdot 43242$ | 77 |
| 78 | 5.67203 | -17630 | 207.64588 | $36 \cdot 60873$ | 78 |
| 79 | $5 \times 79965$ | -17242 | 213.31792 | $36 \cdot 78115$ | 79 |
| 80 | 5.93015 | -16863 | 219•11757 | 36.94978 | 80 |
| 81 | 6.06357 | -16492 | 225.04771 | $37 \cdot 11470$ | 8 8 |
| 82 | $6 \cdot 20000$ | -16129 | 231'11129 | 37.27599 | 82 |
| 83 | 6.33950 | -15774 | 237.31129 | 37.43373 | 83 |
| 84 | $6 \cdot 48214$ | -15427 | $243 \cdot 65080$ | $37 \cdot 58800$ | 84 |
| 85 | 6.62799 | - 5088 | 250*13294 | 37.73888 | 85 |
| 86 | $6 \cdot 77712$ | -14756 | 256.76093 | $37 \cdot 88643$ | 86 |
| 87 | $6 \cdot 92961$ | -1443 | 263.53805 | $38 \cdot 03074$ | 87 |
| 88 | $7 \cdot 08552$ | -1413 | 270.46766 | $38 \cdot 17187$ | 88 |
| 89 | 7.24495 | -13803 | $277 \cdot 55318$ | $38 \cdot 30990$ | 89 |
| 90 | $7 \cdot 40796$ | -13499 | 284.79813 | 38.44489 | 90 |
| 91 | 7.57464 | -13202 | 29220608 | $38 \cdot 57691$ | 91 |
| 92 | 7774507 | -12911 | 299.78072 | $38 \cdot 70602$ | 92 |
| 93 | 7.91933 | -12627 | $307 \cdot 52579$ | $38 \cdot 83230$ | 93 |
| 94 | $8 \cdot 09752$ | -12349 | 315.44512 | $38 \cdot 95579$ | 94 |
| 95 | $8 \cdot 27971$ | -12078 | $323 \cdot 54263$ | $39 \cdot 07657$ | 95 |
| 96 | 8.46600 | -11812 | 331.82234 | 39-19469 | 96 |
| 97 | $8 \cdot 65649$ | -11552 | $340 \cdot 28834$ | 39.31021 | 97 |
| 98 | $8 \cdot 85126$ | -11298 | $348 \cdot 94483$ | 39.42319 | 98 |
| 99 | 9.05041 | -11049 | 357 '79609 | 39.53368 | 99 |
| 100 | 9.25405 | -10806 | 366 -84650 | 39.64174 | 100 |

See also Tables on pp. xx-xxxi

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | 1.02500 | '97561 | 1 -00000 | -97561 | 1 |
| 2 | I.05062 | 95181 | 2.02500 | I 92742 | 2 |
| 3 | I '07689 | -92860 | 3.07562 | 2.85602 | 3 |
| 4 | I 110381 | -90595 | 4.15252 | $3 \cdot 76197$ | 4 |
| 5 | I-13141 | . 88385 | $5 \cdot 25633$ | $4 \cdot 64583$ | 5 |
| 6 | I-15969 | -86230 | 6.38774 | $5 \cdot 50812$ | 6 |
| 7 | 1-18869 | -84127 | $7 \cdot 54743$ | $6 \cdot 34939$ | 7 |
| 8 | I 121840 | -82075 | 8.73612 | 7-17014 | 8 |
| 9 | I 248886 | -80073 | 9.95452 | 7.97087 | 9 |
| 10 | 1 28008 | $\cdot 78120$ | 11.20338 | 8.75206 | 10 |
| 11 | $1 \cdot 31209$ | $\cdot 76214$ | 12.48347 | 9.51421 | 11 |
| 12 | 1.34489 | -74356 | 1379555 | 10.25776 | 12 |
| 13 | 1.3785 I | $\cdot 72542$ | 15.14044 | 10.98318 | 13 |
| 14 | 141297 | ${ }^{7} 70773$ | 16.51895 | 11.69091 | 14 |
| 15 | 1-44830 | -69047 | 17.93193 | 12.38138 | 15 |
| 16 | I.4845 | -67363 | 19:38022 | 13.05500 | 16 |
| 17 | 1-52162 | -65720 | $20 \cdot 86473$ | 13.71220 | 17 |
| 18 | I 559966 | -6417 | 22.38635 | 14.35336 | 18 |
| 19 | r.59865 | 62553 | 23.94601 | 14.97889 | 19 |
| 20 | I. 63862 | -61027 | 25.54466 | 15.58916 | 20 |
| 21 | 1.67958 | -59539 | $27 \cdot 18327$ | 16.18455 | 2 I |
| 22 | 1.72157 | -58086 | $28 \cdot 86286$ | 16.76541 | 22 |
| 23 | 1.76461 | -56670 | $30 \cdot 58443$ | 17.33211 | 23 |
| 24 | I-80873 | -55288 | 32.34904 | 17.88499 | 24 |
| 25 | I 85394 | -53939 | $34 \cdot 15776$ | 18.42438 | 25 |
| 26 | I 900029 | -52623 | 36.01171 | I $8 \cdot 9506 \mathrm{I}$ | 26 |
| 27 | 1.94780 | -51340 | 37.91200 | 19.46401 | 27 |
| 28 | I.99650 | -50088 | 39.85980 | 19.96489 | 28 |
| 29 | 2.04640 | -48866 | 41.85630 | $20 \cdot 45355$ | 29 |
| 30 | 2.09757 | -47674 | 43.90270 | 20.93029 | 30 |
| 31 | $2 \cdot 15000$ | -46511 | $46 \cdot 00027$ | 21.39540 | 3 I |
| 32 | $2 \cdot 20376$ | -45377 | $48 \cdot 15028$ | $2 \mathrm{I} \cdot 849 \mathrm{I} 8$ | 32 |
| 33 | $2 \cdot 25885$ | -44270 | $50 \cdot 35403$ | 22.29188 | 33 |
| 34 | $2 \cdot 31532$ | -43191 | 52.61289 | $22 \cdot 72379$ | 34 |
| 35 | 2.3732 I | -42137 | 54:9282 I | $23 \cdot 14516$ | 35 |
| 36 | 2.43254 | $\cdot 41109$ | 57.30141 | 23.55625 | 36 |
| 37 | $2 \cdot 49335$ | , 40107 | 59.73395 | 23.95732 | 37 |
| 38 | $2 \cdot 55568$ | -39128 | $62 \cdot 22730$ | 24.34860 | 38 |
| 39 | 2.61957 | $\cdot 38174$ | $64 \cdot 78298$ | $24 \cdot 73034$ | 39 |
| 40 | $2 \cdot 68506$ | $\cdot 37243$ | 67:40256 | $25 \cdot 10277$ | 40 |
| 41 | $2 \cdot 75219$ | $\cdot 36335$ | 70.08762 | 25.46612 | 41 |
| 42 | $2 \cdot 82100$ | -35448 | 72.83981 | 25.82061 | 42 |
| 43 | 2.89152 | $\cdot 34584$ | $75 \cdot 66081$ | $26 \cdot 16645$ | 43 |
| 44 | 2.96381 | -33740 | 78.55232 | $26 \cdot 50385$ | 44 |
| 45 | 3.03790 | -32917 | 81:51613 | 26.83302 | 45 |
| 46 | $3 \cdot 11385$ | - 32115 | 84.55403 | 27.15417 | 46 |
| 47 | 3.19169 | -31331 | 87.66788 | 27.46748 | 47 |
| 48 | 3.27149 | -30567 | 90.85958 | 27.77315 | 48 |
| 49 | 3.35328 3.43715 | -29822 | 94-13107 | 28.07137 | 49 |
| 50 | 3.43711 | -29094 | 97'48435 | 28.36231 | 50 |

For explanation see pp. 8-I 3

INTEREST TABLES
$2 \frac{1}{2} \%$

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 3.52304 | -28385 | 100.92146 | 28.64616 | 51 |
| 52 | 3.61111 | $\cdot 27692$ | 104.44449 | 28.92308 | 52 |
| 53 | 3.70139 | -27017 | 108.05561 | 29.19325 | 53 |
| 54 | 3.79392 | -26358 | 1 II 75700 | 29.45683 | 54 |
| 55 | 3.88877 | -25715 | 115.55092 | 29.71398 | 55 |
| 56 | 3.98599 | -25088 | 119.43969 | 29.96486 | 56 |
| 57 | 4.08564 | -24476 | 123.42569 | $30 \cdot 20962$ | 57 |
| 58 | 4.18778 | -23879 | 127-51133 | 30.44841 | 58 |
| 59 | $4 \cdot 29248$ | -23296 | 131.69911 | $30 \cdot 68137$ | 59 |
| 60 | 4.39979 | -22728 | I 35.99 I 59 | $30 \cdot 90866$ | 60 |
| 61 | 4.50978 | -22174 | 140.39138 | $3 \mathrm{I} \cdot \mathrm{I} 3040$ | 61 |
| 62 | 4.62253 | -21633 | 14490116 | 31.34673 | 62 |
| 63 | 4.73809 | -21106 | 149.52369 | 31.55778 | 63 |
| 64 | 4.85654 | -20591 | 154.26179 | 31.76369 | 64 |
| 65 | 4.97796 | -20089 | 159-11833 | 31.96458 | 65 |
| 66 | $5 \cdot 10241$ | -19599 | 164*09629 | 32-16056 | 66 |
| 67 | $5 \cdot 22997$ | -19121 | 169•19889 | $32 \cdot 35177$ | 67 |
| 68 | $5 \cdot 36072$ | -18654 | 174.42866 | 32.5383 I | 68 |
| 69 | 5.49473 | -18199 | 179.78938 | $32 \cdot 72030$ | 69 |
| 70 | 5.63210 | -17755 | 185.28411 | $32 \cdot 89786$ | 70 |
| 71 | 577291 | -17322 | 190.91622 | 33.07108 | 71 |
| 72 | 5.91723 | -16900 | $196 \cdot 68912$ | 33.24008 | 72 |
| 73 | 6.06516 | -16488 | $202 \cdot 60635$ | 33.40495 | 73 |
| 74 | $6 \cdot 21679$ | -16085 | 208.6715 I | 33.5658 I | 74 |
| 75 | $6 \cdot 3722 \mathrm{I}$ | -15693 | 214.88829 | 33.72274 | 75 |
| 76 | $6 \cdot 53151$ | -15310 | $221 \cdot 26050$ | 33.87584 | 76 |
| 77 | 6.69480 | -14937 | 227.79201 | 34.02521 | 77 |
| 78 | 6.86217 | -14573 | 234.48681 | $34 \cdot 17094$ | 78 |
| 79 | $7{ }^{\circ} 03372$ | -14217 | 241.34898 | 34.31311 | 79 |
| 80 | $7 \cdot 20957$ | - 13870 | $248 \cdot 3827 \mathrm{I}$ | 34.45182 | 80 |
| 81 | $7 \cdot 3898 \mathrm{I}$ | -13532 | $255 \cdot 59228$ | 34.58714 | 81 |
| 82 | 7.57455 | - 13202 | 262.98209 | 34.71916 | 82 |
| 83 | 7.76392 | - 12880 | $270 \cdot 55664$ | $34 \cdot 84796$ | 83 |
| 84 | 7.95801 | -12566 | $278 \cdot 32056$ | 34.97362 | 84 |
| 85 | 8.15696 | -12259 | $286 \cdot 27857$ | $35^{\circ} \mathrm{O} 62 \mathrm{I}$ | 85 |
| 86 | $8 \cdot 36089$ | - 11960 | 294.43553 | 35.21582 | 86 |
| 87 | $8 \cdot 56991$ | - 1669 | 302.79642 | 35.33251 | 87 |
| 88 | $8 \cdot 78416$ | -11384 | 311.36633 | 35.44635 | 88 |
| 89 | 9.00376 | -11106 | $320 \cdot 15049$ | 35.55741 | 89 |
| 90 | 9'22886 | -10836 | 329'15425 | $35 \cdot 66577$ | 90 |
| 91 | 9.45958 | -10571 | $338 \cdot 38311$ | 35.77148 | 91 |
| 92 | 9.69607 | -10313 | 347.84269 | $35 \cdot 87462$ | 92 |
| 93 | 9.93847 | -10062 | $357 \cdot 53875$ | 35.97523 | 93 |
| 94 | 10.18693 | -09817 | 367.47722 | $36 \cdot 7340$ | 94 |
| 95 | 10.44160 | -09577 | $377 \cdot 66415$ | $36 \cdot 16917$ | 95 |
| 96 | 10.70264 | -09343 | 388•10576 | 36.26261 | 96 |
| 97 | 10.97021 | -09116 | 398.80840 | $36 \cdot 35376$ | 97 |
| 98 | II 124447 | -08893 | 409.77861 | $36 \cdot 44269$ | 98 |
| 99 | $1 \mathrm{I} \cdot 52558$ | -08676 | 421.02308 | $36 \cdot 52946$ | 99 |
| 100 | 11.81372 | -08465 | $432 \cdot 54865$ | 36.61410 | 100 |

see also Tables on pp. xx-xxxi
(63)

INTEREST TABLES

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | 1.02750 | -97324 | 1.00000 | 0.97324 | 1 |
| 2 | 105576 | -94719 | 2.02750 | 1.92042 | 2 |
| 3 | 108479 | -92184 | 3.08326 | 2.84226 | 3 |
| 4 | 1-11462 | $\cdot 89717$ | $4 \cdot 16805$ | $3 \cdot 73943$ | 4 |
| 5 | 1-14527 | -87315 | $5 \cdot 28267$ | 4.61258 | 5 |
| 6 | 1•17677 | -84978 | 6.42794 | $5 \cdot 46237$ | 6 |
| 7 | 1-20913 | -82704 | 7.60471 | 6.28941 | 7 |
| 8 | 1.24238 | -80491 | $8.813^{84}$ | 7.09431 | 8 |
| 9 | 127655 | $\cdot 78336$ | 10.05622 | $7 \cdot 87768$ | 9 |
| 10 | 1.31165 | $\cdot 76240$ | 11.33276 | $8 \cdot 64008$ | 10 |
| II | 1-34772 | ${ }^{7} 7199$ | 12.64442 | $9 \cdot 38207$ | 11 |
| 12 | 1.38478 | $\cdot 72213$ | 13.99214 | 10.10420 | 12 |
| 13 | 1.42287 | $\cdot 7028 \mathrm{I}$ | 15.37692 | $10 \cdot 80701$ | 13 |
| 14 | 1.46199 | -68400 | 16.79979 | 11.49101 | 14 |
| 15 | 1.50220 | -66569 | 18.26178 | 12.15670 | 15 |
| 16 | $1 \cdot 54351$ | $\cdot 64787$ | 19.76398 | 12.80457 | 16 |
| 17 | 1.58596 | $\cdot 63053$ | 21.30749 | 13.43511 | 17 |
| 18 | I.62957 | $\cdot 61366$ | 22.89344 | 14.04877 | 18 |
| 19 | 1.67438 | -59723 | 24.52301 | 14.64600 | 19 |
| 20 | $1 \cdot 72043$ | -58125 | 26.19740 | 15.22725 | 20 |
| 21 | 1.76774 | -56569 | 27.91783 | 15.79295 | 21 |
| 22 | $1.81635^{\circ}$ | - 55055 | 29.68557 | 16.34350 | 22 |
| 23 | 1.86630 | -53582 | 31.50192 | 16.87932 | 23 |
| 24 | 1.91763 | -52148 | 33.36822 | 17.40080 | 24 |
| 25 | $1 \cdot 97036$ | -50752 | $35 \cdot 28585$ | 17.90832 | 25 |
| 26 | 2.02455 | -49394 | 37.25621 | 18.40226 | 26 |
| 27 | 2.08022 | -48072 | 39.28075 | 18.88297 | 27 |
| 28 | $2 \cdot 13743$ | -46785 | 41.36098 | 19.35083 | 28 |
| 29 | $2 \cdot 1962 \mathrm{I}$ | $\cdot 45533$ | 43.49840 | 19.80616 | 29 |
| 30 | 225660 | -44314 | $45 \cdot 6946 \mathrm{I}$ | 20.24930 | 30 |
| 37 | $2 \cdot 31866$ | -43128 | 47.95121 | 20.68059 | 3 I |
| 32 | $2 \cdot 38242$ | -41974 | $50 \cdot 26987$ | $2 \mathrm{I} \cdot 10033$ | 32 |
| 33 | 2.44794 | -40851 | $52 \cdot 65229$ | 21.50883 | 33 |
| 34 | 2.51526 | -39757 | $55 \cdot 10023$ | 21.90641 | 34 |
| 35 | $2 \cdot 58443$ | -38693 | $57 \cdot 61548$ | 22.29334 | 35 |
| 36 | $2 \cdot 65550$ | -37658 | 60.19991 | $22 \cdot 66992$ | 36 |
| 37 | 2.72852 2.80356 | -36650 | $62 \cdot 85541$ | 23.03642 | 37 |
| 38 | 2.80356 | $\cdot 35669$ | 65.58393 | 23.39311 | 38 |
| 39 | 2.88066 | - 34714 | $68 \cdot 38749$ | 23.74025 | 39 |
| 40 | $2 \cdot 95987$ | -33785 | $71 \cdot 26815$ | 24.07810 | 40 |
| 41 | 3.04127 | -32881 | 74.22802 | 24.40691 | 41 |
| 42 | $3 \cdot 12491$ | $\cdot 32001$ | 77.26929 | 24.72692 | 42 |
| 43 | 3.21084 | $\cdot 31144$ | 80.39419 | 25.03837 | 43 |
| 44 | 3.29914 | - 30311 | 83.60504 | 25.34147 | 44 |
| 45 | $3 \cdot 38986$ | -29500 | 86.90417 | 25.63647 | 45 |
| 46 | 3.48309 | -28710 | 90.29404 | 25.92357 | 46 |
| 47 | $3 \cdot 57887$ | $\cdot 27942$ | 93.77712 | $26 \cdot 20299$ | 47 |
| 48 | 3.67729 | $\cdot 27194$ | 97.35600 | $26 \cdot 47493$ | 48 |
| 49 50 | 3.77842 3.88232 | -26466 | 101.03329 | $26 \cdot 73959$ | 49 |
| 50 | 3.88232 | $\cdot 25758$ | 104.81170 | 26.99717 | 50 |

For explanation see pp. 8-13

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 3.98909 | - 25068 | 108.69402 | 27.24785 | 51 |
| 52 | 4.09879 | -24397 | 112.68311 | 27.49183 | 52 |
| 53 | 4.21150 | -23744 | ${ }^{116.78189}$ | 27.72927 | 53 |
| 54 | 4.32732 | -23109 | $120.9934{ }^{\circ}$ | $27 \cdot 96036$ | 54 |
| 55 | 4.44632 | -22491 | 125.32071 | $28 \cdot 18527$ | 55 |
| 56 | 4.56859 | -21889 | 129.76703 | 28.40415 | 56 |
| 57 | 4.69423 | -21303 | 134.33563 | $28 \cdot 61718$ | 57 |
| 58 | 4.82332 | $\cdot 20733$ | 139.02986 | 28.82451 | 58 |
| 59 | 4.95596 | -20178 | 143.85318 | 29.02628 | 59 |
| 60 | 5.09225 | -19638 | 148.80914 | 29.22266 | 60 |
| 6I | $5 \cdot 23229$ | -19112 | 153.90139 | 29.41378 | 61 |
| 62 | $5 \cdot 37618$ | -18601 | I $59 \cdot 13368$ | 29.59979 | 62 |
| 63 | $5 \cdot 52402$ | -18103 | 164.50986 | 29.78082 | 63 |
| 64 | $5 \cdot 67593$ | -17618 | 170.03388 | 29.95700 | 64 |
| 65 | $5 \cdot 83202$ | -17147 | $175 \cdot 70981$ | 30-12846 | 65 |
| 66 | 5.99240 | -16688 | 181.54183 | 30-29534 | 66 |
| 67 | $6 \cdot 15719$ | -16241 | 187.53423 | 30.45775 | 67 |
| 68 | $6 \cdot 32651$ | -15806 | 193.69142 | $30 \cdot 61582$ | 68 |
| 69 | $6 \cdot 50049$ | -15383 | $200 \cdot 01793$ | $30 \cdot 76965$ | 69 |
| 70 | 6.67926 | -14972 | $206 \cdot 51843$ | 30.91937 | 70 |
| 71 | 6.86294 | -14571 | 213.19768 | 31.06508 | 71 |
| 72 | $7 \cdot 05167$ | $\cdot 14181$ | 220.06062 | $31 \cdot 20689$ | 72 |
| 73 | 7.24559 | -13802 | 227.11229 | 31.34491 | 73 |
| 74 | 7.44484 | -13432 | 234.35788 | 31.47923 | 74 |
| 75 | $7 \cdot 64957$ | - 3073 | 241.80272 | 31-60995 | 75 |
| 76 | 7.85994 | -12723 | 249.45229 | 31.73718 | 76 |
| 77 | 8.07609 | -12382 | 257.31223 | 31.86100 | 77 |
| 78 | $8 \cdot 29818$ | -12051 | $265 \cdot 38832$ | 31.98151 | 78 |
| 79 | $8 \cdot 52638$ | -11728 | 273.68649 | $32 \cdot 09880$ | 79 |
| 80 | $8 \cdot 76085$ | -11414 | 282.21287 | 32.21294 | 80 |
| 81 | 9.00178 | -11109 | 290.97373 | 32.32403 | 81 |
| 82 | 9.24933 | -10812 | 299.97551 | $32 \cdot 43214$ | 82 |
| 83 | $9 \cdot 50368$ | -10522 | 309.22483 | $32 \cdot 53737$ | 83 |
| 84 | $9 \cdot 76503$ | -10241 | $318 \cdot 72851$ | $32 \cdot 63977$ | 84 |
| 85 | 10.03357 | -09967 | 328.49355 | 32•73944 | 85 |
| 86 | 10.30950 | -09700 |  |  | 86 |
| 87 | 10.59301 | -09440 | 348.83662 | $32 \cdot 93084$ | 87 |
| 88 | 10.88431 | -09188 | $359 \cdot 42962$ | 33.02271 | 88 |
| 89 | 11.18363 | -08942 | $370 \cdot 31394$ | $33 \cdot 11213$ | 89 |
| 90 | 11.49118 | -08702 | 381-49757 | $33 \cdot 19915$ | 90 |
| 91 | 11.80719 | -08469 | 392.98876 | $33 \cdot 28385$ | 91 |
| 92 | 12.13189 | -08243 | 40479595 | $33 \cdot 36628$ | 92 |
| 93 | 12.46552 | -08022 | 416.92783 | 33.44650 | 93 |
| 94 | $12 \cdot 80832$ | -07807 | $429 \cdot 39335$ | $33 \cdot 52457$ | 94 |
| 95 | $13 \cdot 16055$ | -07598 | $442 \cdot 20167$ | $33 \cdot 60056$ | 95 |
| 96 | 13.52246 | -07395 | $455 \cdot 36221$ | $33^{*} 67451$ | 96 |
| 97 | 13.89433 | $\bullet 07197$ | 468.88467 | 33.74648 | 97 |
| 98 | 14.27642 | -07005 | $482 \cdot 77900$ | 33.81652 | 98 |
| 99 | 14.66902 | -06817 | $497 \cdot 05542$ | $33 \cdot 88469$ | 99 |
| 100 | 15.07242 | -06635 | 511 ${ }^{\text {7 } 72445}$ | 33.95104 | 100 |

See also Tables on pp. xx-xxxi

| Years | ONE POUND |  | ONE POUND PER ANNUK |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | 1.03000 | $\cdot 97087$ | 1 -00000 | -97087 | 1 |
| 2 | 1 106090 | -94260 | 2.03000 | 191347 | 2 |
| 3 | 1.09273 | 91514 | 3.09090 | $2 \cdot 82861$ | 3 |
| 4 | I 12551 | -88849 | $4 \cdot 18363$ | 3.71710 | 4 |
| 5 | I 15927 | -8626I | $5 \cdot 30914$ | 4.57971 | 5 |
| 6 | I'19405 | -83748 | $6 \cdot 46841$ | 5.41719 | 6 |
| 7 | $1 \cdot 22987$ | -81309 | 7.66246 | $6 \cdot 23028$ | 8 |
| 8 | 1-26677 | $\cdot 78941$ | 8.89234 | 7.01969 | 8 |
| 9 | I 30477 | $\cdot 76642$ | 10.I591I | 7.78611 | 9 |
| ro | I 34392 | -74409 | 11.46388 | 8.53020 | 10 |
| II | $1 \cdot 38423$ | $\cdot 72242$ | 12.80780 | 9.25262 | 11 |
| 12 | 1.42576 | -70138 | $14 \cdot 19203$ | 9.95400 | 12 |
| 13 | 1.46853 | -68095 | 15.61779 | 10.63496 | 13 |
| 14 | 1.51259 | -66112 | 17.08632 | 11.29607 | 14 |
| 15 | 1 555797 | -64186 | 18.59891 | 11.93794 | 15 |
| 16 | 1.6047I | . 62317 | 20•15688 | 12.56110 | 16 |
| 17 | $1 \cdot 65285$ | -60502 | 21.76159 | ${ }^{13} \cdot 16612$ | 17 |
| 18 | $1 \cdot 70243$ | $\cdot 58739$ | 23.41444 | 13.75351 | 18 |
| 19 | 1.75351 | $\cdot 57029$ | ${ }_{25} \cdot 11687$ | 14.32380 | 19 |
| 20 | I 8 806 I I | -55368 | 26.87037 | 14.87748 | 20 |
| 21 | 1.86029 | -53755 | 28.67649 | 15.41502 | 21 |
| 22 | 1.91610 | $\cdot 52189$ | 30.53678 | 15.93692 | 22 |
| 23 | 1'97359 | -50669 | $32 \cdot 45288$ | 16.44361 | 23 |
| 24 | 2.03279 | -49193 | 34.42647 | $16 \cdot 93554$ | 24 |
| 25 | $2 \cdot 09378$ | -47761 | $36 \cdot 45926$ | 17.41315 | 25 |
| 26 | $2 \cdot 15659$ | -46369 | $38 \cdot 55304$ | 17.87684 | 26 |
| 27 | $2 \cdot 22129$ | $\cdot 45019$ | $40 \cdot 70963$ | 18.32703 | 27 |
| 28 | $2 \cdot 28793$ | -43708 | 42.93092 | 18.76411 | 28 |
| 29 | $2 \cdot 35657$ | -42435 | $45 \cdot 21885$ | $19 \cdot 18846$ | 29 |
| 30 | 2.42726 | 41199 | 47.57542 | 19.60044 | 30 |
| 3 I | $2 \cdot 50008$ | -39999 | 50•00268 | $20 \cdot 00043$ | 31 |
| 32 | 2.57508 | -38834 | 52.50276 | $20 \cdot 38877$ | 32 |
| 33 | 2.65234 | -37703 | 55.07784 | 20-76579 | 33 |
| 34 | $2 \cdot 73191$ | -36604 | 57.73018 | 2 I 13184 | 34 |
| 35 | 2.81386 | -35538 | $60 \cdot 46208$ | 21.48722 | 35 |
| 36 | 2.89828 | -34503 | 63.27594 | 21.83225 | 36 |
| 37 | $2 \cdot 98523$ | -33498 | $66 \cdot 17422$ | $22 \cdot 16724$ | 37 |
| 38 | 3.07478 | . 32523 | 69•15945 | 22.49246 | 38 |
| 39 | $3 \cdot 16703$ | -31575 | $72 \cdot 23423$ | $22 \cdot 80822$ | 39 |
| 40 | 3.26204 | -30656 | $75 \cdot 40126$ | $23 \cdot 11477$ | 40 |
| 41 | 3.35990 | $\cdot 29763$ | 78.66330 | 23.41240 | 4 I |
| 42 | 3.46070 | -28896 | 82.02320 | 23.70136 | 42 |
| 43 | $3 \cdot 56452$ | $\cdot 28054$ | 85.48389 | 23.98190 | 43 |
| 44 | 3.67145 | $\cdot 27237$ | 89.0484 T | 24.25427 | 44 |
| 45 | $3 \cdot 78160$ | -26444 | 92'71986 | 24.51871 | 45 |
| 46 | 3.89504 | -25674 | 96.50146 | 24.77545 | 46 |
| 47 | 4.01190 | - 24926 | $100 \cdot 39650$ | 25.0247 I | 47 |
| 48 | $4 \cdot 13225$ | $\cdot 24200$ | 104.40840 | 25.26671 | 48 |
| 49 | 4.25622 | $\cdot 23495$ | 108.54065 | $25 \cdot 50166$ | 49 |
| 50 | 4.38391 | -22811 | 112.79687 | $25 \cdot 72976$ | 50 |

For explanation see pp. 8-13

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 4.51542 | -22146 | 117.18077 | 25.95123 | 51 |
| 52 | 4.65089 | -21501 | 121.69620 | $26 \cdot$ I6624 | 52 |
| 53 | 4.79041 | -20875 | 126.34708 | $26 \cdot 37499$ | 53 |
| 54 | 4.93412 | -20267 | 131-13749 | $26 \cdot 57766$ | 54 |
| 55 | 5.08215 | -19677 | 136.07162 | $26 \cdot 77443$ | 55 |
| 56 | 5 '2346I | -19104 | 141.15377 | $26 \cdot 96546$ | 56 |
| 57 | $5 \cdot 39165$ | -18547 | $146 \cdot 38838$ | $27 \cdot 15094$ | 57 |
| 58 | 5.55340 | -18007 | 151.78003 | 27.33101 | 58 |
| 59 | 5.72000 | -17483 | 157.33343 | 27.50583 | 59 |
| 60 | 5.89160 | -16973 | 163.05344 | 27.67556 | 60 |
| 61 | $6 \cdot 06835$ | -16479 | 168.94504 | 27.84035 | 61 |
| 62 | $6 \cdot 25040$ | -15999 | -75.01339 | $28 \cdot 00034$ | 62 |
| 63 | $6 \cdot 43791$ | -15533 | 181.26379 | $28 \cdot 15567$ | 63 |
| 64 | 6.63105 | -1508I | 187.7017 I | $28 \cdot 30648$ | 64 |
| 65 | $6 \cdot 82998$ | -14641 | 194*33276 | $28 \cdot 45289$ | 65 |
| 66 | $7 \cdot 03488$ | -14215 | 201•16274 | 28.59504 | 66 |
| 67 | $7 \cdot 24593$ | -13801 | $208 \cdot 19762$ | 28.73305 | 67 |
| 68 | $7 \cdot 4633$ I | -13399 | 21544355 | 28.86704 | 68 |
| 69 | 7.68721 | -13009 | $222 \cdot 90686$ | 28.99712 | 69 |
| 70 | 7.91782 | - 2630 | $230 \cdot 59406$ | 29.12342 | 70 |
| 71 | 8.15536 | -12262 | $238 \cdot 51189$ | 29.24604 | 71 |
| 72 | $8 \cdot 40002$ | -11905 | $246 \cdot 66724$ | 29.36509 | 72 |
| 73 | 8.65202 | - I1558 | 255.06726 | 29.48067 | 73 |
| 74 | 8.91158 | -11221 | 263.71928 | 29.59288 | 74 |
| 75 | 9.17893 | -10895 | 272.63086 | 29.70183 | 75 |
| 76 | 9.45429 | -10577 | 281.80978 | 29.80760 | 76 |
| 77 | 9.73792 | -10269 | $291 \cdot 26407$ | 29.91029 | 77 |
| 78 | 10.03006 | -09970 | 301.00200 | $30 \cdot 00999$ | 78 |
| 79 | 10.33096 | -09680 | 311.03206 | $30 \cdot 10679$ | 79 |
| 80 | 10.64089 | -09398 | 321.36302 | $30 \cdot 20076$ | 80 |
| 81 | 10.96012 | -9124 | 332.0039 I | $30 \cdot 29200$ | 81 |
| 82 | II 128892 | -08858 | $342 \cdot 96403$ | $30 \cdot 38059$ | 82 |
| 83 | II 62759 | -08600 | 354.25295 | $30 \cdot 46659$ | 83 |
| 84 | 11.97642 | -08350 | 365.88054 | $30 \cdot 55009$ | 84 |
| 85 | 12.3357 | -08107 | $377 \cdot 85695$ | $30 \cdot 63115$ | 85 |
| 86 | 12.70578 | -07870 |  | 30•70986 | 86 |
| 87 | 13.08695 | -0764I | 402.89844 | $30 \cdot 78627$ | 87 88 |
| 88 | 13.47956 | -07419 | 415.98539 | $30 \cdot 86045$ 30.93248 | 88 89 |
| 89 | 13.88395 | -07203 | 429.46495 | 30.93248 $3 \mathrm{I} \cdot 0024 \mathrm{I}$ | 89 90 |
| 90 | 14.30047 | -06993 | $443 \cdot 34890$ | $31 \times 0024$ | 90 |
| 9 I | 14.72948 | -06789 | $457 \cdot 64937$ | 31.07030 | 91 |
| 92 | 15.17137 | -06591 | $472 \cdot 37885$ | 3 I 13621 | 92 |
| 93 | 15.62651 | -06399 | 487.55022 | $31 \cdot 20021$ | 93 |
| 94 | 16.09530 | -06213 | $503 \cdot 17672$ | 31.26234 | 94 |
| 95 | 16.57816 | -06032 | 519.27203 | 31-32266 | 95 |
| 96 | 17.0755 I | -05856 | 535.85019 | $3 \mathrm{I} \cdot 38122$ | 96 |
| 97 | 17.58777 | -05686 | 552.92569 | 31.43808 | 97 |
| 98 | I8.11540 | -05520 | $570 \cdot 51346$ 588.62887 | 31.49328 | 98 |
| 99. | 18.65887 | -05359 | 588.62887 | 31.54687 31.59891 | 99 100 |
| 100 | 19.21863 | -05203 | $607 \cdot 28773$ | 31.59891 | 100 |


| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | 1.03500 | -96618 | 100000 | -96618 | 1 |
| 2 | 1.07122 | '93351 | 2.03500 | I. 89969 | 2 |
| 3 | I•10872 | -90194 | $3 \cdot 10623$ | $2 \cdot 80164$ | 3 |
| 4 | 1.14752 | -87144 | 4.21494 | $3 \cdot 67308$ | 4 |
| 5 | 1•18769 | -4197 | $5 \cdot 36247$ | 4.51505 | 5 |
| 6 | I 22926 | -81350 | $6 \cdot 55015$ | $5 \cdot 32855$ | 6 |
| 7 | 1.27228 | $\cdot 78599$ | 7777941 | $6 \cdot 11454$ | 7 |
| 8 | 1.31681 | -75941 | 9'05169 | 6.87396 | 8 |
| 9 | 1.36290 | $\cdot 73373$ | 10.36850 | $7 \cdot 60769$ | 9 |
| 10 | 1.41060 | -70892 | 11.73139 | $8 \cdot 31661$ | 10 |
| 11 | 1.45997 | . 68495 | 13.14199 | 9.00155 | 11 |
| 12 | 1.51107 | -66178 | 14.60196 | 9.66333 | 12 |
| 13 | 1.56396 | - 63940 | 16.11303 | 10.30274 | 13 |
| 14 | 1.61869 | -61778 | 17.67699 | $10 \cdot 92052$ | 14 |
| 15 | 167535 | -59689 | 19.29568 | II.51741 | 15 |
| 16 | I 73399 | -57671 | 20.97103 | 12.09412 | 16 |
| 17 | I.79467 | -55720 | 22.70501 | 12.65132 | 17 |
| 18 | I.85749 | -53836 | 24.49969 | $13 \cdot 18968$ | 18 |
| 19 | 192250 | $\cdot 52016$ | $26 \cdot 35718$ | 13.70984 | 19 |
| 20 | I 98979 | '50257 | $28 \cdot 27968$ | 14.21240 | 20 |
| 21 | 2.05943 | -48557 | 30•26947 | 14.69797 | 21 |
| 22 | $2 \cdot 13151$ | -46915 | $32 \cdot 32890$ | $15 \cdot 16713$ | 22 |
| 23 | $2 \cdot 20611$ | -45329 | $34 \cdot 4604 \mathrm{I}$ | 15.62041 | 23 |
| 24 | 2.28333 | -43796 | $36 \cdot 66653$ | 16.05837 | 24 |
| 25 | 2.36324 | 42315 | $38 \cdot 94986$ | 16.48152 | 25 |
| 26 | 2.44596 | -40884 | 41.31310 | 16.89035 | 26 |
| 27 | 2.53 I 57 | -39501 | 43.75906 | 17.28537 | 27 |
| 28 | 2.62017 | -38165 | $46 \cdot 29063$ | 17.66702 | 28 |
| 29 | 2.71188 | -36875 | 48.91080 | 18.03577 | 29 |
| 30 | 2.80679 | -35628 | $51 \cdot 62267$ | 18.39205 | 30 |
| 3 I | 2.90503 | -34423 | 54.42947 | 18.73628 | 3 I |
| 32 | 3.00671 | -33259 | 57.33450 | 19.06887 | 32 |
| 33 | 3.11194 | -32134 | 60.34121 | 19.39021 | 33 |
| 34 | 3.22086 | $\cdot 31048$ | 63.45315 | 19.70068 | 34 |
| 35 | 3.33359 | -29998 | $66 \cdot 67401$ | $20 \cdot 00066$ | 35 |
| 36 | 3.45027 | -28983 | 70.00760 | 20.29049 | 36 |
|  | 3.57103 | $\cdot 28003$ | 73.45787 | $20 \cdot 57053$ | 37 |
| 38 | 3.69601 | $\cdot 27056$ | 77.02889 | $20 \cdot 84109$ | 38 |
| 39 | 3.82537 | -26141 | 80.72490 | 21.10250 | 39 |
| 40 | 3.95926 | -25257 | $84 \cdot 55028$ | 21.35507 | 40 |
| 4 I | 4.09783 | - 24403 | 88.50953 | 21.59910 | 4 I |
| 42 | 4.24126 | -23578 | 92.60737 | $2 \mathrm{I} \cdot 83488$ | 42 |
| 43 | 4.38970 | -22781 | 96.84863 | $22 \cdot 06269$ | 43 |
| 44 | 4.54334 | - 22010 | 101.23833 | 22.28279 | 44 |
| 45 | 4.70236 | -21266 | 10578167 | 22.49545 | 45 |
| 46 | 4.86694 | -20547 | $110 \cdot 48403$ | 22.70092 | 46 |
| 47 | 5.03728 | -19852 | 115.35097 | 22.89944 | 47 |
| 48 | 5.21359 | -19181 | 120.38826 | 23.09125 | 48 |
| 49 | 5.39606 | -18532 | 125.60184 | 23.27657 | 49 |
| 50 | 5.58493 | -17905 | $130 \cdot 99791$ | 23.45562 | 50 |

For explanation see pp. 8-13

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 578040 | - 17300 | $136 \cdot 58283$ | 23.62862 | 51 |
| 52 | 5.98271 | -16714 | 142.36324 | 23.79577 | 52 |
| 53 | $6 \cdot 19211$ | -16150 | $148 \cdot 34595$ | 23.95726 | 53 |
| 54 | $6 \cdot 40883$ | -15603 | 154.53805 | $24.1133{ }^{\circ}$ | 54 |
| 55 | 6.63314 | -15076 | 160.94689 | 24.26405 | 55 |
| 56 | $6 \cdot 86530$ | - 14566 | 167.58003 | 24.40971 | 56 |
| 57 | $7 \cdot 10559$ | -14073 | 174.44533 | 24.55045 | 57 |
| 58 | 7.35428 | -13598 | $18 \mathrm{I} \cdot 55092$ | 24.68642 | 58 |
| 59 | $7 \cdot 61168$ | -13138 | 188.90520 | 24.81780 | 59 |
| 60 | $7 \cdot 87809$ | - 12693 | 196.51688 | 24.94474 | 60 |
| 61 | 8•15382 | -12264 | 204.39497 | 25.06738 | 6r |
| 62 | $8 \cdot 4392$ I | -11849 | 212.54879 | $25 \cdot 18587$ | 62 |
| 63 | 8.73458 | - 11449 | 220.98800 | 25.30036 | 63 |
| 64 | 9.04029 | -11062 | 229.72258 | 25.41097 | 64 |
| 65 | 9.35670 | -10688 | 238.76287 | 25.51785 | 65 |
| 66 | 9.68418 | -10326 | $248 \cdot 11957$ | 25.621 II | 66 |
| 67 | 10.02313 | -09977 | $257 \cdot 80376$ | 25.72088 | 67 |
| 68 | 10.37394 | -09640 | 267.82689 | 25.81728 | 68 |
| 69 | $10 \cdot 73703$ | -09314 | $278 \cdot 20083$ | 25.91041 | 69 |
| 70 | II 1 I 282 | -08999 | 288.93786 | 26.00040 | 70 |
| 71 | II•50177 | -08694 | 300.05069 | $26 \cdot 08734$ | 71 |
| 72 | $1 \mathrm{I} \cdot 90434$ | -08400 | 311.55244 | $26 \cdot 17134$ | 72 |
| 73 | 12.32099 | -08116 | 323.45680 | 26.25251 | 73 |
| 74 | $12 \cdot 75222$ | -07842 | $335 \cdot 77778$ | $26 \cdot 33092$ | 74 |
| 75 | $13 \cdot 19855$ | -07577 | $348 \cdot 53001$ | 26.40669 | 75 |
| 76 | 13.66050 | -07320 | $361 \cdot 72856$ | 26.47989 | 76 |
| 77 | 14.13862 | -07073 | 375.38906 | 26.55062 | 77 |
| 78 | 14.63347 | . 06834 | $389 \cdot 52768$ | 26.61896 | 78 |
| 79 | 15.14564 | -06603 | $404 \cdot 16115$ | 26.68498 | 79 |
| 80 | 15.67574 | -06379 | 419.30678 | 26.74878 | 80 |
| 8 I | 16.22439 | -06164 | 434.98252 | $26 \cdot 81041$ | 81 |
| 82 | 16.79224 | -05955 | 451 '20691 | $26 \cdot 86996$ | 82 |
| 83 | 17.37997 | -05754 | 467.99915 | 26.92750 | 83 |
| 84 | 17.98827 | -05559 | 485.37912 | 26.98309 | 84 |
| 85 | 18.61786 | -05371 | 503.36739 | 27.03680 | 85 |
| 86 | 19.26948 | - 05190 | 521.98525 | 27.08870 | 86 |
| 87 | 19.94391 | -05014 | $541 \cdot 25474$ | 27.13884 |  |
| 88 | 20.64195 | - 04845 | $561 \cdot 19865$ | $27 \cdot 18729$ | 88 |
| 89 | $21 \cdot 36442$ | ${ }^{0} \mathbf{4 6 8 1}$ | $58 \mathrm{I} \cdot 84060$ | 27.23409 | 89 |
| 90 | 22.11217 | -04522 | $603 \cdot 20503$ | 27.27932 | 90 |
| 9 r | 22.88610 | -04369 | 625.31720 | 27.32301 | 91 |
| 92 | 23.68711 | -04222 | $648 \cdot 20330$ | 27.36523 | 92 |
| 93 | 24.51616 | '04079 | 671.89042 | $27 \cdot 40602$ | 93 |
| 94 | 25.37423 | -03941 | 696.40658 | 27.44543 | 94 |
| 95 | 26.26233 | -03808 | 72178082 | 27.48351 | 95 |
| 96 | $27 \cdot 18151$ | -03679 | 748.04314 | 27.52029 | 96 |
| 97 | $28 \cdot 13286$ | - 3555 | 775.22465 | 27.55584 | 97 |
| 98 | 29.11751 | -03434 | 803.35752 | $27 \cdot 59018$ | 98 |
| 99 | 30'13662 | -03318 | 832.47503 | 27.62337 | 99 |
| 100 | $31 \cdot 19141$ | -03206 | $862 \cdot 61166$ | $27 \cdot 65543$ | 100 |

See also Tables on pp. xx-xxxı

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | 1.04000 | -96154 | 1000000 | $\cdot 96154$ | 1 |
| 2 | 1.08160 | $\cdot 92456$ | 2.04000 | I. 88609 | 2 |
| 3 | 1-12486 | -88900 | $3 \cdot 12160$ | 2.77509 | 3 |
| 4 | 1-16986 | -85480 | 4.24646 | 3.62990 | 4 |
| 5 | 1 21665 | -82193 | 5.41632 | 4.45182 | 5 |
| 6 | 1.26532 | -79031 | $6 \cdot 63298$ | 5.24214 | 6 |
| 7 | I.31593 | $\cdot 75992$ | 7.89829 | $6 \cdot 00205$ | 7 |
| 8 | I 36857 | $\cdot 73069$. | 9.21423 | 6.73275 | 8 |
| 9 | I 423311 | $\cdot 70259$ | $10 \cdot 58280$ | $7 \cdot 43533$ | 9 |
| 10 | I 48024 | -67556 | 12.00611 | $8 \cdot 11090$ | 10 |
| 11 | $1 \cdot 53945$ | -64958 | 13.48635 | $8 \cdot 76048$ | II |
| 12 | I.60103 | . 62460 | 15.0258 I | $9 \cdot 38507$ | 12 |
| 13 | I 66507 | -60057 | 16.62684 | 9.98565 | 13 |
| 14 | I 73168 | -57748 | 18.29191 | 10.56312 | 14 |
| 15 | I.80094 | -55526 | 20.02359 | 11-11839 | 15 |
| 16 | I. 87298 | -53391 | 21.82453 | 11.65230 | 16 |
| 17 | $1 \cdot 9 \mathrm{C}=90$ | $\cdot 51337$ | 23.69751 | 12.16567 | 17 |
| 18 | 2.02582 | -49363 | 25.64541 | 12.65930 | 18 |
| 19 | $2 \cdot 10685$ | -47464 | 27.67123 | 13•13394 | 19 |
| 20 | $2 \cdot 19112$ | $\bullet 45639$ | 29.77808 | 13.59033 | 20 |
| 21 | 2.27877 | -43883 | 31.96920 | 14.02916 | 21 |
| 22 | $2 \cdot 36992$ | -42196 | 34.24797 | 14.45112 | 22 |
| 23 | 2.46472 | -40573 | $36 \cdot 61789$ | 14.85684 | 23 |
| 24 | 2.56330 | -39012 | $39 \cdot 08260$ | 15.24696 | 24 |
| 25 | $2 \cdot 66584$ | -37512 | 41.6459I | 15.62208 | 25 |
| 26 | $2 \cdot 77247$ | $\cdot 36069$ | 44.31174 | 15.98277 | 26 |
| 27 | 2.88337 | - 34682 | 47.08421 | 16.32959 | 27 |
| 28 | 2.99870 3.11865 | $\cdot 33348$ | $49 \cdot 96758$ | $16 \cdot 66306$ | 28 |
| 29 | 3.11865 3.24340 | - 32065 | 52.96629 | 16.98372 | 29 |
| 30 | 3.24340 | -30832 | $56 \cdot 08494$ | 17.29203 | 30 |
| 31 | 3.37313 |  |  |  | 3 I |
| 32 | 3.50806 | -28506 | 62.70147 | 17.87355 | 32 |
| 33 34 | 3.64838 | . 27409 | $66 \cdot 20953$ | $18 \cdot 14765$ | 33 |
| 34 | 3.79432 | - 26355 | 69.85791 | 18.41120 | 34 |
| 35 | 3.94609 | $\cdot 25342$ | $73 \cdot 65222$ | $18 \cdot 66461$ | 35 |
| 36 | $4 \cdot 10393$ | - 24367 | 77.59831 | 18.90828 | 36 |
| 37 38 | 4.26809 <br> 4.4388 | . 23430 | $8 \mathrm{8I} \cdot 70225$ | 19.14258 | 37 |
| 38 39 | 4.43881 4.61637 | - 22529 | 85.97034 90.40915 | 19.36787 19.58449 | 38 39 |
| 40 | 4.80102 | -20829 | $95.0255^{2}$ | 19.58449 1979277 | 39 40 |
| 4 I | 4.99306 | -20028 | 99.82654 | 19.99305 |  |
| 42 | 5'19278 | -19257 | 104.81960 | $20 \cdot 18563$ | 42 |
| 43 | 5.40050 | -18517 | 110.01238 | $20 \cdot 37080$ | 43 |
| 44 | 5.61652 5.84118 | -17805 | 11541288 | $20 \cdot 54884$ | 44 |
| 46 | $6 \cdot 07482$ |  |  |  | 45 |
| 47 | $6 \cdot 31782$ | - 15828 | 132.94539 | 21.04294 | 4 |
| 48 | $6 \cdot 57053$ | -15219 | 139.26321 | 21.19513 | 48 |
| 49 50 | 6.83335 7.10668 | -14634 | 145.83373 | $21 \cdot 34147$ | 49 |
| 50 | 7'10668 | -14071 | $152 \cdot 66708$ | 21.48219 | 50 |

For explanation :ee pp. 8-13

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 7•39095 | -13530 | 159.77377 | 21.61749 | 51 |
| 52 | 7.68659 | - 3010 | 167.16472 | 21.74758 | 52 |
| 53 | 7.99405 | -12509 | 174.85131 | 21.87268 | 53 |
| 54 | $8 \cdot 31381$ | -12028 | 182.84536 | 21.99296 | 54 |
| 55 | 8.64637 | 'II 566 | 191.15917 | $22 \cdot 10861$ | 55 |
| 56 | 8.99222 | -11121 | 199.80554 | $22 \cdot 21982$ | 56 |
| 57 | 9.35191 | -10693 | 208.79776 | 22.32675 | 57 |
| 58 | 972599 | -10282 | 218.14967 | 22.42957 | 58 |
| 59 | $10 \cdot 11503$ | -09886 | 227.87566 | $22 \cdot 52843$ | 59 |
| 60 | 10.51963 | -09506 | 237.99069 | 22.62349 | 60 |
| 61 | 10.94041 | -09140 | 248.51031 | 22.71490 | 61 |
| 62 | $11 \cdot 37803$ | -08789 | 259.45073 | 22.80278 | 62 |
| 63 | 11.83315 | -08451 | $270 \cdot 82875$ | 22.88729 | 63 |
| 64 | $12 \cdot 30648$ | -08126 | 282.66190 | $22 \cdot 96855$ | 64 |
| 65 | $12 \cdot 79874$ | -07813 | 294.96838 | $23 \cdot 04668$ | 65 |
| 66 | 13.31068 | -07513 | $307 \cdot 76712$ | 23.12181 | 66 |
| 67 | 13.84311 | -07224 | 321.07780 | 23.19405 | 67 |
| 68 | 14.39684 | -06946 | 334.92091 | 23.26351 | 68 |
| 69 | 14.97271 | -06679 | 349.31775 | 23.33030 | 69 |
| 70 | 15.57162 | -06422 | 364.29046 | 23.39452 | 70 |
| 71 | 16.19448 | -06175 | 379.86208 | 23.45627 | 71 |
| 72 | 16.84226 | -05937 | 396.05656 | 23.51564 | 72 |
| 73 | 17.51595 | -05709 | 412.89892 | 23.57273 | 73 |
| 74 | 18.21659 | -05490 | $430 \cdot 41478$ | 23.62763 | 74 |
| 75 | 18.94525 | -05278 | 448.63137 | $23 \cdot 68041$ | 75 |
| 76 | 19.70307 | -05075 | $467 \cdot 57662$ | 23.73116 | 76 |
| 77 | 20.49119 | . 04880 | 487.27969 | 23.77996 | 77 |
| 78 | 21.31084 | -04692 | 507.77087 | 23.82689 | 78 |
| 79 | $22 \cdot 16327$ | -04512 | $529 \cdot 08171$ | 23.87201 | 79 |
| 80 | 23.04980 | -04338 | 551.24498 | 23.91539 | 80 |
| 81 | 23.97179 | -04172 | $574 \cdot 29478$ | 23.95711 | 81 |
| 82 | 24.93066 | -04011 | $598 \cdot 26657$ | 23.99722 | 82 |
| 83 | 25.92789 | -03857 | $623 \cdot 19723$ | 24.03579 | 83 |
| 84 | 26.96500 | -03709 | $649 \cdot 12512$ | 24.07287 | 84 |
| 85 | 28.04360 | -03566 | 676.09012 | $24 \cdot 10853$ | 85 |
| 86 | $29 \cdot 16535$ | -03429 | 704-13373 | $24 \cdot 14282$ | 86 |
| 87 | 30.33196 | -03297 | $733 \cdot 29908$ | $24 \cdot 17579$ | 87 |
| 88 | 31.54524 | -03170 | 763.63104 | 24.20749 | 88 |
| 89 | 32.80705 | -03048 | $795 \cdot 17628$ | 24.23797 | 89 |
| 90 | $34 \cdot 11933$ | -02931 | 827.98333 | 24.26728 | 90 |
| 9 I | 35.48411 | -02818 | $862 \cdot 10267$ | 24.29546 | 91 |
| 92 | $36 \cdot 90347$ | -02710 | 897.58677 | 24.32256 | 92 |
| 93 | 38.37961 | -02606 | 934.49024 | 24.34861 | 93 |
| 94 | $39^{\circ} 91479$ | $\cdot 02505$ | 972.86985 | 24.37367 | 94 |
| 95 | 41.51139 | -02409 | 1012.78465 | 24.39776 | 95 |
| 96 | $43 \cdot 17184$ | -02316 | $1054 \cdot 29603$ | 24.42092 | 96 |
| 97 | $44 \cdot 89872$ | -02227 | 1097.46788 | 24.44319 | 97 |
| 98 | $46 \cdot 69467$ | -02142 | $1142 \cdot 36659$ | 24.46461 | 98 |
| 99 100 | $48 \cdot 56245$ | -02059 | 1189.06125 1237.62370 | 24.48520 24.50500 | 99 |
| 100 | $50 \cdot 50495$ | '01980 | 1237.62370 | 24.50500 | 100 |

See also Tables on pp. xx-xexi

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| I | I. 04500 | -95694 | 1 -00000 | -95694 | 1 |
| 2 | 1.09203 | -91573 | 2.04500 | 1.87267 | 2 |
| 3 | I 14117 | -87630 | $3 \cdot 13702$ | $2 \cdot 74896$ | 3 |
| 4 | I'19252 | -83856 | 4.27819 | $3 \cdot 58753$ | 4 |
| 5 | I 24618 | -80245 | 547071 | $4 \cdot 38998$ | 5 |
| 6 | I 30226 | -76790 | 6.71689 | $5 \cdot 15787$ | 6 |
| 7 | I 36086 | $\cdot 73483$ | $8 \cdot 01915$ | $5 \cdot 89270$ | 7 |
| 8 | 142210 | -70319 | 9.38001 | $6 \cdot 59589$ | 8 |
| 9 | I.48610 | -67290 | 10.80211 | $7 \cdot 26879$ | 9 |
| 10 | I 555297 | -64393 | 12.28821 | $7 \cdot 91272$ | 10 |
| 11 | 1.62285 | -61620 | 13.84118 | 8.52892 | II |
| 12 | I 699588 | -58966 | 15.46403 | 9-11858 | 12 |
| 13 | I.77220 | $\cdot 56427$ | 17.15991 | $9 \cdot 68285$ | 13 |
| 14 | I.85194 | -53997 | 18.93210 | $10 \cdot 22283$ | 14 |
| 15 | 193528 | ${ }^{51672}$ | $20 \cdot 78405$ | 10•73955 | 15 |
| 16 | 2.02237 | -49447 | $22 \cdot 71933$ | II 23401 | 16 |
| 17 | $2 \cdot 11338$ | -47318 | 24.74170 | 11.70719 | 17 |
| 18 | $2 \cdot 20848$ | -45280 | 26.85508 | 12.15999 | 18 |
| 19 | $2 \cdot 30786$ | 43330 | 29.06356 | $12 \cdot 59329$ | 19 |
| 20 | 2.41171 | -41464 | 3 I 37142 | 13.00794 | 20 |
| 21 | $2 \cdot 52024$ | -39679 | 33.78314 | 13.40472 | 21 |
| 22 | 2.63365 | -37970 | $36 \cdot 30338$ | 13.78442 | 22 |
| 23 | $2 \cdot 75217$ | -36335 | 38.93703 | $14 \cdot 14777$ | 23 |
| 24 | $2 \cdot 87601$ | -34770 | $41.68 \mathrm{gl9}$ | 14.49548 | 24 |
| 25 | $3 \cdot 00543$ | -33273 | 44.56521 | 14.82821 | 25 |
| 26 | 3.14068 | -31840 | 47.57064 | 15.14661 | 26 |
| 27 | 3.28201 | $\cdot 30469$ | 50.71132 | 15.45130 | 27 |
| 28 | 3.42970 | - 29157 | 53.99333 | 15.74287 | 28 |
| 29 | 3.58404 | -27901 | 57.42303 | $16 \cdot 02189$ | 29 |
| 30 | $3 \cdot 74532$ | -26700 | 61.00707 | $16 \cdot 28889$ | 30 |
| 31 | 3.91386 | -25550 | 64.75238 | $16 \cdot 54439$ | 31 |
| 32 | 4.08998 | -24450 | 68.66624 | $16 \cdot 78889$ | 32 |
| 33 | 4.27403 | -23397 | 72.75622 | 17.02286 | 33 |
| 34 | 4.46636 | -22390 | $77 \cdot 03026$ | 17.24676 | 34 |
| 35 | $4 \cdot 66735$ | -21425 | 81.49662 | 17.46101 | 35 |
| 36 | $4 \cdot 87738$ | -20503 | $86 \cdot 16396$ | 17.66604 | 36 |
| 37 | 5.09686 | -19620 | 91.04134 | 17.86224 | 37 |
| 38 | 5.32622 | -18775 | 96.13820 | 18.04999 | 38 |
| 39 | 5.56590 | -17967 | 101.46442 | $18 \cdot 22966$ | 39 |
| 40 | 5.81636 | -17193 | 107.03032 | 18.40158 | 40 |
| 41 | 6.07810 | -16453 | 112.84668 | $18 \cdot 56611$ | 41 |
| 42 | 6.35161 | - 15744 | 118.92479 | $18 \cdot 72355$ | 42 |
| 43 | $6 \cdot 63744$ | -15066 | 125.27640 | 18.87421 | 43 |
| 44 | 6.93612 | -14417 | 13 I .91384 | 19.01838 | 44 |
| 45 | $7 \cdot 24825$ | -13796 | 138.84996 | $19 \cdot 15635$ | 45 |
| 46 | 7.57442 | - 13202 | 146.09821 | 19.28837 | 46 |
| 47 | 7.91527 | -12634 | 153.67263 | 19.41471 | 47 |
| 48 | 8.27145 | -12090 | 161.58790 | 19.53561 | 48 |
| 49 | 8.64367 | -11569 | 169.85935 | 19.65130 | 49 |
| 50 | 9.03264 | -1 1071 | $178 \cdot 50303$ | 19.76201 | 50 |

For explanation see pp. 8-13

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 9*43910 | -10594 | 187.53566 | 19.86795 | 51 |
| 52 | 9.86386 | -10138 | 196.97477 | 19.96933 | 52 |
| 53 | $10 \cdot 30774$ | -09701 | 206.83863 | 20.06634 | 53 |
| 54 | 10.77159 | -09284 | $217 \cdot 14637$ | 20.15918 | 54 |
| 55 | 1I 2563 I | -08884 | 227.91796 | 20.24802 | 55 |
| 56 | 11.76284 | -08501 | $239 \cdot 17427$ | 20.33303 | 56 |
| 57 | 12.29217 | .08135 | 250.9371 I | 20.41438 | 57 |
| 58 | 12.84532 | -07785 | 263.22928 | 20-49224 | 58 |
| 59 | 13.42336 | -07450 | $276 \cdot 07459$ | $20 \cdot 56673$ | 59 |
| 60 | 14.02741 | -07129 | 289.49795 | 20.63802 | 60 |
| 61 | 14.65864 | -06822 | 303.52536 | $20 \cdot 70624$ | 61 |
| 62 | 15.31828 | - 06528 | $318 \cdot 18400$ | 20.77152 | 62 |
| 63 | 16.00760 | -06247 | 333.50228 | 20.83399 | 63 |
| 64 | 16.72794 | -05978 | $349 \cdot 50988$ | $20 \cdot 89377$ | 64 |
| 65 | 17.48070 | - 05721 | 366.23783 | $20 \cdot 95098$ | 65 |
| 66 | 18:26733 | -05474 | 383.71853 | 21.00572 | 66 |
| 67 | 19.08936 | $\bigcirc 05239$ | 401.98586 | 21.05811 | 67 |
| 68 | 19.94838 | -05013 | $42 \mathrm{I} \cdot 07523$ | $21 \cdot 10824$ | 68 |
| 69 | $20 \cdot 84606$ | -04797 | 441.02362 | 21•1562I | 69 |
| 70 | $2 \mathrm{I} \cdot 784 \mathrm{I} 3$ | -04590 | $46 \mathrm{I} \cdot 86968$ | 21.20211 | 70 |
| 71 | 22.76442 | -04393 | $483 \cdot 65381$ | 21.24604 | $7{ }^{1}$ |
| 72 | 23.78882 | -04204 | 506.41823 | $2 \mathrm{I} \cdot 28808$ | 72 |
| 73 | 24.85931 | -04023 | $530 \cdot 20706$ | 21.32830 | 73 |
| 74 | 25.97798 | -03849 | $555 \cdot 06637$ | $2 \mathrm{I} \cdot 36680$ | 74 |
| 75 | 27.14699 | -03684 | $581 \times 04436$ | $2 \mathrm{I} \cdot 40363$ | 75 |
| 76 | 28.3686I | -03525 | $608 \cdot 19136$ | 21.43888 | 76 |
| 77 | 29.64520 | -03373 | $636 \cdot 55997$ | 21.47262 | 77 |
| 78 | 30.97923 | -03228 | $666 \cdot 20517$ | $2 \mathrm{I} \cdot 50490$ | 78 |
| 79 | $32 \cdot 37329$ | -03089 | $697 \cdot 18440$ | 21•53579 | 79 |
| 80 | 33.83009 | -02956 | 729.55770 | 21.56534 | 80 |
| 8 I | 35.35245 | -02829 | 763.38779 | 21•59363 | 8 I |
| 82 | 36.94 .33 I | - 02707 | 798.74024 | 21.62070 | 82 |
| 83 | 38.60576 | -02590 | $835 \cdot 68355$ | $21 \cdot 64660$ | 83 |
| 84 | $40 \cdot 34302$ | -02479 | 874.28931 | 21.67139 | 84 |
| 85 | 42.15845 | -02372 | 914.63233 | 21.695II | 85 |
| 86 | $44.0555^{8}$ | - 02270 | 956.79079 | 21.71785 | 86 |
| 87 | $46 \cdot 03808$ | -02172 | 1000.84637 | 21.73953 | 87 |
| 88 | $48 \cdot 10980$ | -02079 | $1046 \cdot 88446$ | 21.76032 | 88 |
| 89 | $50 \cdot 27474$ | - 1989 | 1094.99426 | 21.78021 | 89 |
| 90 | 52.53710 | -01903 | 1145.26900 | 21.79924 | 90 |
| 91 | 54.90127 | -0182I | 1197.80611 | 21.81746 | 9 I |
| 92 | 57.37183 | -01743 | 1252.70738 | 21.83489 | 92 |
| 93 | 59.95356 | -01668 | $1310 \cdot 07922$ | 2 I .85156 | 93 |
| 94 | 62.65147 | -OI 596 | ${ }^{1} 370.03278$ | $2 \mathrm{I} \cdot 86753$ | 94 |
| 95 | 65.47079 | -0is27 | $1432 \cdot 68426$ | 21.88280 | 95 |
| 96 | 68.41697 | - O 462 | 1498 -15505 | 21.89742 | 96 |
| 97 | 7 I 49574 | -01399 | $1566 \cdot 57202$ | 21.91140 | 97 |
| 98 | 74.71305 | -OI338 | 1638.06777 | $2 \mathrm{I} \cdot 92479$ | 98 |
| 99 | 78.07514 | - 01281 | $1712 \cdot 78082$ | $21 \cdot 93760$ | 99 roo |
| 100 | 81.58852 | -01226 | $1790 \cdot 85595$ | $2 \mathrm{I} \cdot 94985$ | 100 |


| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | $1 \cdot 05000$ | -95238 | I 00000 | -95238 | 1 |
| 2 | 1.10250 | -90703 | $2 \cdot 05000$ | I.85941 | 2 |
| 3 | 1-15763 | . 86384 | 3.15250 | 2.72325 | 3 |
| 4 | 12155 I | -82270 | $4 \cdot 31013$ | $3 \cdot 54595$ | 4 |
| 5 | 127628 | 78353 | $5 \cdot 52563$ | 4.32948 | 5 |
| 6 | 1 34010 | $\cdot 74622$ | 6.80191 | $5 \cdot 07569$ | 6 |
| 7 | 1.40710 | 71068 | 8.14201 | $5 \cdot 78637$ | 7 |
| 8 | 1 47746 | $\cdot 67684$ | 9.54911 | $6 \cdot 4632 \mathrm{I}$ | 8 |
| 9 | 1.551.33 | $\cdot 6446$ I | 11.02656 | 7-10782 | 9 |
| 10 | 1.62889 | -61391 | 12.57789 | $7 \cdot 72173$ | 10 |
| 11 | 1.71034 | -58468 | 14.20679 | $8 \cdot 30641$ | 11 |
| 12 | I-79586 | -55684 | 15.91713 | $8 \cdot 86325$ | 12 |
| 13 | I -88565 | '53032 | 17.71298 | 9.39357 | 13 |
| 14 | 1.97993 | -50507 | 19.59863 | 9.89864 | 14 |
| 15 | 2.07893 | -48102 | $21 \times 57856$ | 10.37966 | 15 |
| 16 | 2.18287 | -45811 | 23.65749 | 10.83777 | 16 |
| 17 | 2.29202 | -43630 | 25.84037 | 11.27407 | 17 |
| 18 | $2 \cdot 40662$ | -41552 | $28 \cdot 13238$ | 11.68959 | 18 |
| 19 | 2.52695 | -39573 | $30 \cdot 53900$ | 12.08532 | 19 |
| 20 | 2.65330 | $\cdot 37689$ | 33.06595 | 12.4622 I | 20 |
| 21 | $2 \cdot 78596$ | -35894 | $35 \cdot 71925$ | 12.82115 | 21 |
| 22 | 2.92526 | $\cdot 34185$ | 38.50521 | 1.3 .16300 | 22 |
| 23 | 3.07152 | -32557 | 41.43048 | 13.48857 | 23 |
| 24 | 3.22510 | -31007 | $44 \cdot 50200$ | 13.79864 | 24 |
| 25 | $3 \cdot 38635$ | -29530 | 47 '72710 | 14.09394 | 25 |
| 26 | $3 \cdot 55567$ | -28124 | 51.11345 | 14.37518 | 26 |
| 27 | 3.73346 | $\cdot 26785$ | $54 \cdot 66913$ | 14.64303 | 27 |
| 28 | 3.92013 | -25509 | 58.40258 | 14.89813 | 28 |
| 29 | $4 \cdot 11614$ | -24295 | $62 \cdot 32271$ | 15.14107 | 29 |
| 30 | 4.32194 | -23138 | 66.43885 | 15.37245 | 30 |
| 3 I | 4.53804 | -22036 | $70 \cdot 76079$ | 15.5928 I | 31 |
| 32 | 4.76494 | -20987 | $75 \cdot 29883$ | 15.80268 | 32 |
| 33 | $5 \cdot 00319$ | -19987 | $80 \cdot 06377$ | 16.00255 | 33 |
| 34 | 5.25335 | -19035 | 85.06696 | $16 \cdot 19290$ | 34 |
| 35 | $5 \cdot 51602$ | -18129 | 90.32031 | 16.37419 | 35 |
| 36 | 5'79182 | -17266 | $95 \cdot 83632$ | $16 \cdot 54685$ | 36 |
|  | 6.08141 | -16444 | 101.62814 | 16.71129 | 37 |
| 38 | $6 \cdot 38548$ | -1566I | 107.70955 | 16.86789 | 38 |
| 39 | $6 \cdot 70475$ | -14915 | 114.09502 | 17.01704 | 39 |
| 40 | 7.03999 | -14205 | 120.79977 | 17-15909 | 40 |
| 41 | $7 \cdot 39199$ | - 3528 | 127.83976 | 17.29437 | 41 |
| 42 | $7 \cdot 76159$ | -12884 | 135.23175 | 17.42321 | 42 |
| 43 | 8.14967 | -12270 | 142.99334 | 17.54591 | 43 |
| 44 | $8 \cdot 55715$ | -11686 | 151.14301 | 17.66277 | 44 |
| 45 | 8.98501 | -11 [ 30 | 159.70016 | 17.77407 | 45 |
| 46 | $9 \cdot 43426$ | -10600 | 168.68516 | 17.88007 | 46 |
| 47 | 9.90597 | -10095 | $178 \cdot 11942$ | 17.98101 | 47 |
| 48 | 10.40127 | -09614 | 188.02539 | $18 \cdot 07716$ | 48 |
| 49 | 10.92133 | -09156 | 198.42666 | 18.16872 | 49 |
| 50 | II $4674{ }^{\circ}$ | $\cdot 08720$ | 209.34800 | 18.25592 | 50 |

For explanation see pp. 8-1 3

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 5 I | 12.04077 | -08305 | 220.81540 | 18.33898 | 51 |
| 52 | 12.6428 I | -07910 | $232 \cdot 85617$ | 18.41807 | 52 |
| 53 | 13.27495 | - 07533 | 24549897 | 18.49340 | 53 |
| 54 | 13.93870 | -07174 | 258.77392 | 18.56514. | 54 |
| 55 | 14.63563 | -06833 | 27271262 | 18.63347 | 55 |
| 56 | 15.36741 | -06507 | 287.34825 | 18.69854 | 56 |
| 57 | 16.13578 | -06197 | 302.71566 | 18.76052 | 57 |
| 58 | 16.94257 | -05902 | 318.85144 | 18.81954 | 58 |
| 59 | 17.78970 | -05621 | 335.79402 | 18.87575 | 59 |
| 60 | 18.67919 | -05354 | $353 \cdot 58372$ | 18.92929 | 60 |
| 61 | 19.61315 | -05099 | $372 \cdot 26290$ | 18.98027 | 61 |
| 62 | $20 \cdot 59380$ | . 04856 | $391 \cdot 87605$ | 19.02883 | 62 |
| 63 | 21.62349 | -04625 | 412.46985 | 19.07508 | 63 |
| 64 | $22 \cdot 70467$ | -04404 | $434 \times 9334$ | 19.11912 | 64 |
| 65 | 23.83990 | -04195 | 456'79801 | 19.16107 | 65 |
| 66 | $25^{\circ} \mathrm{O} 190$ | -03995 | $480 \cdot 63791$ | 19.20102 | 66 |
| 67 | 26.28349 | - 03805 | $505 \cdot 66981$ | 19.23907 | 67 |
| 68 | 27.59766 | -03623 | $531 \times 95330$ | 19.27530 | 68 |
| 69 | 28.97755 | -03451 | 559.55096 | 19.3098 I | 69 |
| 70 | 30'42643 | -03287 | 588.52851 | 19.34268 | 70 |
| 71 | $3 \mathrm{I} \cdot 94775$ | . 03130 | 618.95494 | 19.37398 | 71 |
| 72 | 33.54513 | -02981 | 650.90268 | 19.40379 | 72 |
| 73 | 35.22239 | -02839 | 684.44782 | 19.43218 | 73 |
| 74 | 36.9835 I | $\cdot 02704$ | 719.67021 | 19.45922 | 74 |
| 75 | 38.83269 | -02575 | 756.65372 | 19.48497 | 75 |
| 76 | $40 \cdot 77432$ | -02453 | 795-48640 | 19.50949 | 76 |
| 77 | $42 \cdot 81304$ | -02336 | $836 \cdot 26072$ | 19.53285 | 77 |
| 78 | 44.95369 | -02225 | 879.07376 | 19.55510 | 78 |
| 79 | $47 \cdot 20137$ | -02119 | 924.02745 | 19.57628 | 79 |
| 80 | 49'56144 | -02018 | $971 \times 22882$ | 19.59646 | 80 |
| 81 | 52.03951 | -01922 | $1020 \cdot 79026$ | 19.61568 | 81 |
| 82 | 54.64149 | - 01830 | 1072.82978 | 19.63398 | 82 |
| 83 | 57.37356 | -01743 | $1127.47 \mathrm{I26}$ | 19.65141 | 83 |
| 84 | 60.24224 | - 1666 | $1184 \cdot 84483$ | 19.66801 | 84 |
| 85 | 63.25435 | -OI581 | $1245{ }^{\circ} 08707$ | 19.68382 | 85 |
| 86 | 66.41707 | - 01506 | 1308.34142 | 19.69887 | 86 |
| $8 \cdot 7$ | 69.73792 | -OI434 | 1374.75849 | 19.71321 | 87 |
| 88 | 73.22482 | - 01366 | $1444 \times 49642$ | 19.72687 | 88 |
| 89 | $76 \cdot 88606$ | - OI 301 | 1517.72124 | 19.73987 | 89 |
| 90 | $80 \cdot 73037$ | -OI239 | 1594.60730 | 19.75226 | 90 |
| 91 | $84 \cdot 76688$ | - 0180 | 1675.33767 | 19.76406 | 91 |
| 92 | $89 \cdot 00523$ | -01124 | $1760 \cdot 10455$ | 19.77529 | 92 |
| 93 | 93.45549 | -01070 | $1849 \cdot 10978$ | ${ }^{19} 788599$ | 93 |
| 94 | 98-12826 | -01019 | $1942 \cdot 56527$ | 19.79618 | 94 |
| 95 | 103.03468 | -00971 | $2040 \cdot 69353$ | 19.80589 | 95 |
| 96 | 108.1864I | -00924 | 2143.72821 | 19.81513 | 96 |
| 97 | 113.59573 | -00880 | 2251.91462 | 19.82394 | 97 |
| 98 | 119.27552 | -00838 | $2365 \cdot 51035$ 2484.7858 | 19.83232 | 98 |
| 998 | 125.23929 | . 00798 | 2484.78586 | 19.84030 | +99 |
| 100 | 13155126 | -00760 | $2610 \cdot 02516$ | 19.84791 | 100 |

See also Tables on pp. xx-xxxi

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | 1 066000 | -94340 | 1 100000 | '94340 | I |
| 2 | I-12360 | -89000 | 2.06000 | 1.83339 | 2 |
| 3 | I-19102 | -83962 | 3.18360 | 2.67301 | 3 |
| 4 | I 262848 | $\cdot 79209$ | 4.37462 | 3.46511 | 4 |
| 5 | 1.33823 | '74726 | $5 \cdot 63709$ | 4.21236 | 5 |
| 6 | 1.41852 | -70496 | $6 \cdot 97532$ | 4.91732 | 6 |
| 7 | 1.50363 | . 66506 | $8 \cdot 39384$ | $5 \cdot 58238$ | 7 |
| 8 | I. 59385 | -62741 | 9.89747 | $6 \cdot 20979$ | 8 |
| 9 | I 68948 | -59190 | $11.49{ }^{\text {r }} 2$ | 6.80169 | 9 |
| 10 | 1.79085 | -55839 | $13 \cdot 18079$ | 7.36009 | 10 |
| 11 | I. 89830 | -52679 | 14.97164 | 7.88687 | 11 |
| 12 | $2 \cdot 1220$ | -49697 | 16.86994 | 8.38384 | 12 |
| 13 | 2.13293 | -46884 | 18.88214 | $8 \cdot 85268$ | 13 |
| 14 | $2 \cdot 26090$ | -44230 | 21.01507 | 9.29498 | 14 |
| 15 | $2 \cdot 39656$ | -41727 | 23.27597 | 9.71225 | 15 |
| 16 | $2 \cdot 54035$ | -39365 | 25.67253 | 10.10590 | 16 |
| 17 | 2.69277 | -37136 | 28.21288 | $10 \cdot 47726$ | 17 |
| 18 | 2.85434 | -35034 | $30 \cdot 90565$ | 10.82760 | 18 |
| 19 | 3.02560 | $\cdot 33051$ | 33.75999 | 11.15812 | 19 |
| 20 | $3 \cdot 20714$ | -31180 | 36.78559 | 11.46992 | 20 |
| 21 | 3.39956 | -29416 | 39.99273 | 11.76408 | 21 |
| 22 | 3.60354 | $\cdot 27751$ | 43.39229 | 12.04158 | 22 |
| 23 | 381975 | -26180 | 46.99583 | 12.30338 | 23 |
| 24 | 4.04893 | -24698 | 50.81558 | 12.55036 | 24 |
| 25 | 4.29187 | -23300 | $54 \cdot 8645$ I | 12.78336 | 25 |
| 26 | 4.54938 | -2198I | 59.15638 | 13.00317 | 26 |
| 27 | 4.82235 | -20737 | 63.70577 | 13.21053 | 27 |
| 28 | 5.11169 | -19563 | 68.52811 | 13.40616 | 28 |
| 29 | 5.41839 | -18456 | 73.63980 | 13.59072 | 29 |
| 30 | 574349 | -174II | 79.05819 | 13.76483 | 30 |
| 3 I | 6.08810 | -16425 | 84.80168 | 13.92909 | 31 |
| 32 | 6.45339 | -15496 | 90•88978 | 14.08404 | 32 |
| 33 | 6.84059 | -14619 | 97.34316 | 14.23023 | 33 |
| 34 | 7.25103 | - 13791 | 104.18375 | 14.36814 | 34 |
| 35 | 7.68609 | - 13011 | III 43478 | 14.49825 | 35 |
| 36 | 8.14725 | -12274 | 119.12087 | 14.62099 | 36 |
| 37 | 8.63609 | -11579 | 127.26812 | 14.73678 | 37 |
| 38 | 9.15425 | -10924 | 135.90421 | 14.84602 | 38 |
| 39 | $9 \cdot 70351$ | -10306 | 145.05846 | 14.94907 | 39 |
| 40 | $10 \cdot 28572$ | -09722 | 154.76197 | 15.04630 | 40 |
| 4 I | $10 \cdot 90286$ | -09172 | 165.04768 | $15 \cdot 13802$ | 41 |
| 42 | 11.55703 12.25045 | -08653 | 175.95054 | 15.22454 | 42 |
| 43 | $12 \cdot 25045$ | $\cdot 08163$ | $187 \cdot 50758$ | 15.30617 | 43 |
| 44 | 12.98548 | -07701 | 199.75803 | ${ }_{15} 58318$ | 44 |
| 45 | 13.76461 | -07265 | 212.74351 | 15.45583 | 45 |
| 46 | 14.59049 | . 06854 | $226 \cdot 50812$ | 15.52437 | 46 |
| 47 | 15.46592 | -06466 | 241.09861 | 15.58903 | 47 |
| 48 | 16.39387 17.37750 | .06100 | $256 \cdot 56453$ | 15.65003 | 48 |
| 49 50 | 17.37750 | -05755 | 27209584 I | 15.70757 | 49 |
| 50 | 18.42015 | -05429 | $290 \cdot 33590$ | $15 \% 6688$ | 50 |

For explanation see pp. 8-13

INTEREST TABLES

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Am̈ount | Present Value |  |
| 51 | 19.52536 | -05122 | $308 \cdot 75606$ | 15.81308 | 51 |
| 52 | $20 \cdot 69689$ | -04832 | $328 \cdot 28142$ | 15.86139 | 52 |
| 53 | 21.93870 | - 04558 | - 348.97831 | 15.90697 | 53 |
| 54 | 23.25502 | - 04300 | - 370.91701 | 15.94998 | 54 |
| 55 | 24.65032 | -04057 | 394-17203 | 15.99054 | 55 |
| 56 | 26-12934 | -03827 | 418.82235 | 16.02881 | 56 |
| 57 | 27.69710 | -03610 | 444.95169 | $16 \cdot 06492$ | 57 |
| 58 | 29.35893 | -03406 | $472 \cdot 64879$ | $16 \cdot 09898$ | 58 |
| 59 | $31 \cdot 12046$ | -03213 | $502 \cdot 00772$ | $16 \cdot 13111$ | 59 |
| 60 | $32 \cdot 98769$ | -03031 | $533 \cdot 12818$ | 16.16143 | 60 |
| 6 I | 34.96695 | - 02860 | $566 \cdot 11587$ | $16 \cdot 19003$ | 61 |
| 62 | 37.06497 | -02698 | 601.08282 | 16.21701 | 62 |
| 63 | $39 \cdot 28887$ | -02545 | 638-14779 | $16 \cdot 24246$ | 63 |
| 64 | 41.64620 | - 22401 | 67743666 | $16 \cdot 26647$ | 64 |
| 65 | $44 \cdot 14497$ | -02265 | $719 \cdot 08286$ | $16 \cdot 28912$ | 65 |
| 66 | $46 \cdot 79367$ | -22137 | $763 \cdot 22783$ | 16.31049 | 66 |
| 67 | 49.60129 | -02016 | 810.02150 | 16.33065 | 67 |
| 68 | $52 \cdot 57737$ | -01902 | $859 \cdot 62279$ | 16.34967 | 68 |
| 69 | 55.73201 | -01794 | $912 \cdot 20016$ | 16.36792 | 69 |
| 70 | $59^{\circ} \mathrm{7} 593$ | -O1693 | 967.93217 | $16 \cdot 38454$ | 70 |
| 71 | 62.62049 | -11597 | $1027 \cdot 00810$ | 16.40051 | 71 |
| 72 | 66.37772 | -1507 | $1089 \cdot 62859$ | 16.41158 | 72 |
| 73 | $70 \cdot 36038$ | -01421 | 1156.00630 | 16.42979 | 73 |
| 74 | 74.58200 | -01341 | $1226 \cdot 36668$ | ${ }^{16} 644320$ | 74 |
| 75 | 79.05692 | -OI265 | $1300 \cdot 94868$ | 16.45585 | 75 |
| 76 | $83 \cdot 80034$ | -OII93 | $1380 \cdot 00560$ | 16.46778 | 76 |
| 77 | 88.82836 | -01126 | 1463.80594 | 16.47904 | 77 |
| 78 | 94.15806 | -01062 | 1552.63429 | 16.48966 | 78 |
| 79 | 99.80754 | -01002 | $1646 \cdot 79235$ | 16.49968 | 79 |
| 80 | 10579599 | -00945 | 1746.59989 | $16 \cdot 50913$ | 80 |
| 8 I | 112.14375 | -00892 | 1852.39588 | 16.51805 | 81 |
| 82 | 118.87238 | -0084 1 | 1964.53964 | $16 \cdot 52646$ | 82 |
| 83 | 126.00472 | -00794 | 2083.41202 | $16 \cdot 53440$ | 83 |
| 84 | 133.56500 | -00749 | 2209.41674 | $16 \cdot 54188$ | 84 |
| 85 | 141.57890 | -00706 | 2342.98174 | $16 \cdot 54895$ | 85 |
| 86 | 150.07364 | -00666 | 2484.56065 | 16.55561 | 86 |
| 87 | 159.07806 | -00629 | 2634.63428 | $16 \cdot 56190$ | 87 |
| 88 | 168.72274 | -00593 | 279371234 | $16 \cdot 56783$ | 88 |
| 89 | 178.74010 | $\cdot 00559$ | $2962 \cdot 33508$ | 16.57342 | 89 |
| 90 | 189.46451 | -00528 | 3141.07519 | 16.57870 | 90 |
| 9 I | 200.83238 | -00498 | $3330 \cdot 53970$ | 16.58368 | 91 |
| 92 | 212.88232 | -00470 | $3531 \cdot 37208$ | $16 \cdot 58838$ | 92 |
| 93 | 225.65526 | -00443 | 3744.25441 | 16.5928 I | 93 |
| 94 | $239 \cdot 19458$ | -00418 | $3969 \cdot 90967$ | $16 \cdot 59699$ | 94 |
| 95 | $253 \cdot 54625$ | -00394 | $4209 \cdot 10425$ | $16 \cdot 60093$ | 95 |
| 96 | 268.75903 | -00372 | $4462 \cdot 65050$ | $16 \cdot 60465$ | 96 |
| 97 | 284.88457 | '00351 | $4731 \cdot 40953$ | $16 \cdot 60816$ | 97 |
| 98 | 301.97765 | -00331 | $5016 \cdot 29411$ | 16.61147 | 98 |
| 99 | 320.09631 | -00312 | $5318 \cdot 27175$ 5638.36806 | $16 \cdot 61460$ 16.61755 | 99 |
| 100 | $339 \cdot 30208$ | -00295 | $5638 \cdot 36806$ | $16 \cdot 61755$ | 100 |

See also Tables on pp. xx-xxxí

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amouut | Present Vaiue | Amount | Present Value |  |
| 1 | $1 \times 07000$ | ${ }^{\text {'9343 }}$ | 1.00000 | -93458 | 1 |
| 2 | I 1 14490 | . 87344 | 2.07000 | I.80802 | 2 |
| 3 | $1 \cdot 22504$ | .81630 | 3.21490 | 2.62432 | 3 |
| 4 | 1.31080 | ${ }^{7} 76290$ | 4.43994 | $3 \cdot 38721$ | 4 |
| 5 | 1.40255 | -71299 | 575074 | $4 \cdot 10020$ | 5 |
| 6 | 1•50073 | -66634 | $7 \cdot \mathrm{~T} 5329$ | 4.76654 | 6 |
| 7 | 1.60578 | -62275 | 8.65402 | $5 \cdot 38929$ | 7 |
| 8 | 1.71819 | -58201 | $10 \cdot 25980$ | 597130 | 8 |
| 9 | 1.83846 | -54393 | 1197799 | $6 \cdot 51523$ | 9 |
| 10 | 196715 | -50835 | 13.81645 | $7 \cdot 02358$ | 10 |
| 11 | 2-10485 | -47509 | 15.78360 | 7.49867 | 11 |
| 12 | 2.25219 | -44401 | 17.88845 | 794269 | 12 |
| 13 | 2.40985 | -41496 | $20 \cdot 14064$ | $8 \cdot 35765$ | 13 |
| 14 | $2 \cdot 57853$ | $\cdot 38782$ | 22.55049 | $8 \cdot 74547$ | 14 |
| 15 | 2.75903 | $\cdot 36245$ | $25 \cdot 12902$ | 9-10791 | 15 |
| 16 | 295216 | -33873 | $27 \cdot 88805$ | 9.44665 | 16 |
| 17 | 3-15882 | -31657 | $30 \cdot 84022$ | $9 \cdot 76322$ | 17 |
| I8 | 3.37993 | -29586 | 33.99903 | $10 \cdot 05909$ | 18 |
| 19 | 3.61653 | -27651 | 37.37896 | 10.33560 | 19 |
| 20 | $3 \cdot 86968$ | -25842 | $40 \cdot 99549$ | 10.59401 | 20 |
| 21 | 4-14056 | -24151 | $44 \cdot 86518$ | 10.83553 | 21 |
| 22 | 4.43040 | -22571 | 49.00574 | 11.06124 | 22 |
| 23 | 4.74053 | -21095 | 53.43614 | I1.27219 | 23 |
| 24 | 5.07237 | -19715 | 58-17667 | II 46933 | 24 |
| 25 | 542743 | -18425 | $63 \cdot 24904$ | 11.65358 | 25 |
| 26 | $5 \cdot 80735$ | -17220 | 68.67647 | 11-82578 | 26 |
| 27 | 6.21387 | -16093 | 74.48382 | II•98671 | 27 |
| 28 | $6 \cdot 64884$ | -15040 | $80 \cdot 69769$ | 12.13711 | 28 |
| 29 | $7 \cdot 11426$ | -14056 | 87.34653 | 12.27767 | 29 |
| 30 | 7.61226 | -13137 | 94*46079 | 12.40904 | 30 |
| 3 I | 8.1451I | -12277 | $102.073{ }_{4}$ | 12.53181 | 3 I |
| 32 | $8 \cdot 71527$ | -11474 | 110.21815 | 12.64656 | 32 |
| 33 | 9.32534 | -10723 | 118.93343 | 12.75379 | 33 |
| 34 | 9.9781 I | -10022 | $128 \cdot 25876$ | 12.85401 | 34 |
| 35 | $10 \cdot 67658$ | -09366 | 138.23688 | 12.94767 | 35 |
| 35 | 11.42394 | . 08754 | 148.91346 | 13.0352 I | 36 |
| 37 | 12.22362 | -08181 | 160.33740 | $13 \cdot 11702$ | 37 |
| 38 | 13.07927 | -07646 | $172 \cdot 56102$ | 13.19347 | 38 |
| 39 | 13.99482 | -07146 | 185.64029 | 13.26493. | 39 |
| 40 | 14.97446 | -06678 | 199.6351 I | 13.33171 | 40 |
| 4 I | 16.02267 | -66241 | 214.60957 | 13.39412 | 41 |
| 42 | 17.14426 | -05833 | 230.63224 | 13.45245 | 42 |
| 43 | 18.34435 | -05451 | 247.77650 | $13 \times 50696$ | 43 |
| 44 | 19.62846 | -05095 | $266 \cdot 12085$ | 13.55791 | 44 |
| 45 | 2I.00245 | -0476I | 285\%7493 ${ }^{\text {I }}$ | 13.60552 | 45 |
| 46 | 22.47262 | - 04450 | 306.75176 | 13.65002 | 46 |
| 47 | 24.04571 | -04159 | 329.22439 | 13.69161 | 47 |
| 48 | 25.72891 | -03887 | 353.27009 | 13.73047 13.76880 | 48 |
| 49 | 27.52993 | .03632 | 378.99900 | 13.76680 | 49 |
| 50 | 29.45703 | -03395 | 406-52893 | 13.80075 | 50 |

For explanation see pp. 8-13

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | $31 \cdot 51902$ | '03173 | 435.98595 | 13.83247 | 51 |
| 52 | 33.72535 | -02965 | $467 \cdot 50497$ | 13.86212 | 52 |
| 53 | 36.08612 | -02771 | $501 \cdot 23032$ | 13.88984 | 53 |
| 54 | 38.61215 | -02590 | $537 \cdot 31644$ | 13.91573 | 54 |
| 55 | 41.31500 | -02420 | 575.92859 | 13.93994 | 55 |
| 56 | 44.20705 | -02262 | 617-24359 | 13.96256 | 56 |
| 57 | 4730155 | . 02114 | 661.45065 | 13.98370 | 57 |
| 58 | 50.61265 | -01976 | 708.75219 | 14.00346 | 58 |
| 59 | 54'15554 | -01847 | 759.36484 | 14.02192 | 59 |
| 60 | 57.94644 | -01726 | 813.52038 | 14.03918 | 60 |
| 61 | $62 \cdot 00267$ | -01613 | 871.46681 | $14^{\circ} \mathrm{O} 5531$ | 61 |
| 62 | $66 \cdot 34286$ | -01507 | 933.46949 | 14.07038 | 62 |
| 63 | $70 \cdot 98686$ | - 01409 | 999.81235 | 14.08447 | 63 |
| 64 | 75.95594 | -01317 | 1070.79922 | 14.09764 | 64 |
| 65 | $8 \mathrm{I} \cdot 27285$ | -01230 | 1146.75516 | $14 \cdot 10994$ | 65 |
| 66 | 86.96195 | -OII 50 | 1228.02802 | 14•12144 | 66 |
| 67 | $93 \cdot 04929$ | -01075 | 1314.98998 | 14.13219 | 67 |
| 68 | 99.56274 | - 01004 | 1408.03928 | 14.14223 | 68 |
| 69 | 106.53213 | -00939 | 150760203 | 14.15162 | 69 |
| 70 | 113.98938 | -00877 | $1614 \cdot 13417$ | 14.16039 | 70 |
| 71 | 121.96864 | -00820 | 1728.12357 | $14 \cdot 16859$ | 71 |
| 72 | $130 \cdot 50644$ | -00766 | 1850009222 | $14 \cdot 17625$ | 72 |
| 73 | 139.64189 | -00716 | $1980 \cdot 59867$ | 14.18341 | 73 |
| 74 | 149.41682 | -00669 | $2120 \cdot 24058$ | 14.19010 | 74 |
| 75 | 159.87600 | '00625 | $2269 \cdot 65742$ | 14.19636 | 75 |
| 76 | 171.06732 | $\cdot 00585$ | 2429.53344 | 14.20220 | 76 |
| 77 | 183.04203 | -00546 | $2600 \cdot 60078$ | 14.20767 | 77 |
| 78 | 195.85498 | -00511 | $2783 \cdot 64283$ | 14.21277 | 78 |
| 79 | $209 \cdot 56483$ | -00477 | $2979 \cdot 49783$ | 14.21755 | 79 |
| 80 | 224.23437 | -00446 | 3189.06268 | 14.22201 | 80 |
| 81 | 239.93077 | -00417 | 3413.29707 | 14.22617 | 81 |
| 82 | $256 \cdot 72592$ | -00390 | $3653 \cdot 22786$ | 14.23007 | 82 |
| 83 | 274.69674 | . 00364 | 3909.95381 | 14.23371 | 83 |
| 84 | 293.92551 | -00340 | $4184 \cdot 65058$ | 14.23711 | 84 |
| 85 | 314.50029 | -00318 | $4478 \cdot 57612$ | 14.24029 | 85 |
| 86 |  | -00297 |  |  |  |
| 87 | 360.07139 | -00278 | 5129.59180 | 14.24604 | 87 |
| 88 | 385.27638 | -00260 | $5489 \cdot 66323$ | 14.24863 | 88 |
| 89 | 412.24573 | -00243 | 5874.93965 | 14.25106 | 89 |
| 90 | 441'10293 | -00227 | $6287 \cdot 18543$ | 14.25333 | 90 |
| 91 | 471.98014 | -00212 | $6728 \cdot 2884 \mathrm{I}$ | 14.25545 | 91 |
| 92 | $505 \cdot 01875$ | -00198 | $7200 \cdot 26859$ | 14.25743 | 92 |
| 93 | $540 \cdot 37006$ | -0185 | $7705 \cdot 28740$ | 14.25928 | 93 |
| 94 | $578 \cdot 19596$ | -00173 | $8245 \cdot 65751$ | 14.26101 | 94 |
| 95 | 618.66968 | -00162 | $8823 \cdot 85354$ | 14.26262 | 95 |
| 96 | 661 197656 | -00151 | 9442-52329 | 14.26413 | 96 |
| 97 | 708.31492 | -00141 | 10104.49992 | 14.26555 | 97 |
| 98 | 757.89696 | -00132 | $10812 \cdot 81491$ | 14.26686 | 98 |
| 99 | 810.94975 | '00123 | $11570 \cdot 71196$ | 14.26810 | 99 |
| 100 | 867.71623 | -00115 | 12381*66179 | 14.26925 | 100 |

See also Tables on pp. xx-xxmi

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | 1.08000 | -92593 | 1 100000 | -92593 | 1 |
| 2 | 1-16640 | . 85734 | 2.08000 | $1 \cdot 78326$ | 2 |
| 3 | I 25971 | '79383 | 3.24640 | $2 \cdot 57710$ | 3 |
| 4 | 1.36049 | $\cdot 73503$ | $4 \cdot 50611$ | 3.31213 | 4 |
| 5 | I 46933 | -68058 | 5.86660 | 3.9927 I | 5 |
| 6 | 1.58687 | -63017 | 7.33593 | $4 \cdot 62288$ | 6 |
| 7 | 1.71382 | -58349 | 8.92280 | $5 \cdot 20637$ | 7 |
| 8 | 1.85093 | $\cdot 54027$ | 10.63663 | 5.74664 | 8 |
| 9 | $1{ }^{1} 99900$ | -50025 | 12.48756 | $6 \cdot 24689$ | 9 |
| 10 | $2 \cdot 15892$ | -46319 | 14.48656 | $6 \cdot 71008$ | 10 |
| 11 | $2 \cdot 33164$ | -42888 | $16 \cdot 64549$ | $7 \cdot 13896$ | 11 |
| 12 | $2 \cdot 51817$ | -39711 | 18.97713 | 7.53608 | 12 |
| 13 | 2.71962 | -36770 | 21.49530 | 7.90378 | 13 |
| 14 | 2.93719 | $\cdot 34046$ | 24.21492 | 8.24424 | 14 |
| 45 | $3 \cdot 17217$ | -31524 | 2715211 | $8 \cdot 55948$ | 15 |
| 16 | 3.42594 | -29189 | 30.32428 | 8.85137 | 16 |
| 17 | $3 \cdot 70002$ | $\cdot 27027$ | $33 \cdot 75023$ | $9 \cdot 12164$ | 17 |
| 18 | 3.99602 | -25025 | 37.45024 | 9.37189 | 18 |
| 19 | 4.31570 | $\cdot 23171$ | 41.44626 | 9.60360 | 19 |
| 20 | $4 \cdot 66096$ | -21455 | 45*76196 | 9.81815 | 20 |
| 21 | 5.03383 | -19866 | 50.42292 | 10.01680 | 21 |
| 22 | 5.43654 | -18394 | 55.45676 | 10.20074 | 22 |
| 23 | 5.87146 | -17032 | 60.89330 | $10 \cdot 37106$ | 23 |
| 24 | 6.34118 | - 15770 | $66 \cdot 76476$ | $10 \cdot 52876$ | 24 |
| 25 | 6.84848 | - 14602 | 73•10594 | 10.67478 | 25 |
| 26 | 7.39635 | -13520 |  | 10.80998 | 26 |
| 27 | 7.98806 | -12519 | 87.35077 | 10.93516 | 27 |
| 28 | $8 \cdot 62711$ | - II 591 | 95.33883 | 11.05108 | 28 |
| 29 | 931727 | -10733 | 103.96593 | II. 15841 | 29 |
| 30 | $10 \cdot 06266$ | -09938 | 113.28321 | 11.25778 | 30 |
| 3 I | 10.86767 | -09202 | 123.34587 | 11.34980 | 3 I |
| 32 | $11 \cdot 73708$ | -08520 | 134.21354 | 11.43500 | 32 |
| 33 | 12.67605 | -07889 | 145.95062 | II.51389 | 33 |
| 34 | 13.69013 | ${ }^{0} 7305$ | 158.62667 | II•58693 | 34 |
| 35 | 14.78534 | . 06763 | $172 \cdot 31680$ | 11.65457 | 35 |
| 36 | 15.96817 | -06262 | 187.10215 | 11.71719 | 36 |
| 37 | 17.24563 | -05799 | 203.07032 | 11.77518 | 37 |
| 38 | 18.62528 | -05369 | 220.31595 | 11.82887 | 38 |
| 39 | 20.11530 | -04971 | 238.94122 | 11.87858 | 39 |
| 40 | 21.72452 | -04603 | 259.05652 | I 1 9 92461 | 40 |
| 4 I | 23.46248 | -04262 | $280 \cdot 78104$ | 11.96723 |  |
| 42 | 25.33948 | -03946 | 304.24352 | 12.00670 | 42 |
| 43 | 27.36664 | -03654 | 329.58301 | 12.04324 | 43 |
| 44 | 29.55597 | -03383 | 356.94965 | 12.07707 | 44 |
| 45 | 31.92045 | '03133 | $386 \cdot 50562$ | $12 \cdot 10840$ | 45 |
| 46 | 34.47409 | . 02901 | $418 \cdot 42607$ | $12 \cdot 13741$ | 46 |
| 47 | 37.23201 | -02686 | 452.90015 | $12 \cdot 16427$ | 47 |
| 48 | $40 \cdot 21057$ | -02487 | $490 \cdot 13216$ | 12.18914 | 48 |
| 49 | 43.42742 | -02303 | $530 \cdot 34274$ | 12.21216 | 49 |
| 50 | $46 \cdot 90161$ | -02132 | $573 \cdot 77016$ | $12 \cdot 23348$ | 50 |

For explanation see pp. $8-13$

| Tears | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 5 I | 50.65374 | -O1974 | 620.67177 | 12.25323 | 51 |
| 52 | 54.70604 | -O1828 | $671 \cdot 32551$ | 12.27151 | 52 |
| 53 | 59.08252 | -01693 | 726.03155 | $12 \cdot 28843$ | 53 |
| 54 | $63 \cdot 80913$ | -01567 | 78511408 | 12.30410 | 54 |
| 55 | 68.91386 | -01451 | 848.92320 | $12 \cdot 3186 \mathrm{I}$ | 55 |
| 56 | 74.42696 | -01344 | 917.83706 | $12 \cdot 33205$ | 56 |
| 57 | $80 \cdot 38112$ | -OI244 | $992 \cdot 26402$ | $12 \cdot 34449$ | 57 |
| 58 | 86.81161 | -01152 | 1072.64514 | $12 \cdot 35601$ | 58 |
| 59 | 93.75654 | -01067 | 1159.45676 | $12 \cdot 36668$ | 59 |
| 60 | 101.25706 | -00988 | 1253.21330 | $12 \cdot 37655$ | 60 |
| 61 | $109 \cdot 35763$ | -00914 | 1354.47036 | 12.38570 | 61 |
| 62 | I18'10624 | -00847 | 1463.82799 | 12.39416 | 62 |
| 63 | 127.55474 | -00784 | 1581.93423 | 12.40200 | 63 |
| 64 | 137.75912 | -00726 | 1709.48897 | 12.40926 | 64 |
| 65 | 148.77985 | -00672 | 1847.24808 | 12.41598 | 65 |
| 66 | 160.68223 | -00622 | 1996.02793 | 12.42221 | 66 |
| 67 | 173.5368 I | $\cdot 00576$ | $2156 \cdot 71016$ | 12.42797 | 67 |
| 68 | 187.41976 | -00534 | $2330 \cdot 24698$ | 12.43330 | 68 |
| 69 | 202.41334 | -00494 | $2517 \cdot 66673$ | 12.43824 | 69 |
| 70 | 218.6064 x | -00457 | $2720 \cdot 08007$ | 12.44282 | 70 |
| 71 | 236.09492 | -00424 | 2938.68648 | 12.44705 | 71 |
| 72 | 254.9825 I | -00392 | 3174.78140 | 12.45098 | 72 |
| 73 | 275.38111 | -00363 | 3429.76391 | 12.45461 | 73 |
| 74 | 29741160 | -00336 | $3705 \cdot 14502$ | 12.45797 | 74 |
| 75 | $321 \cdot 20453$ | -003II | $4002 \cdot 55662$ | 12.46108 | 75 |
| 76 | 346.90089 | -00288 | $4323 \cdot 76115$ | 12.46397 | 76 |
| 77 | $374 \cdot 65296$ | -00267 | $4670 \cdot 66205$ | 12.46664 | 77 |
| 78 | 404.62520 | -00247 | 5045.31501 | 12.46911 | 78 |
| 79 | $436 \cdot 99522$ | -00229 | 5449.9402 I | 12.47139 | 79 |
| 80 | $47{ }^{\circ} 95483$ | -00212 | $5886 \cdot 93543$ | 12.47351 | 80 |
| 81 | 509.71122 | -00196 | $6358 \cdot 89026$ | 12.47548 | 81 |
| 82 | $550 \cdot 48812$ | $\cdot 00182$ | $6868 \cdot 60148$ | 12.47729 | 82 |
| 83 | 594.52717 | -00168 | 7419.08960 | 12.47897 | 83 |
| 84 | 642.08934 | -00156 | 8013.61677 | 12.48853 | 84 |
| 85 | 693.45649 | -00144 | 8655 706II | 12.48197 | 85 |
| 86 | $748 \cdot 93301$ | -00134 | 9349 16260 | 12.48331 | 86 |
| 87 | 808.84765 | -00124 | 10098.09561 | 12.48455 | 87 |
| 88 | $873 \cdot 55546$ | -00114 | 10906.94326 | 12.48569 | 88 |
| 89 | 943.43990 | -00106 | $11780 \cdot 49872$ | 12.48675 | 89 |
| 90 | 1018.91509 | -00098 | 12723.93862 | 12.48773 | 90 |
| 91 | 1100.42830 | -00091 | $13742 \cdot 85370$ | 12.48864 | 91 |
| 92 | 1188.46256 | -00084 | 14843.28200 | 12.48948 | 92 |
| 93 | 1283.53956 | $\cdot 00078$ | 16031.74456 | 12.49026 | 93 |
| 94 | 1386.22273 | $\cdot 00072$ | 17315.28413 | 12.49098 | 94 |
| 95 | $1497 \cdot 12055$ | $\cdot 00067$ | $18701 \cdot 50686$ | 12.49165 | 95 |
| 96 | $1616 \cdot 89019$ | -00062 | 20198.62740 | 12.49227 | 96 |
| 97 | $1746 \cdot 24141$ | $\cdot 00057$ | 21815.51760 | 12.49284 | 97 |
| 98 | 1885.94072 | -00053 | 23561.75900 | 12.49337 | 98 |
| +99 | 2036.81598 | -00049 | $25447 \cdot 69972$ | 12.49386 | 99 |
| :100 | 2199776126 | . 00045 | 27484*51570 | 12.49432 | 100 |

See also Tables on pp. xx-xxxi

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 1 | $1 \cdot 09000$ | -91743 | 1.00000 | $\cdot 91743$ | 1 |
| 2 | I-18810 | -84168 | $2 \cdot 09000$ | I 759 I | 2 |
| 3 | 1.29503 | 77218 | 3.27810 | $2 \cdot 53129$ | 3 |
| 4 | 141158 | $\cdot 70843$ | 4.57313 | 3.23972 | 4 |
| 5 | 1-53862 | -64993 | 5.9847 I | 3.88965 | 5 |
| 6 | 1.67710 | - 59627 | $7 \cdot 52333$ | 4.48592 | 6 |
| 7 | I.82804 | -54703 | 9.20043 | 5.03295 | 7 |
| 8 | I.99256 | -50187 | 11.02847 | $5 \cdot 53482$ | 8 |
| 9 | $2 \cdot 17189$ | -46043 | 13.02104 | 5.99525 | 9 |
| 10 | $2 \cdot 36736$ | -4224I | 15•19293 | 6.41766 | 10 |
| 11 | $2 \cdot 58043$ | -38753 | 17.56029 | 6.80519 | II |
| 12 | 2.81266 | -35553 | $20 \cdot 14072$ | $7 \cdot 16073$ | 12 |
| 13 | 3.06580 | -32618 | $22 \cdot 95338$ | 7.48690 | 13 |
| 14 | 3.34173 | - 29925 | 26.01919 | $7 \cdot 78615$ | 14 |
| 15 | 3'64248 | -27454 | 29.36092 | $8 \cdot 06069$ | 15 |
| 16 | 3.9703 I | .25187 | 33.00340 | $8 \cdot 31256$ | 16 |
| 17 | $4 \cdot 32763$ | -23107 | 36.97370 | 8.54363 | 17 |
| 18 | 4.71712 | -21199 | $41 \cdot 30134$ | $8 \cdot 75563$ | 18 |
| 19 | 5'14166 | -19449 | $46 \cdot 01846$ | $8 \cdot 9501 \mathrm{I}$ | 19 |
| 20 | $5 \cdot 6044 \mathrm{I}$ | -17843 | 51•16012 | $9 \cdot 12855$ | 20 |
| 2 I | 6.10881 | -16370 | 56.76453 | 9.29224 | 21 |
| 22 | $6 \cdot 65860$ | -15018 | 62.87334 | 9.44243 | 22 |
| 23 | 7.25787 | -13778 | 69.53914 | 9.5802 I | 23 |
| 24 | 791108 | - 12640 | $76 \cdot 78981$ | 9.70661 | 24 |
| 25 | $8 \cdot 62308$ | -11597 | 84.70090 | $9 \cdot 82258$ | 25 |
| 26 | $9 \cdot 39916$ | -10639 | 93.32398 | 9.92897 | 26 |
| 27 | 10.24508 | -0976I | 102.72313 | $10 \cdot 22658$ | 27 |
| 28 | 11.16714 | -08955 | 112.96822 | $10 \cdot 11613$ | 28 |
| 29 | 12.17218 13.26768 | -08215 | 124.13536 | $10 \cdot 19828$ | 29 |
| 30 | 13.26768 | -07537 | 136.30754 | 10.27365 | 30 |
| 31 | 14.46177 | -06915 | 149.57522 | 10.34280 | 31 |
| 32 | 15.76333 | -06344 | 164.03699 | 10.40624 | 32 |
| 33 | 17.18203 | -05820 | 179.80032 | 10.46444 | 33 |
| 34 | 18.72841 | -05339 | 196.98234 | $10 \cdot 51784$ | 34 |
| 35 | 20.41397 | -04899 | 215.71075 | $10 \cdot 56682$ | 35 |
| 36 | 22.25123 | -04494 | 236.12472 | 10.61176 | 36 |
|  | 24.25384 | -04123 | $258 \cdot 37595$ | $10 \cdot 65299$ | 37 |
| 38 | 26.43668 | -03783 | 282.62978 | $10 \cdot 69082$ | 38 |
| 39 | 28.81598 | -03470 | 309.06646 | 10.72552 | 39 |
| 40 | 31-40942 | -03184 | $337 \cdot 88245$ | 10.75736 | 40 |
| 41 | 34.23627 | -02921 | 369.29187 | 10.78657 | 4 I |
| 42 | 37.31753 | -02680 | $403 \cdot 52813$ | 10.81337 | 42 |
| 43 | $40 \cdot 6761 \mathrm{I}$ | -02458 | $440 \cdot 84566$ | 10.83795 | 43 |
| 44 | 44.33696 | -02255 | 481.52177 | $10 \cdot 86051$ | 44 |
| 45 | $48 \cdot 32729$ | -02069 | 525.85873 | 10.88120 | 45 |
| 46 | 52.67674 | -01898 | 574.18602 | 10.90018 | 46 |
| 47 | 57.41765 | -01742 | $626 \cdot 86276$ | 10.91760 | 47 |
| 48 | 62.58524 68.21791 | -01598 | 684.28041 | $10 \cdot 93358$ | 48 |
| 49 | 68.21791 74.35752 | -OI466 | 746.86565 | 10.94823 | 49 |
| 50 | 74.35752 | -OI345 | 815.08356 | 10.96168 | 50 |

For explanation see pp. 8-13

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 81.04970 | -OI234 | 889:44108 | 10.97402 | 51 |
| 52 | $88 \cdot 34417$ | -OII32 | $970 \cdot 49077$ | $10 \cdot 98534$ | 52 |
| 53 | 96.29514 | -OIO38 | 1058.83494 | 10.99573 | 53 |
| 54 | 104.96171 | -00953 | 1155.13009 | II 00525 | 54 |
| 55 | 114.40826 | -00874 | 1260.09180 | 11.01399 | 55 |
| 56 | 124.70501 | -00802 | 1374.50006 | 11.02201 | 56 |
| 57 | 135.92846 | -00736 | 1499.20506 | 11.02937 | 57 |
| 58 | $148 \cdot 16202$ | -00675 | $1635 \cdot 13352$ | 11.03612 | 58 |
| 59 | 161.49660 | -00619 | 1783.29553 | 11.04231 | 59 |
| 60 | 176.03129 | -00568 | 1944.79213 | 11.04799 | 60 |
| 61 | $191 \cdot 87411$ | -00521 | $2120 \cdot 82342$ | 11.05320 | 61 |
| 62 | 209.14278 | -00478 | 2312.69753 | 11.05798 | 62 |
| 63 | 227.96563 | -00439 | 2521.8403 I | 11.06237 | 63 |
| 64 | $248 \cdot 48253$ | -00402 | $2749 \cdot 80594$ | 11.06640 | 64 |
| 65 | $270 \cdot 84596$ | -00369 | $2998 \cdot 28847$ | 11.07009 | 65 |
| 66 | 295.22210 | -00339 | 3269.13444 | 11.07347 | 66 |
| 67 | 321.79209 | .00311 | 3564.35654 | 11.07658 | 67 |
| 68 | 350.75338 | $\cdot 00285$ | $3886 \cdot 14862$ | 11.07943 | 68 |
| 69 | $382 \cdot 32118$ | -00262 | 4236.90200 | 11.08205 | 69 |
| 70 | $4^{16 \cdot 73009}$ | -00240 | 4619.22318 | 11.08445 | 70 |
| 71 | 45423579 | -00220 | 5035.95327 | I 1 08665 | 71 |
| 72 | $495 \cdot 11702$ | -00202 | $5490 \cdot 18906$ | I I 08867 | 72 |
| 73 | 539.67755 | -00185 | $5985 \cdot 30608$ | II 009052 | 73 |
| 74 | $588 \cdot 24853$ | -00170 | 6524.98362 | 11.09222 | 74 |
| 75 | $641 \cdot 19089$ | -00156 | 7113.23215 | I I 099378 | 75 |
| 76 | $698 \cdot 89807$ | -00143 | 7754.42304 | 11.09521 | 76 |
| 77 | 761.79890 | -00131 | 8453.32112 | 11.09653 | 77 |
| 78 | $830 \cdot 36080$ | -00120 | 9215.12002 | 11.09773 | 78 |
| 79 | 905.09327 | -00110 | 10045.48082 | 11.09883 | 79 |
| 80 | 986.55167 | - 0101 | $10950 \cdot 57409$ | 11.09985 | 80 |
| 81 | 1075.34132 | -00093 | 11937.12576 | 11.10078 | 81 |
| 82 | $1172 \cdot 12204$ | -00085 | 13012.46708 | $11 \cdot 10163$ | 82 |
| 83 | 1277.61302 | $\cdot 00078$ | 14184.58911 | II'10241 | 83 |
| 84 | 1392.59819 | -00072 | $15462 \cdot 20213$ | $11 \cdot 10313$ | 84 |
| 85 | 1517.93203 | -00066 | 16854.80033 | 11•10379 | 85 |
| 86 | 1654.54591 | -00060 | $18372 \cdot 73236$ | 11'10440 | 86 |
| 87 | 1803.45504 | . 00055 | 20027.27827 | $11 \cdot 10495$ | 87 |
| 88 | 1965.76600 | -00051 | 21830.7333 I | $11 \cdot 10546$ | 88 |
| 89 | 2142.68494 | -00047 | 23796.49931 | 11-10593 | 89 |
| 90 | $2335 \cdot 52658$ | -00043 | $25939 \cdot 18425$ | II 1 IO635 | 90 |
| 91 | $2545 \cdot 72397$ | -00039 | 28274.71083 | I I•10675 | 91 |
| 92 | $2774 \cdot 83913$ | -00036 | 30820.43481 | 11-1071 | 92 |
| 93 | 3024.57465 | -00033 | 33595.27394 | 11•10744 | 93 |
| 94 | $3296 \cdot 78637$ | -00030 | 36619.84859 | 11•10774 | 94 |
| 95 | 3593.49715 | -00028 | 39916.63497 | 11•10802 | 95 |
| 96 | 3916.91189 | -00026 | 43510'13211 | 11-10827 | 96 |
| 97 | 4269.43396 | .00023 | 47427.04400 | 11.10851 | 97 |
| 98 | $4653 \cdot 68302$ | -0002 1 | $51696 \cdot 47796$ | 11.10872 | 98 |
| 99 | $5072 \cdot 51449$ | -00020 | $56350 \cdot 16098$ | $11 \cdot 10892$ | 99 |
| 100 | 5529.04079 | -00018 | 61422.67547 | 11.10910 | 100 |

See also Tables on pp. xx-xxxi

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| $I$ | I•10000 | -90909 | 1.00000 | -90909 | 1 |
| 2 | 1.21000 | -82645 | $2 \cdot 10000$ | 1.73554 | 2 |
| 3 | 1.33100 | 75131 | 3.31000 | 2.48685 | 3 |
| 4 | I.46410. | -68301 | 4.64100 | $3 \cdot 16987$ | 4 |
| 5 | 1.61051 | -62092 | 6.10510 | 3'79079 | 5 |
| 6 | 1.77156 | -56447 | 771561 | $4 \cdot 35526$ | 6 |
|  | 1.94872 | $\cdot 51316$ | 9.48717 | 4.86842 | 7 |
| 8 | $2 \cdot 14359$ | -46651 | 11.43589 | $5 \cdot 33493$ | 8 |
| 9 | 2.35795 | -42410 | 13.57948 | $5 \cdot 75902$ | 9 |
| 10 | $2 \cdot 59374$ | -38554 | 15.93742 | $6 \cdot 14457$ | 10 |
| II | 2.85312 | -35049 | 18.53117 | 6.49506 | II |
| 12 | $3 \cdot 13843$ | -31863 | 21.38428 | 6.81369 | 12 |
| 13 | 3.45227 | -28966 | 24.52271 | $7 \cdot 10336$ | 13 |
| 14 | 3.79750 | -26333 | 27.97498 | $7 \cdot 36669$ | 14 |
| 15 | 4*17725 | -23939 | 31.77248 | $7 \cdot 60608$ | 15 |
| 16 | 4•59497 | -21763 | 35*94973 | 7.82371 | 16 |
| 17 | 5.05447 | -19784 | $40 \cdot 54470$ | 8.02155 | 17 |
| 18 | $5 \cdot 55992$ | -17986 | $45 \cdot 59917$ | $8 \cdot 20141$ | 18 |
| 19 | $6 \cdot 11591$ | -16351 | 55•15909 | 8.36492 | 19 |
| 20 | 6.72750 | -14864 | 57:27500 | $8 \cdot 51356$ | 20 |
| 21 | $7 \cdot 40025$ | -13513 | 64.00250 | $8 \cdot 64869$ | 21 |
| 22 | $8 \cdot 14027$ | - 12285 | 71.40275 | $8 \cdot 77154$ | 22 |
| 23 | 8.95430 | -11168 | 79.54302 | 8.88322 | 23 |
| 24 | 9.84973 | -10153 | 88.49733 | 8.98474 | 24 |
| 25 | 10.8347 I | -09230 | 98-34706 | 9.07704 | 25 |
| 26 | 11.91818 | -08391 | 109.18177 | 9•16095 | 26 |
| 27 | $13 \cdot 10999$ | '07628 | 121.09994 | 9.23722 | 27 |
| 28 | 14.42099 | -06934 | 134.20994 | $9 \cdot 30657$ | 28 |
| 29 | 15.86309 | -06304 | 148.63093 | $9 \cdot 36961$ | 29 |
| 30 | 17.44940 | -0573I | 164.49402 | $9 \cdot 42691$ | 30 |
|  | 19.19434 | - 05210 | 181 94342 | 947901 | 31 |
| 32 | 21.11378 | -04736 | 201.13777 | $9 \cdot 52638$ | 32 |
| 33 | 23.22515 | -04306 | 222.25154 | 9.56943 | 33 |
| 34 | 25.54767 | -03914 | 245.47670 | ${ }^{9} \cdot 6.6857$ | 34 |
| 35 | $28 \cdot 10244$ | -03558 | $271 \times 2437$ | 9.64416 | 35 |
| 36 | 30.91268 | -03235 | 299'12681 | $9 \cdot 67651$ | 36 |
| 37 | $34 \cdot 00395$ | -0294r | 330.03949 | $9 \cdot 70592$ | 37 |
| 38 | $37 \cdot 40434$ | -02673 | 364.04343 | 9.73265 0.75696 | 38 |
| 39 | 4I•14478 | -02430 | 40144778 | 975696 | 39 |
| 40 | $45 \cdot 25926$ | -02209 | $442 \cdot 59256$ | 9.77905 | 40 |
| 4 I | 49.78518 | -02009 | 487.85181 | 9:79914 | 41 |
| 42 | 54.76370 | -01826 | 537.63699 | 9.81740 | 42 |
| 43 | $60 \cdot 24007$ | -01660 | $592 \cdot 40069$ | 9.83400 | 43 |
| 44 | $66 \cdot 26408$ | -01509 | $652 \cdot 64076$ | 9.84909 | 44 |
| 45 | $72 \cdot 89048$ | -01372 | $718 \cdot 90484$ | 9.8628! | 45 |
| 46 | $80 \cdot 17953$ | - 01247 | $791 \cdot 79532$ | 9.87528 | 46 |
| 47 | 88.19749 | - 01134 | 871.97485 | 9.88662 | 47 |
| 48 | 97-01723 | -0103I | $960 \cdot 17234$ $1057 \cdot 18957$ | 9.89693 9.90630 | 48 |
| 49 50 | 106.71896 117.39085 | ${ }^{\cdot} \cdot 00937$ | $1057 \cdot 18957$ 1163.90853 | 9.90630 9.91481 | 49 50 |

For explanation see pp. 8-13

INTEREST TABLES

| Years | ONE POUND |  | ONE POUND PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Present Value | Amount | Present Value |  |
| 51 | 129•12994 | . 00774 | 1281-29938 | 9.92256 | 51 |
| 52 | 142.04293 | -00704 | 1410.42932 | 9.92960 | 52 |
| 53 | 156.24723 | $\bullet 00640$ | 1552.47225 | 9.93600 | 53 |
| 54 | 171.87195 | $\cdot 00582$ | 1708.71948 | 9.94182 | 54 |
| 55 | 189.05914 | -00529 | 1880.59142 | 9.94711 | 55 |
| 56 | 207.96506 | -00481 | $2069 \cdot 65057$ | 9.95191 | 56 |
| 57 | 228 766156 | -00437 | 2277 61562 | 9.95629 | 57 |
| 58 | 251.63772 | -00397 | $2506 \cdot 37719$ | 9.96026 | 58 |
| 59 | 276.80149 | -00361 | 2758.1490 | 9.96387 | 59 |
| 60 | 304.48164 | -00328 | $3034 \cdot 81640$ | 9.96716 | 60 |
| 6 I | 334.92980 | -00299 | 3339.29803 | 9.97014 | 61 |
| 62 | 368-42278 | -00271 | $3674 \cdot 22784$ | 9.97286 | 62 |
| 63 | $405 \cdot 26506$ | -00247 | $4042 \cdot 65062$ | 9.97532 | 63 |
| 64 | $445 \cdot 79157$ | -00224 | $4447 \cdot 91568$ | 9.97757 | 64 |
| 65 | $490 \cdot 37073$ | -00204 | 4893 ${ }^{\prime} 70725$ | 997961 | 65 |
| 66 | $539 \cdot 40780$ | -00185 | 5384.07798 | 9.98146 | 66 |
| 67 | 593.34858 | -00169 | 5923.48578 | 9.98315 | 67 |
| 68 | 652.68344 | '00153 | $6516 \cdot 83435$ | 9.98468 | 68 |
| 69 | 717.95178 | ${ }^{\circ} \mathrm{OO} 139$ | 7169.51779 | $9 \cdot 98607$ | 69 |
| 70 | 789.74696 | -00127 | 788746957 | $9 \cdot 98734$ | 70 |
| 71 | 868.72165 | -00115 | 8677.21652 | $9 \cdot 98849$ | 7 7 |
| 72 | 955.59382 | -00105 | 9545.93818 | $9 \cdot 98954$ | 72 |
| 73 | $1051 \cdot 15320$ | $\cdot 00095$ | 10501.53199 | $9 \cdot 99049$ | 73 |
| 74 | $1156 \cdot 26852$ | -00086 | $11552 \cdot 68519$ | 9 99135 | 74 |
| 75 | 1271-89537 | -00079 | 12708.95371 | 9.99214 | 75 |
| 76 | 1399.08491 | -00071 | $13980 \cdot 84909$ | $9 \cdot 99285$ | 76 |
| 77 | 1538.99340 | -00065 | 15379 '93399 | 9.99350 | 77 |
| 78 | $1692 \cdot 89274$ | -00059 | 16918.92739 | 9.99409 | 78 |
| 79 | 1862 -18201 | -00054 | 18611.82013 | 9'99463 | 79 |
| 80 | 2048.40021 | '00049 | $20474{ }^{\circ} 00215$ | 9.99512 | 80 |
| 81 | 2253.24024 | -00044 | 22522.40236 | $9 \cdot 99556$ | 81 |
| 82 | $2478 \cdot 56426$ | -00040 | 24775.64260 | 9.99597 | 82. |
| 83 | 2726.42069 | -00037 | 27254.20686 | 9.99633 | 83 |
| 84 | $2999 \cdot 06275$ | -00033 | $29980 \cdot 62754$ | 9.99667 | 84 |
| 85 | 3298.96903 | -00030 | 32979.69030 | 9.99697 | 85 |
| 86 | $3628 \cdot 86593$ | -00028 | $36278 \cdot 65932$ | $9 \cdot 99724$ | 86 |
| 87 | 3991.75253 | -00025 | 39907.52526 | $9 \cdot 99749$ | 87 |
| 88 | $4390 \cdot 92778$ | ${ }^{\circ} 00023$ | 43899.27778 | 9.99772 | 88 |
| 89 | $4830 \cdot 02056$ | -0002I | $48290 \cdot 20556$ | 9.99793 | 89 |
| 90 | 5313.02261 | '00019 | $53120 \cdot 26612$ | $9 \cdot 99812$ | 90 |
| 9 I | $5844 \cdot 32487$ | -00017 | $58433 \cdot 24873$ | 9.99829 | 91 |
| 92 | $6428 \cdot 75736$ | -00016 | 64277.57360 | 9.99844 | 92 |
| 93 | 7071.63310 | -00014 | $70706 \cdot 33096$ | 9.99859 | 93 |
| 94 | $7778 \cdot 79641$ | -00013 | 77777.96406 | 9.9987 I | 94 |
| 95 | $8556 \cdot 67605$ | - 00012 | $85556 \cdot 76046$ | 9•99883 | 95 |
| 96 | $9412 \cdot 34365$ | -0001 I | 94113.43651 | 9.99894 | 96 |
| 97 | 10353.57802 | -00010 | 103525.78016 | 9.99903 | 97 |
| 98 | 11388.93582 | $\cdot 00009$ | 113879.35818 | 9.99912 | 98 |
| 99 | 12527.82940 | -00008 | 125268.29400 | 9.99920 | 99 |
| 100 | 13780.61234 | -00007 | $137796 \cdot 12340$ | 9'99927 | 100 |

See also T'ables on pp. xx-xxxi. For $15 \%$ see p. xl

| AMOUNT OF ONE POUND AT END OF YEAR |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $1 \%$ | 17 \% | 1 1 \% | $1 \frac{3}{4} \%$ | Years |
| 10 | 1.10462 | I.13227 | I. 16054 | I.18944 | 10 |
| 20 | I 222019 | 1.28204 | I.34686 | 1.41478 | 20 |
| 30 | I. 34785 | 1.45161 | I-56308 | I 68280 | 30 |
| 40 | 1.48886 | I 64362 | I-81402 | 2.00160 | 40 |
| 50 | I 64463 | 1.86102 | $2 \cdot 10524$ | $2 \cdot 38079$ | 50 |
| 60 | 1.81670 | 2•10718 | 2.44322 | 2.83182 | 60 |
| 70 | 2.00676 | $2 \cdot 38590$ | 2.83546 | 3.36829 | 70 |
| 80 | 2.21672 | $2 \cdot 70149$ | $3 \cdot 29066$ | 4.00639 | 80 |
| 90 | 2.44863 | 3.05881 | 3.81895 | 4.76538 | 90 |
| 100 | $2 \cdot 70481$ | 3.46340 | 4.43205 | $5 \cdot 66816$ | 100 |
|  | $2 \%$ | $2 \frac{1}{4} \%$ | $2 \frac{1}{2} \%$ | $2 \frac{3}{4} \%$ |  |
| 10 | 1-21899 | I 24920 | $1 \cdot 28008$ | 1.31165 | 10 |
| 20 | 1.48595 | 1-56051 | 1.63862 | I.72043 | 20 |
| 30 | 1.81136 | I 949399 , | 2.09757 | $2 \cdot 25660$ | 30 |
| 40 | $2 \cdot 20803$ | 2.43519 | $2 \cdot 68506$ | 2.95987 | 40 |
| 50 | $2 \cdot 69159$ | 3.04205 | 3.43711 | $3 \cdot 88232$ | 50 |
| 60 | 3.28103 | 3.80013 | 4.39979 | 5.09225 | 60 |
| 70 | 3.99956 | 4.74714 | 5.63210 | $6 \cdot 67926$ | 70 |
| 80 | 4.87544 | 5.93015 | $7 \cdot 20957$ | $8 \cdot 76085$ | 80 |
| 90 | 5.94313 | $7 \cdot 40796$ | 9.22886 | 1149118 | 90 |
| 100 | $7 \cdot 24465$ | 9.25405 | II 81372 | $15 \cdot 07242$ | 100 |
|  | $3 \%$ | $3 \frac{1}{4} \%$ | $3 \frac{1}{2} \%$ | $3 \frac{3}{4} \%$ |  |
| 10 | I 34392 | $1 \cdot 37689$ | 1.41060 | 1.44504 | 10 |
| 20 | 1.80611 | I.89584 | $1-98979$ | 2.08815 | 20 |
| 30 | 2.42726 | $2 \cdot 61037$ | $2 \cdot 80679$ | 3.01747 | 30 |
| 40 | $3 \cdot 26204$ | $3 \cdot 59420$ | 3.95926 | $4 \cdot 36038$ | 40 |
| 50 | $4 \cdot 38391$ | 4.94884 | $5 \cdot 58493$ | 6.30094 | 50 |
| 60 | 5.89160 | $6 \cdot 81402$ | 7.87809 | $9 \cdot 10513$ | 60 |
| 70 | 7.91782 | 9.38219 | 11.11282 | 13.15732 | 70 |
| 80 | 10.64089 | 12.91828 | 15.67574 | 19.01290 | 80 |
| 90 | 14.30047 | 17.78711 | $22 \cdot 11217$ | 27.47448 | 90 |
| 100 | 19.21863 | 24.49097 | 31-19141 | $39 \cdot 70183$ | 100 |

For explanation see pp. 8-13

| amount of one pound at end of year |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $4 \%$ | $4 \frac{1}{4} \%$ | $4 \frac{1}{2} \%$ | $4 \frac{3}{4} \%$ | Years |
| 10 | 1.48024 | 1-51621 | $1 \cdot 55297$ | I•59052 | 10 |
| 20 | 2.19112 | $2 \cdot 29891$ | $2 \cdot 41171$ | $2 \cdot 52977$ | 20 |
| 30 | 3.24340 | 3.48564 | 3.74532 | 4.02366 | 30 |
| 40 50 | ${ }_{4}^{4 \cdot 80102}$ | 5.28497 8.01315 | ${ }_{5}^{5.81636}$ | $6 \cdot 39972$ 10.17892 | 40 50 |
|  |  |  |  |  |  |
| 60 | 10.51963 | 12.14965 | 14.02741 | $16 \cdot 18982$ | 60 |
| 70 80 | 15.57162 23.04980 | 18.42148 27.93091 | 21.78413 <br> 33.83009 | 25.75030 <br> 40.95647 | 70 80 |
| 90 | 34.11933 | 42.34925 | $52 \cdot 53710$ | ${ }_{65}$ +14226 | 90 |
| 100 | $50 \cdot 50495$ | 64.21055 | 81.58852 | 103.61036 | 100 |
|  | $5 \%$ | 51 $\%$ | $6 \%$ | 6 ${ }^{\frac{1}{2} \%}$ |  |
| 10 | 1. 62889 | $1 \cdot 70814$ | 1.79085 | ${ }_{1}^{1.87714}$ | 10 |
| 20 | $2 \cdot 65330$ | $2 \cdot 91776$ | 3.20714 | 3.52365 | 20 |
| 30 | 4.32194 | 4.98395 | 5.74349 | 6.61437 | 30 |
| 40 50 | 7.03999 1146740 | 8.51331 14.54196 | 10.28572 18.42015 | 12.41607 23.36688 | 40 50 |
| 60 | 18.67919 | $24 \cdot 83977$ | 32.98769 |  | 60 |
| 70 | $30 \cdot 42643$ | 42.42992 | 59.07593 | $82 \cdot 12446$ | 70 |
| 80 |  | 72.47643 |  | 154.15891 | 80 |
| 90 | 80.73037 | 123.80021 | 189.46451 | 289.37746 | 90 |
| 100 | 131-50126 | 211.46864 | $339 \cdot 30208$ | 543.20127 | 100 |
|  | $7 \%$ | $8 \%$ | $9 \%$ | $10 \%$ |  |
| 10 | 1.96715 3.8698 |  |  | 2.59374 6.79750 | 10 |
| 20 | $3 \cdot 86968$ | 4.66096 | 5.60441 | 6.72750 | 20 |
| 30 | $7 \cdot 61226$ | 10.06266 | 13.26768 | 17.44940 | 30 |
| 40 | 14.97446 | ${ }^{21} 72452$ | 3140942 | 45.25926 | 40 |
| 50 | 29.45703 | $46 \cdot 90161$ | 7435752 | 11739085 | 50 |
| 60 | 57.94644 | IOI 25706 | 176.03129 | $304 \cdot 48164$ | 60 |
| 70 | 113.98938 | 218.60641 | 416.73009 | 789.74696 | 70 |
| 80 | 224.23437 | 471.95483 | 986.55167 | 2048.40021 | 80 |
|  | $441 \cdot 10293$ | 1018.91509 | $2335 \cdot 52658$ | 5313.02261 | 90 |
| 100 | 867.71623 | 2199.76126 | 5529.04079 | $13780 \cdot 61234$ | 100 |

the present value of one podnd due at end of year

| Years | 1\% | 114 \% | $1 \frac{1}{2} \%$ | $1 \frac{3}{4} \%$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 10 | -90529 | -88318 | -86167 | -84073 | 10 |
| 20 | -81954 | 78001 | $\cdot 74247$ | $\cdot 70682$ | 20 |
| 30 | $\cdot 74192$ | -68889 | . 63976 | -59425 | 30 |
| 40 | $\cdot 67165$ | $\cdot 6084 \mathrm{I}$ | -55126 | -49960 | 40 |
| 50 | -60804 | -53734 | -47500 | -42003 | 50 |
| 60 | -55045 | -47457 | -40930 | -35313 | 60 |
| 70 | -4983I | -41913 | -35268 | $\cdot 29689$ | 70 |
| 80 | -45112 | $\cdot 37017$ | -30389 | -24960 | 80 |
| 90 | $\cdot 40839$ | $\cdot 32692$ | -26185 | -20985 | 90 |
| 100 | -3697 I | $\cdot 28873$ | $\cdot 22563$ | -17642 | 100 |
|  | $2 \%$ | $2 \frac{1}{4} \%$ | $2 \frac{1}{2} \%$ | $2 \frac{3}{4} \%$ |  |
| 10 | . 82035 | . 80051 | $\cdot 78120$ | $\cdot 76240$ | 10 |
| 20 | -67297 | -64082 | -61027 | -58125 | 20 |
| 30 | -55207 | $\cdot 51298$ | -47674 | -44314 | 30 |
| 40 | $\cdot 45289$ | -41065 | 37243 | $\cdot 33785$ | 40 |
| 50 | -37153 | -32873 | -29094 | -25758 | 50 |
| 60 | -30478 | -26315 | $\cdot 22728$ | -19638 | 60 |
| 70 | $\cdot 25003$ | -21065 | -17755 | -14972 | 70 |
| 80 | -20511 | -16863 | - 13870 | -11414 | 80 |
| 90 | -16826 | -13499 | -10836 | -08702 | 90 |
| 100 | -13803 | -10806 | -08465 | -06635 | 100 |
|  | $3 \%$ | $3 \frac{1}{4} \%$ | $3 \frac{1}{2} \%$ | $3 \frac{3}{4} \%$ |  |
| 10 | -74409 | 72627 | $\cdot 70892$ | -69202 | 10 |
| 20 | -55368 | -52747 | -50257 | $\cdot 47889$ | 20 |
| 30 | -41199 | $\cdot 38309$ | -35628 | -33140 | 30 |
| 40 | -30656 | $-27823$ | $\cdot 25257$ | $\cdot 22934$ | 40 |
| 50 | $\cdot 22811$ | -20207 | -17905 | -1587I | 50 |
| 60 | -16973 | -14676 | -12693 | -10983 | 60 |
| 70 | -12630 | -10658 | -08999 | -07600 | 70 |
| 80 | -09398 | -07741 | -06379 | -05260 | 80 |
| 90 | -06993 | $\cdot 05622$ | -04522 | -03640 | 90 |
| 100 | $\cdot 05203$ | $\cdot 04083$ | -03206 | -025 19 | 100 |

For explanation see pp. 8-13
the present value of one pound due at end of year

| Years | $4 \%$ | $4 \frac{1}{4} \%$ | $4 \frac{1}{2} \%$ | $4 \frac{3}{4} \%$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 10 | -67556 | -65954 | - 64393 | $\cdot 62872$ | 10 |
| 20 | $\cdot 45639$ | -43499 | -41464 | -39529 | 20 |
| 30 | $\cdot 30832$ | - 28689 | -26700 | -24853 | 30 |
| 40 | -20829 | -18922 | -17193 | -15626 | 40 |
| 50 | -14071 | -12479 | -11071 | -09824 | 50 |
| 60 | . 09506 | -0823I | -07129 | -06177 | 60 |
| 70 | -06422 | $\bigcirc 05428$ | -04590 | -03883 | 70 |
| 80 | -04338 | . 03580 | -02956 | -02442 | 80 |
| 90 | -02931 | -02361 | - 01903 | -or 535 | 90 |
| 100 | -01980 | - 01557 | - 01226 | '00965 | 100 |
|  | $5 \%$ | $5 \frac{1}{2} \%$ | $6 \%$ | 6 $\frac{1}{2}$ \% |  |
| 10 | -61391 | -58543 | $\cdot 55839$ | $\cdot 53273$ | 10 |
| 20 | -37689 | $\cdot 34273$ | -31180 | -28380 | 20 |
| 30 | -23138 | -20064 | -17411 | -15119 | 30 |
| 40 | -14205 | -11746 | -09722 | -08054 | 40 |
| 50 | -08720 | -06877 | -05429 | -04291 | 50 |
| 60 | -05354 | -04026 | . 03031 | -02286 | 60 |
| 70 | .03287 | -02357 | -01693 | -01218 | 70 |
| 80 | -02018 | - O 380 | -00945 | -00649 | 80 |
| 90 | -01239 | -00808 | -00528 | -00346 | 90 |
| 100 | ${ }^{\circ} 00760$ | -00473 | -00295 | $\cdot 00184$ | 100 |
|  | $7 \%$ | $8 \%$ | $9 \%$ | 10\% |  |
| 10 | -50835 | -46319 | -42241 | - 38554 | 10 |
| 20 | $\cdot 25842$ | -21455 | -17843 | -14864 | 20 |
| 30 | -13137 | -09938 | -07537 | -05731 | 30 |
| 40 | -06678 | - 04603 | -03184 | $\bullet 02209$ | 40 |
| 50 | -03395 | . 02132 | -OI345 | -00852 | 50 |
| 60 | -01726 | -00988 | -00568 | -00328 | 60 |
| 70 | -00877 | -00457 | -00240 | -00127 | 70 |
| 80 | -00446 | .00212 | - OOIOI | -00049 | 80 |
| 90 | -00227 | $\cdot 00098$ | -00043 | $\cdot 00019$ | 90 |
| 100 | -00115 | -00045 | '00018 | -00007 | 100 |

For $15 \%$ see p . xl

| THE AMOUNT OF ONE POUND PER ANNUM |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $1 \%$ | $1 \frac{1}{4} \%$ | $112 \%$ | $1 \frac{3}{4} \%$ | Years |
| 10 | 10.46221 | 10.58167 | 10'70272 | 10. 82540 | 10 |
| 20 | $22 \cdot 01900$ | 22.56298 | 23'12367 | 23.70161 | 20 |
| 30 | 3478889 | 36-12907 | 37.53868 | 39.01715 | 30 |
| 40 | $48 \cdot 88637$ | $5 \mathrm{I} \cdot 48956$ | $54 \cdot 26789$ | 57.23413 | 40 |
| 50 | 64.46318 | 68-88179 | $73 \cdot 68283$ | $78 \cdot 90222$ | 50 |
| 60 | 81 66967 | 88.57451 | 96.21465 | 104.67522 | 60 |
| 70 | 100.67634 | 110.87200 | 122.36375 | 135.33076 | 70 |
| 80 | 121.67152 | 136.11880 | 152.71085 | 171.79382 | 80 |
| 90 | 144.86327 | 164.70501 | 187.92990 | $215 \cdot 16462$ | 90 |
| 100 | 170.48138 | 197.07234 | $228 \cdot 80304$ | 266.75177 | 100 |
|  | $2 \%$ | $2 \frac{1}{4} \%$ | $2 \frac{1}{2} \%$ | $2 \frac{3}{4} \%$ |  |
| 10 | 10.94972 | 11.07571 | 11.20338 | 11 33276 | 10 |
| 20 | 24.29737 | 24-91152 | $25 \cdot 54466$ | 26.19740 | 20 |
| 30 | $40 \cdot 56808$ | $42 \cdot 19526$ | 43.90270 | 45'6946I | 30 |
| 40 | $60 \cdot 40198$ | 63-78618 | 67.40256 | $7 \mathrm{I} \cdot 26815$ | 40 |
| 50 | 84.57940 | 90.75762 | $97 \cdot 48435$ | 104.81170 | 50 |
| 60 | 114.05154 | 124.45043 | 135.99159 | 148.80914 | 60 |
| 70 | 149.97791 | 166.53962 | 185.28411 | 206.51843 | 70 |
| 80 | 193.77195 | 219*11757 | 248.3827I | 282.21287 | 80 |
| 90 | 247'I5665 | 284.798 I 3 | 329.15425 | $38 \mathrm{I} \cdot 49757$ | 90 |
| 100 | 312.23230 | $366 \cdot 84650$ | $432 \cdot 54865$ | 5II'72445 | 100 |
|  | $3 \%$ | $3 \frac{1}{4} \%$ | $3 \frac{1}{2} \%$ | $3 \frac{3}{4} \%$ |  |
| 10 | 11.46388 | 1 1.59675 | 11.73139 | 11.86784 | 10 |
| 20 | $26 \cdot 87037$ | $27 \cdot 56424$ | 28-27968 | 29.01739 | 20 |
| 30 | $47 \cdot 57542$ | 49.54980 | $5 \mathrm{I} \cdot 62267$ | 53.79924 | 30 |
| 40 | $75 \cdot 40126$ | 79.82158 | 84.55028 | 89.61010 | 40 |
| 50 | 1 12.79687 | 121.50263 | I 30.99791 | 14I $35^{8} 37$ | 50 |
| 60 | 163.05344 | 178.89303 | 196.51688 | 216.13690 | 60 |
| 70 | $230 \cdot 59406$ | 257.91354 | 288.93786 | $324 \cdot 19515$ | 70 |
| 80 | $321 \cdot 36302$ | $366 \cdot 71643$ | 419.30678 | $480 \cdot 34408$ | 80 |
| 90 | $443 \cdot 34890$ | 516.52651 | 603.20503 | 705.98614 | 90 |
| 100 | $607 \cdot 28773$ | 722'79916 | $862 \cdot 61166$ | $1032 \cdot 04883$ | 100 |

For explanation see pp. 8-13

THE AMOUNT OF ONE POUND PER ANNUM

| Years | $4 \%$ | $4 \frac{1}{4} \%$ | $4 \frac{1}{2} \%$ | $4 \frac{3}{4} \%$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 10 | 12.00611 | 12.14622 | 12.2882 I | 12.43209 | IO |
| 20 | 29.77808 | $30 \cdot 56250$ | 31.37142 | 32.20563 | 20 |
| 30 | $56 \cdot 08494$ | $58 \cdot 48553$ | $6 \mathrm{I} \cdot 00707$ | 63.65594 | 30 |
| 40 | $95 \cdot 02552$ | $100 \cdot 82283$ | 107.03032 | I $13 \cdot 67841$ | 40 |
| 50 | $152 \cdot 66708$ | 165.01525 | 178.50303 | 193.24036 | 50 |
| 60 | $237 \cdot 99069$ | 262.34474 | 289.49795 | $319 \cdot 78559$ | 60 |
| 70 | $364 \cdot 29046$ | 409.91711 | 461 -86968 | $52 \mathrm{I} \cdot 05885$ | 70 |
| 80 | $55 \mathrm{I} \cdot 24498$ | $633 \cdot 66848$ | 729.55770 | $841 \cdot 18887$ | 80 |
| 90 | 827.98333 | $972 \cdot 92354$ | $1145 \cdot 26900$ | $1350 \cdot 36345$ | 90 |
| 100 | $1237 \cdot 62370$ | $1487 \cdot 30697$ | $1790 \cdot 85595$ | 2160.21801 | 100 |
|  | $5 \%$ | $5 \frac{1}{2} \%$ | $6 \%$ | $6 \frac{1}{2} \%$ |  |
| 10 | 12.57789 | 12.87535 | $13 \cdot 18079$ | 13.49442 | 10 |
| 20 | 33.06595 | 34.86832 | $36 \cdot 78559$ | 38.82531 | 20 |
| 30 | $66 \cdot 43885$ | 72.43548 | 79'05819 | 86.37486 | 30 |
| 40 | $120 \cdot 79977$ | $136 \cdot 60561$ | $154 \% 6197$ | 175.63192 | 40 |
| 50 | 209.34800 | $246 \cdot 21748$ | 290.33590 | $343 \cdot 17967$ | 50 |
| 60 | 353.58372 | 433.45037 | 533-12818 | $657 \cdot 68984$ | 60 |
| 70 | $588 \cdot 5285 \mathrm{I}$ | 753.27120 | 967.93217 | $1248 \cdot 06867$ | 70 |
| 80 | 971.22882 | 129957139 | 1746.59989 | $2356 \cdot 29087$ | 80 |
| 90 | $1594 \cdot 60730$ | 2232.73 IOI | 314107519 | $4436 \cdot 57630$ | 90 |
| 100 | 2610.02516 | $3^{826 \cdot 70246}$ | $5638 \cdot 36806$ | 8341.55802 | 100 |
|  | $7 \%$ | $8 \%$ | $9 \%$ | $10 \%$ |  |
| 10 | 13.81645 | 14.48656 | 15'19293 | 15.93742 | 10 |
| 20 | 40.99549 | $45 \cdot 76196$ | 51-16012 | $57 \cdot 27500$ | 20 |
| 30 | 94.46079 | 113.28321 | $136 \cdot 30754$ | 164.49402 | 30 |
| 40 | 199.635 II | 259.05652 | $337 \cdot 88245$ | $442 \cdot 59256$ | 40 |
| 50 | 406.52893 | $573 \cdot 77016$ | 815 ¢08356 | 1163.90853 | 50 |
| 60 | 813.52038 | 1253.21330 | 1944.79213 | 3034-81640 | 60 |
| 70 | 1614.13417 | $2720 \cdot 08007$ | 4619:22318 | 788746957 | 70 |
| 80 | 3189.06268 | $5886 \cdot 93543$ | $10950 \cdot 57409$ | $20474 \cdot 00215$ | 80 |
| 90 | 6287.18543 | 12723.93862 | $25939 \cdot 18425$ | 53120.22612 | 90 |
| 100 | 12381 66179 | 27484*51570 | $61422 \cdot 67547$ | 137796.12340 | 100 |


| the present value of one pound per annum due at END OF YEAR |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | 1\% | $1 \frac{1}{4} \%$ | $1 \frac{1}{2} \%$ | $1 \frac{3}{4} \%$ | Years |
| 10 | 9.47130 | $9 \cdot 34553$ | 9.22219 | 9•10122 | 10 |
| 20 | 18.04555 | 17.59932 | 17.16864 | 16.75288 | 20 |
| 30 | 25.80771 | 24.88891 | 24.01584 | $23 \cdot 18585$ | 30 |
| 40 | $32 \cdot 83469$ | 31.32693 | 29.91585 | 28.59423 | 40 |
| 50 | 39•19612 | 37-01288 | 34.99969 | 33.14121 | 50 |
| 60 | 44.95504 | 42.03459 | 39.38027 | 36.96399 | 60 |
| 70 | $50 \cdot 1685$ I | $46 \cdot 46968$ | $43 \cdot 15487$ | $40 \cdot 17790$ | 70 |
| 80 | 54.88821 | 50.38666 | $46 \cdot 40732$ | $42 \cdot 87994$ | 80 |
| 90 | $59 \cdot 16088$ | 53.84606 | $49 \cdot 20985$ | $45 \cdot 15161$ | 90 |
| 100 | 63.02888 | 56.901 34 | 51.62470 | $47 \cdot 06147$ | 100 |
|  | $2 \%$ | 21 $\frac{1}{4}$ | 21 $\frac{1}{2}$ | $2 \frac{3}{4} \%$ |  |
| 10 | 8.98258 | 8.86622 | 8.75206 | $8 \cdot 64008$ | 10 |
| 20 | $16 \cdot 35143$ | 15.96371 | 15.58916 | 15.22725 | 20 |
| 30 | 22.39646 | $2 \mathrm{I} \cdot 64533$ | 20.93029 | 20.24930 | 30 |
| 40 | $27 \cdot 35548$ | 26.19352 | $25 \cdot 10277$ | 24.07810 | 40 |
| 50 | 31.4236I | 29.83440 | 28.36231 | 26.99717 | 50 |
| 60 | 34.76089 | $32 \cdot 74895$ | 30.90866 | 29.22266 | 60 |
| 70 | 37.49862 | 35.08208 | $32 \cdot 89786$ | $30 \cdot 91937$ | 70 |
| 80 | 39.74451 | 36.94978 | 34.45182 | $32 \cdot 21294$ | 80 |
| 90 | $41 \cdot 58693$ | 38.44489 | 35.66577 | $33 \cdot 19915$ | 90 |
| 100 | $43 \cdot 09835$ | 39.64174 | 36.61410 | 33.95104 | 100 |
|  | $3 \%$ | $3 \frac{1}{4} \%$ | $3 \frac{1}{2} \%$ | $3 \frac{3}{4} \%$ |  |
| 10 | $8 \cdot 53020$ | 8.42240 | 8.31661 | 8.21279 | 10 |
| 20 | 14.87748 | 14.53935 | 14.21240 | 13.89620 | 20 |
| 30 | 19.60044 | 18.98192 | 18.39205 | 17.82925 | 30 |
| 40 | 23.11477 | $22 \cdot 20843$ | 21.35507 | 20.55099 | 40 |
| 50 | 25.72976 | 24.55176 | 23*45562 | 22.43449 | 50 |
| 60 | 27.67556 | $26 \cdot 25366$ | 24.94474 | 23.73792 | 60 |
| 70 | 29.12342 | 27.48970 | $26 \cdot 00040$ | 24.63991 | 70 |
| 83 | 30.20076 | 28.38740 | $26 \cdot 74878$ | 25.26411 | 80 |
| 90 | $3 \mathrm{I} \cdot 0024 \mathrm{I}$ | 29.03937 | 27.27932 | 25.69607 | 90 |
| 100 | $3 \mathrm{I} \cdot 5989 \mathrm{I}$ | 29.51288 | 27.65543 | 25.99499 | 100 |

For explanation see pp. 8-13

| the present value of one pound per annum due at END OF YEAR |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $4 \%$ | $4 \frac{1}{4} \%$ | $4 \frac{1}{2} \%$ | $4 \frac{3}{4} \%$ | Years |
| 10 | 8.11090 | $8 \cdot 01089$ | 791272 | 7.81635 | 10 |
| 20 | 13.59033 | 13.29437 | 13.00794 | 12.73067 | 20 |
| 30 | 17.29203 | 16.77902 | 16.28889 | 15.82042 | 30 |
| 40 | 1979277 | 19.07727 | 18.40158 | 17.76302 | 40 |
| 50 | 21.48219 | 20•59306 | 19.76201 | $18 \cdot 98437$ | 50 |
| 60 | 22.62349 | 21.59278 | 20.63802 | 19.75227 | 60 |
| 70 | 23.39452 | 22.25213 | 2 1.20211 | 20.23506 | 70 |
| 80 | 23.91539 | 22.68700 | $21 \cdot 56534$ | $20 \cdot 5386 \mathrm{I}$ | 80 |
| 90 | $24 \cdot 26728$ | 22.9738 I | 21.79924 | $20 \cdot 72945$ | 90 |
| 100 | 24.50500 | 23•16297 | 21.94985 | 20.84944 | 100 |
|  | $5 \%$ | 5 $\frac{1}{2}$ | $6 \%$ | 6 $\frac{1}{2}$ \% |  |
| 10 | 772173 | 7.53763 | 7.36009 | 7.18883 | 10 |
| 20 | 12.46221 | 11.95038 | ${ }_{11} 146992$ | 11.01851 | 20 |
| 30 | 15.37245 | 14.53375 | 13.76483 | 13.05868 | 30 |
| 40 | $17 \cdot 15909$ | 16.04612 | 15.04630 | $14 \cdot 14553$ | 40 |
| 50 | 18-25592 | 16.93152 | 15.76186 | $14^{\prime} 72452$ | 50 |
| 60 | 18.92929 | 17.44985 | 16.16143 | 15.03297 | 60 |
| 70 | 19.34268 | 17.75330 | $16 \cdot 38454$ | $15 \cdot 19728$ | 70 |
| 80 | 19.59646 | 17.93095 | $16 \cdot 50913$ | 15.28482 | 80 |
| 90 | 19.75226 | $18 \cdot 03495$ | $16 \cdot 57870$ | 15.33145 | 90 |
| 100 | 19.84791 | 18.09584 | 16.61755 | 15.35629 | 100 |
|  | $7 \%$ | $8 \%$ | 9\% | $10 \%$ |  |
| 10 | 7.02358 | $6 \cdot 71008$ | 6.41766 | $6 \cdot 14457$ | 10 |
| 20 | 10.59401 | 9.81815 | 9-12855 | $8 \cdot 51356$ | 20 |
| 30 | 12.40904 | 11.25778 | 10.27365 | $9 \cdot 42691$ | 30 |
| 40 | 13.33171 | 11.92461 | $10 \cdot 75736$ | $9 \cdot 77905$ | 40 |
| 50 | 13.80075 | $12 \cdot 23348$ | 10.96168 | 9.91481 | 50 |
| 60 | 14.03918 | 12.37655 | 11.04799 | 9.96716 | 60 |
| 70 | $14 \cdot 16039$ | 12.44282 | 11.08445 | 9.98734 | 70 |
| 80 | 14.22201 | 12.47351 | 11.09985 | $9 \cdot 99512$ | 80 |
| 90 | 14.25333 | 12.48773 | $11 \cdot 10635$ | 9.99812 | 90 |
| 100 | 14.26925 | 12.49432 | II•10910 | $9 \cdot 99927$ | 100 |

See also Tables pp. xx-xxxi. For $15 \%$ see p. xl

## THE PRESENT VALOE OF A PERPETUITY OF $£ 1$ PER ANNUM

| At per Cent． | £ | At per Cent． | £ |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| $\frac{1}{6}$ or 026 | $800 \cdot 00000$ | $5 \frac{1}{6}$ or 526 | 19.51220 |
| ${ }^{\frac{1}{4}} 3000050$ | $400 \cdot 00000$ | $\begin{array}{lllll}5 \frac{4}{4} & \prime & 5 & 5 & 0\end{array}$ | 19.04762 |
|  | $266 \cdot 66667$ |  | $18 \cdot 60465$ |
| $\frac{1}{2}$＂， 0100 | $200 \cdot 00000$ | $5 \frac{1}{2}, 5100$ | $18 \cdot 18182$ |
| 乭，, 0126 | 160.00000 | 5咅， 5126 | 17.77778 |
| $\frac{3}{4},{ }^{3} 0150$ | 133.33333 | $5 \frac{3}{4},{ }^{5} 150$ | 17.39130 |
| $\frac{7}{8},{ }^{\prime}, 0176$ | I 14.2857 I | 57，${ }^{\frac{7}{8}}$ ， 5176 | 17.02128 |
| 1 1， 100 | 100．00000 | 6 ， 600 | 16.66667 |
| 11， 122 | 88.88889 | $6 \frac{1}{2}, 626$ | $16 \cdot 32653$ |
| 1年，I 5 5 0 | $80 \cdot 00000$ | $6 \frac{1}{4},{ }^{6} 50$ | 16.00000 |
| I晨＂，I 76 | $72 \cdot 72727$ | 6 㐌， 676 | $15 \cdot 68627$ |
|  | $66 \cdot 66667$ | $6 \frac{1}{2},{ }^{1} 100$ | $15 \cdot 38462$ |
| 158， 1126 | 61.53846 | 6兵＂ 6126 | $15 \% 9434$ |
| 1章， 1 I 150 | 57－14286 | $6 \frac{3}{\prime \prime}, 6^{15} 5$ | 14.8148 I |
| 1年， 1 I 176 | 53.33333 | $6 \frac{7}{8} \quad 1,66176$ | 14.54545 |
| 20200 | 50•00000 | 7 ＂， 700 | 14．28571 |
| $2 \frac{1}{2}, 226$ | $47^{\circ} \mathrm{O} 8882$ | $7 \frac{1}{8}, 726$ | 14.03509 |
|  | 44.44444 | $7 \frac{1}{1} \times 750$ | 13.79310 |
| $2{ }^{23}: 1{ }^{3} 766$ | $42 \cdot 10526$ | $7{ }^{\frac{3}{8}, 1} 7786$ | 13.55932 |
| 21， 2 10 0 | $40 \cdot 0000$ | $7 \frac{1}{2}, 710$ | 13.33333 |
| 25， 2126 | 38.09524 | 7䂞， 712 | 13.11475 |
|  | 36.36364 | $7 \frac{3}{4},{ }^{3} 15150$ | $12 \cdot 90323$ |
| 2긍， 2 I7 6 | 34.78261 | 7\％${ }^{\frac{7}{8}}, 77176$ | 12.6984 I |
| $3 \quad 300$ | 33＇33333 | 8 ＂， 800 | 12.50000 |
| 38．${ }^{1}, 326$ | $32 \cdot 00000$ | 81 ${ }_{8}$ ， 88 | 12．30769 |
| $\begin{array}{llllll}3 \frac{1}{2} \\ 3 & 3 & 5 & 5 & 0\end{array}$ | $30 \cdot 76923$ | $8 \frac{1}{4}, 18850$ | 12．12121 |
| 3 3 3 | $29 \cdot 62963$ | 83 ${ }^{3}$ | II 94030 |
| 3立， 3 10 0 | $28 \cdot 57143$ | $8 \frac{1}{2}, 8$ 10 0 | II 76471 |
| 35 ，， 3 I2 6 | 27.58621 | $88^{8}, 18126$ | 11－59420 |
|  | $26 \cdot 66667$ | 84,18150 | 11.42857 |
| 387 ${ }_{8}^{\text {7，}}$ ， 3176 | $25 \cdot 80645$ | 8골，， 8 I7 6 | 11.26761 |
| 4．， 400 | $25 \cdot 00000$ | $9>900$ | II－IIIII |
| 41，， $42 \begin{aligned} & \text { 2 }\end{aligned}$ | 24.24242 | $9{ }^{1}$ 艮， 926 | 10.95890 |
| 4表，， 450 | 23.52941 | 94，$\quad 9.950$ | $10 \cdot 8108 \mathrm{I}$ |
| $4 \frac{3}{8},{ }^{3} 766$ | 22.85714 | $9{ }^{3}$ | 10.66667 |
| 42， 4 10 0 | $22 \cdot 22222$ | 912， 9 10 0 | 10.52632 |
| 4䂞，， 4126 | 21．62162 | 96 \％ 9126 | 10.38961 |
| 44，${ }^{\frac{3}{4}} \mathbf{4} 450$ | $2 \mathrm{I} \cdot 05263$ | 913 ${ }^{\frac{3}{3}}$ ， 9150 | $10 \cdot 25641$ |
| 47 ${ }^{\frac{7}{8}}, 14176$ | $20 \cdot 51282$ | 978 ， 9 976 | 10．12658 |
| $5 \quad 3 \quad 500$ | $20 \cdot 00000$ | 10＂10 0 0 | 10．00000 |

For explanation see p． 13

## THE PRESENT VALUE OF THE REVERSION OF A PERPETUITY OF £1

| Years <br> Deferred | $1 \%$ | $1 \frac{1}{4} \%$ | $1 \frac{1}{2} \%$ | $1 \frac{3}{4} \%$ | Years Deferred |
| :---: | :---: | :---: | :---: | :---: | :---: |
| I | $99^{\circ} 00990$ | $79^{\circ} \mathrm{OL} 235$ | 65.68145 | $56 \cdot 16006$ | $I$ |
| 2 | $98 \cdot 02960$ | $78 \cdot 03688$ | 64.71079 | $55 \cdot 19416$ | 2 |
| 3 | 97.05901 | $77 \cdot 07347$ | 63.75447 | $54 \cdot 24488$ | 3 |
| 4 | $96 \cdot 09893$ | $76 \cdot 12194$ | 62.81229 | 53.31192 | 4 |
| 5 | $95 \cdot 14657$ | $75 \cdot 18217$ | $6 \mathrm{I} \cdot 88402$ | $52 \cdot 39500$ | 5 |
| 6 | $94^{*} 20452$ | $74 \cdot 25399$ | 60.96948 | 51.49386 | 6 |
| 7 | 93.27181 | 73.33727 | $60 \cdot 06846$ | $50 \cdot 60822$ | 7 |
| 8 | 92.34832 | 72.43188 | $59 \cdot 18074$ | 49.73781 | 8 |
| 9 | 91.43398 | 71.53766 | $58 \cdot 30615$ | 48.88237 | 9 |
| 10 | $90 \cdot 52870$ | $70 \cdot 65447$ | $57 \cdot 44448$ | 48.04164 | 10 |
| 11 | 89.63237 | 69.78220 | 56•59555 | 47 ${ }^{21} 537$ | 11 |
| 12 | 88.74492 | 68.92069 | 55.75916 | $46 \cdot 40331$ | 12 |
| 13 | 87.86626 | $68 \cdot 06982$ | $54 * 93514$ | $45 \cdot 60522$ | 13 |
| 14 | 86.99630 | $67 \cdot 22945$ | $54 \cdot 12329$ | $44 \cdot 82085$ | 14 |
| 15 | 86-13495 | $66 \cdot 39945$ | 53.32344 | $44.04998$ | 15 |
| 16 | 85.28213 | $65 \cdot 57971$ | 52.53541 | $43 \cdot 29236$ | 16 |
| 17 | 84.43775 | $64 \cdot 77008$ | $5 \mathrm{I} \cdot 75902$ | 42.54778 | 17 |
| 18 | $83 \cdot 60173$ | 63.97045 | 50.99411 | 41.81600 | 18 |
| 19 | 82.77399 | $63 \cdot 18069$ | 50.24050 | 41.09680 | 19 |
| 20 | 8I 95445 | $62 \cdot 40068$ | 49.49803 | $40 \cdot 38998$ | 20 |
| 21 | 8I.14302 | 61.63031 | $48 \cdot 76653$ | $39 \cdot 69531$ | 21 |
| 22 | 80.33962 | $60 \cdot 86944$ | $48 \cdot 04584$ | $39^{\circ} \mathrm{O} 259$ | 22 |
| 23 | $79 \cdot 54418$ | $60 \cdot 11796$ | 47.33581 | 38.34161 | 23 |
| 24 | 78.75661 | 59.37577 | $46 \cdot 63626$ | 37.68217 | 24 |
| 25 | 77.97684 | $58 \cdot 64273$ | 45.94706 | $37 \cdot 03408$ | 25 |
| 26 | $77 \cdot 20480$ | 57.91875 | $45 \cdot 26804$ | $36 \cdot 39713$ | 26 |
| 27 | $76 \cdot 44039$ | 57.20370 | $44 \cdot 59905$ | 35\%77113 | 27 |
| 28 | $75 \cdot 68356$ | 56.49748 | $43 \cdot 93995$ | 35-15591 | 28 |
| 29 | 74.93421 | 55.79998 | $43 \cdot 29059$ | 34.55126 | 29 |
| 30 | $74 \cdot 19229$ | 55.11109 | $42 \cdot 65083$ | 33.957 O1 | 30 |
| 3 I | 73.45771 | 54.43071 | $42 \cdot 02052$ | 33.37298 | 3 I |
| 32 | $72 \cdot 73041$ | 53.75873 | 41.39953 | $32 \cdot 79900$ | 32 |
| 33 | 72.01031 | 53.09504 | $40 \cdot 78771$ | $32 \cdot 23489$ | 33 |
| 34 | 71-29733 | 52.43954 | $40 \cdot 18494$ | 31.68048 | 34 |
| 35 | $70 \cdot 59142$ | 51.79214 | $39 \cdot 59107$ | 3I•1356I | 35 |
| 36 | 69.89250 | 51.15273 | - 39'00599 | $30 \cdot 60011$ | 36 |
| 37 | $69 \cdot 20049$ | 50.52122 | $38 \cdot 42954$ | 30.07382 | 37 |
| 38 | $68 \cdot 51534$ | 49.89750 | $37 \cdot 86162$ | 29.55658 | 38 |
| 39 | 67.83697 | 49.28148 | 37.30209 | 29.04823 | 39 |
| 40 | $67 \cdot 16531$ | 48.67307 | $36 \cdot 75082$ | $28 \cdot 54863$ | 40 |
| 4 I | $66 \cdot 50031$ | $48 \cdot 07216$ | $36 \cdot 20771$ | $28 \cdot 05762$ | 41 |
| 42 | 65.84189 | 47.47868 | $35 \cdot 67262$ | 27.57506 | 42 |
| 43 | $65 \cdot 18999$ | $46 \cdot 89252$ | $35 \cdot 14544$ | $27 \cdot 10079$ | 43 |
| 44 | 64.54455 | $46 \cdot 31360$ | $34 \cdot 62605$ | $26 \cdot 63469$ | 44 |
| 45 | 63.90549 | $45^{\prime} 74183$ | $34 \cdot 11433$ | $26 \cdot 17660$ | 45 |
| 46 | $63 \cdot 27276$ | 4517712 | 33.61018 | 25.72639 | 46 |
| 47 | 62.64630 | 44.61938 | $33 \cdot 11348$ | 25.28392 | 47 |
| 48 | $62 \cdot 02604$ | $44 \cdot 06852$ | $32 \cdot 62412$ | 24.84906 | 48 |
| 49 | 61.41192 | $43 \cdot 52446$ | $32 \cdot 14199$ | 24.42168 | 49 |
| 50 | $60 \cdot 80388$ | 42.98712 | $31 \times 6698$ | 24.00165 | 50 |

For explanation see pp. 13, 14. See also Tables on pp. xxxii-xxxix

| $\begin{gathered} \text { Years } \\ \text { Deferred } \end{gathered}$ | $2 \%$ | 219 \% | $2 \frac{1}{2} \%$ | $2 \frac{3}{4} \%$ | $\begin{gathered} \text { Years } \\ \text { Deferred } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| I | 49*01961 | 43.46644 | $39^{.02439}$ | 35.39040 | 1 |
| 2 | $48 \cdot 05844$ | $42 \cdot 50997$ | 38.07258 | 34.44322 | 2 |
| 3 | $47 \cdot 11612$ | 41-57454 | $37 \cdot 14398$ | 33.52138 | 3 |
| 4 | $46 \cdot \mathrm{Ig227}$ | 40.65970 | $36 \cdot 23803$ | $32 \cdot 624215$ | 4 |
| 5 | $45 \cdot 28654$ | 39.76499 | 35.35417 | 3175106 | 5 |
| 6 | $44 \cdot 39857$ | 38.88996 | 34.49188 | 30.90127 | 6 |
| 7 | $43 \cdot 52801$ | $38 \cdot 03419$ | 33.65061 | 30.07423 | 7 |
| 8 | $42 \cdot 67452$ | $37 \cdot 19726$ | $32 \cdot 82986$ | 29.26933 | 8 |
| 9 | $41 \cdot 83776$ | $36 \cdot 37873$ | $32 \cdot 02913$ | 28.48596 | 9 |
| ro | $4{ }^{1} 01742$ | $35 \cdot 57822$ | $31 \cdot 24794$ | 27.72356 | 10 |
| 11 | 40.21315 | 34.79533 | 30.48579 | 26.98157 | 11 |
| 12 | 39.42466 | 34.02966 | 29.74224 | $26 \cdot 25944$ | 12 |
| 13 | $38 \cdot 65163$ | $33 \cdot 28084$ | 29.101682 | 25.55663 | 13 |
| 14 | $37 \cdot 89375$ | $32 \cdot 54850$ | 28.30909 | 24.87263 | 14 |
| 15 | $37 \cdot 15074$ | 3I-83227 | 27.61862 | $24 \cdot 20694$ | 15 |
| 16 | 36.42229 | 3r-13181 | 26.94500 | 23.55907 | 16 |
| 17 | $35 \cdot 708 \mathrm{I} 3$ | $30 \cdot 44676$ | $26 \cdot 28780$ | 22.92853 | 17 |
| 18 | $35 \cdot 00797$ | 29.77678 | 25.64664 | 22.31487 | r8 |
| 19 | 34.32154 | 29.12154 | 25.02111 | 21.71764 | 19 |
| 20 | 33.64857 | $28 \cdot 48073$ | 24.41084 | $21 \cdot 13639$ | 20 |
| 21 | 32.98879 | 27.85401 | 23.81545 | 20.57069 | 21 |
| 22 | $32 \cdot 34195$ | 27.24109 | 23.23459 | 20.02014 | 22 |
| 23 | $3 \mathrm{I} \cdot 70780$ | $26 \cdot 64165$ | $22 \cdot 66789$ | 19.48432 | 23 |
| 24 | 31.08607 | 26.05540 | 22.11501 | 18.96284 | 24 |
| 25 | $30 \cdot 47654$ | 25.48206 | 21.57562 | 18.45532 | 25 |
| 26 | 29.87896 | 24.92133 | 21.04939 | 17.96138 | 26 |
| 27 | 29.29310 | 24.37294 | $20 \cdot 53599$ | 17.48067 |  |
| 28 | 28.71873 | 23.83661 | 20.03511 | 17.01281 | 28 |
| 29 | 28.15562 | 23.31209 | 19.54645 | 16.55748 | 29 |
| 30 | $27 \cdot 60354$ | 22.79911 | 19.06971 | 16.11434 | 30 |
| 31 | 27.06230 | 22.29742 | 18.60460 | 15.68305 | 3 I |
| 32 | $26 \cdot 53167$ | 21.80677 | $18 \cdot 15082$ | 15.2633 I | 32 |
| 33 | 26.11144 | 21.32691 | 17.70812 | 14.8548I | 33 |
| 34 | 25.5014 I | $20 \cdot 85761$ | 17.27621 | 14.45723 | 34 |
| 35 | $25^{\circ} \mathrm{OOI} 38$ | 20.39864 | 16.85484 | 14.07030 | 35 |
| 36 | 24.51116 | 19.94977 | 16.44375 | 13.69372 | 36 |
|  | 24.03055 | 19.51078 | 16.04268 | 13.32722 | 37 |
| 38 | 23.55936 | 19.08145 | 15.65140 | 12.97053 | 38 |
| 39 | $23^{\circ} \mathrm{O} 974 \mathrm{I}$ | 18.66156 | 15.26966 | $\begin{array}{r}12.62339 \\ \hline 12.28554\end{array}$ | 39 |
| 40 | 22.64452 | 18.25092 | 14.89723 | 12.28554 | 40 |
| 4 I | $22 \cdot 2005 \mathrm{I}$ | 17.84931 | 14.53388 |  | 4 4 |
| 42 | 21.76521 | 17.45654 | 14•17939 | 11.63672 | 42 |
| 43 | 21.33844 | 17.07241 | 13.83355 | II. 32527 | 43 |
| 44 | 20.92004 | 16.69673 | 13.49615 | 11.02217 | 44 |
| 45 | $20 \cdot 50984$ | 16.32932 | $13 \cdot 16698$ | $10 \cdot 72717$ | 45 |
| 46 | $20 \cdot 10769$ | 15.97000 | 12.84583 | 10.44007 | 46 |
| 47 | 19.71342 <br>  | 15.61858 | 12.53252 | 10.16065 |  |
| 48 | 19.32688 | 15.27489 | 12.22685 | 9.8887 T | 48 |
| 49 | 18.94792 | 14.93877 | 1 II 92863 | 9.62405 | 49 |
| 50 | $18 \cdot 57639$ | 14.61004 | II ${ }^{6} 3769$ | $9 \cdot 36647$ | 50 |


| $\begin{gathered} \text { Years } \\ \text { Deferred } \end{gathered}$ | $3 \%$ | $3 \frac{1}{4} \%$ | $3 \frac{1}{2} \%$ | $3 \frac{3}{4} \%$ | $\left\|\begin{array}{c} \text { Years } \\ \text { Deferred } \end{array}\right\|$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 32.36246 | 29.80071 | 27.60525 | 25.70281 | 1 |
| 2 | 31.41986 | 28.86267 | 26.67174 | 24.77380 | 2 |
| 3 | $30 \cdot 50472$ | 27.95416 | 25.76979 | 23.87836 | 3 |
| 4 | 29.61623 | 27.07425 | 24.89835 | 23.01529 | 4 |
| 5 | 28.75362 | 26.22203 | 24.05638 | $22 \cdot 18341$ | 5 |
| 6 | 27.91614 | 25.39664 | 23.24288 | 21.38160 | 6 |
| 7 | $27 \cdot 10305$ | 24.59723 | 22.45689 | 20.60877 | 7 |
| 8 | 26.31364 | 23.82298 | 21.69747 | 19.86387 | 8 |
| 9 | 25.54722 | 23.07311 | 20.96374 | 19.14590 | 9 |
| 10 | 24.80313 | $22 \cdot 34683$ | $20 \cdot 25482$ | 18.45388 | 10 |
| II | 24.08071 | 21.64342 | 19.56988 | 17.78687 | 11 |
| 12 | 23.37933 | 20.96215 | 18.90810 | $17 \cdot 14398$ | 12 |
| 13 | $22 \cdot 69737$ | 20.30233 | $18 \cdot 26869$ | 16.52431 | 13 |
| 14 | 22.03726 | 19.66327 | 17.65091 | 15.92705 | 14 |
| 15 | 21-39539 | 19.04433 | 17.05402 | 15.35137 | 15 |
| 16 | $20 \cdot 77223$ | 18.44487 | 16.47731 | 14.79650 | 16 |
| 17 | 20•16721 | 17.86428 | 15.92011 | 14.26169 | 17 |
| 18 | 19.57982 | 17.30197 | 15.38175 | 13.74621 | 18 |
| 19 | 19.00953 | 16.75735 | 14.86159 | 13.24936 | 19 |
| 20 | 18.45585 | 16.22988 | 14.35903 | 12.77047 | 20 |
| 21 | 17.9183 I | 1571902 | ${ }_{13} 3.87346$ | 12.30888 | 21 |
| 22 | 17.39641 | 15.22423 | 13.40430 | 1 I .86398 | 22 |
| 23 | 16.88972 | 14.74501 | 12.95102 | 11.43516 | 23 |
| 24 | 16.39779 | 14.28089 | 12.51306 | 11.02185 | 24 |
| 25 | 15.92018 | 13.83137 | 12.08991 | 10.62347 | 25 |
| 26 | 15.45649 | 13.39600 | 11.68108 | 10.23948 | 26 |
| 27 | 15.00630 | 12.97433 | $1 \mathrm{I} \cdot 28606$ | 9.86938 | 27 |
| 28 | 14.56922 | โ2.56594 | 10.90441 | 9.51266 | 28 |
| 29 | 14.14487 | $12 \cdot 17040$ | $10 \cdot 53566$ | $9 \cdot 16883$ | 29 |
| 30 | 13.73289 | 11.78731 | 10-17938 | 8.83742 | 30 |
| 3 I | 13.33290 | 11.41628 | 9.83515 | $8 \cdot 51800$ | 3 I |
| 32 | 12.94456 | 11.05693 | 9.50256 | 8-21012 | 32 |
| 33 | 12.56754 | 10•70889 | $9_{8}{ }^{18} 8122$ | 7.91337 | 33 |
| 34 | 12.20149 | 10.37181 | 8.87075 | $7 \cdot 62734$ | 34 |
| 35 | II 846 tI | 10.04534 | $8 \cdot 57077$ | 7335166 | 35 |
| 36 | 11.50108 | $9 \cdot 72914$ | $8 \cdot 28094$ | 7.08593 | 36 |
| 37 | $1 \mathrm{I} \cdot 16609$ | $9 \cdot 42289$ | $8 \cdot 00090$ | $6 \cdot 82982$ | 37 |
| 38 | 10.84087 | 9.12629 | 773034 | $6 \cdot 58296$ | 38 |
| 39 | $10 \cdot 52511$ | 8.83902 | 7:46893 | 6.34502 | 39 |
| 40 | 10.21856 | $8 \cdot 56080$ | 721636 | 6.11568 | 40 |
| 41 | 9.92093 | 8.29133 | 6.97233 | 5.89463 | 41 |
| 42 | 9.63197 | 8.03034 | $6 \cdot 73655$ | 5.68157 | 42 |
| 43 | 9.35143 | 7777757 | $6 \cdot 50874$ | 5.47621 | 43 |
| 44 | 9.07906 | 7.53276 7.29565 | $6 \cdot 28864$ | 5.27828 | 44 |
| 45 | $8 \cdot 81462$ | $7 \cdot 29565$ | $6 \cdot 07598$ | 5.08750 | 45 |
| 46 | $8 \cdot 55788$ | 7.06600 | $5 \cdot 8705 \mathrm{I}$ | 4.90361 | 46 |
| 47 | $8 \cdot 30862$ | 6.84359 | 5.67199 | 4.72637 | 47 |
| 48 | 8 -06662 | $6 \cdot 62817$ | $5 \cdot 48018$ | 4.55554 | 48 |
| 49 | 7.83167 | 6.41954 | $5 \cdot 29486$ | 4.39088 | 49 |
| 50 | 7.60357 | $6 \cdot 21747$ | 5.11581 | 4.23218 | 50 |

See also Tables on pp. xxxii-xxxix

## THE PRESENT VALUE OF THE REVERSION OF A PERPETUITY OF £1

| $\left\|\begin{array}{c} \text { Years } \\ \text { Deferred } \end{array}\right\|$ | $4 \%$ | 4 $\frac{1}{2} \%$ | $5 \%$ | $6 \%$ | Years Deferred |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 24.03846 | $21 \cdot 26528$ | 19.04762 | 15.72327 | 1 |
| 2 | $23 \cdot 11391$ | 20.34955 | 18.14059 | 14.83328 | 2 |
| 3 | $22 \cdot 22491$ | 19.47326 | 17.27675 | 13.99366 | 3 |
| 4 | 21.37010 | 18.63469 | 16.45405 | 13.20156 | 4 |
| 5 | $20 \cdot 54818$ | $17 \cdot 83224$ | 15.67052 | 12.4543 I | 5 |
| 6 | 19.75786 | 17.06435 | 14.92431 | 11.74935 | 6 |
| 7 | 18.99795 | 16.32952 | 14.21363 | 11.08429 | 7 |
| 8 | $18 \cdot 26725$ | 15.62633 | 13.53679 | 10.45688 | 8 |
| 9 | 17.56467 | 14.95343 | 12.89218 | 9.86498 | 9 |
| 10 | 16.88910 | 14.30950 | 12.27827 | 9.30658 | 10 |
| II | 16.23952 | 13.69330 | 11.69359 | 8.77980 | II |
| 12 | 15.61493 | 13.10364 | 11.13675 | 8.28283 | 12 |
| 13 | $15 \cdot 1435$ | 12.53937 | $10 \cdot 60643$ | 7.81399 | 13 |
| 14 | 14.43688 | 11.99939 | 10.10136 | $7 \cdot 37169$ | 14 |
| 15 | $13 \cdot 88161$ | 11.48267 | 9.62034 | 6.95442 | 15 |
| 16 | 13.34770 | 10.98821 | $9 \cdot 16223$ | 6.56077 | 16 |
| 17 | $12 \cdot 83433$ | 10.51503 | $8 \cdot 72593$ | $6 \cdot 18941$ | 17 |
| 18 | 12.34070 | $10 \cdot 06223$ | $8 \cdot 31041$ | $5 \cdot 83907$ | 18 |
| 19 | 11.86606 | $9 \cdot 62893$ | 791468 | $5 \cdot 50855$ | 19 |
| 20 | 11.40967 | 9.21428 | 7.53779 | 5.19675 | 20 |
| 2 I | 10.97084 | 8.81750 | $7 \cdot 17885$ | 4.90259 | 21 |
| 22 | 10.54888 | $8 \cdot 43780$ | 6.83700 | 4.62509 | 22 |
| 23 | $10 \cdot 14316$ | 8.07445 | 6.51143 | 4.36329 | 23 |
| 24 | $9 \cdot 75304$ | 7772674 | 6.20136 | $4 \cdot 1163$ I | 24 |
| 25 | $9 \cdot 37792$ | $7 \cdot 39401$ | 5.90606 | 3.88331 | 25 |
| 26 | $9 \cdot 1723$ | 7.07561 | $5 \cdot 62482$ | 3.66350 | 26 |
| 27 | 8.67041 | $6 \cdot 77092$ | $5 \cdot 35697$ | 3.45614 | 27 |
| 28 | $8 \cdot 33694$ | $6 \cdot 47935$ | 5-10187 | $3 \cdot 2605 \mathrm{I}$ | 28 |
| 29 | 8.01628 | $6 \cdot 20033$ | 4.85893 | 3.07595 | 29 |
| 30 | $7 \times 70797$ | 5.93333 | 4.62755 | 2.90184 | 30 |
| 3 I | $7 \cdot 41151$ | $5 \cdot 67783$ | 440719 | $2 \cdot 73758$ | 31 |
| 32 | 7.12645 | 5.43333 | 4-19732 | 2.58263 | 32 |
| 33 | $6 \cdot 85235$ $6 \cdot 58880$ | $5 \cdot 19936$ | 3.99745 | 2.43644 | 33 |
| 34 | $6 \cdot 58880$ | 4.97546 | 3.80710 | 2.29853 | 34 |
| 35 | $6 \cdot 33539$ | 4.76121 | 3.6258I | $2 \cdot 16842$ | 35 |
| 36 | 6.09172 | 4.55618 | 3.45315 | $2 \cdot 04567$ | 36 |
| 37 | $5 \cdot 85742$ | 4.35998 | $3 \cdot 28871$ | 1.92989 | 37 |
| 38 | 5.63213 | $4 \cdot 17223$ | $3 \cdot 13211$ | I.82067 | 38 |
| 39 | 5.41551 | 3.99256 | 2.98296 | 1.71760 | 39 |
| 40 | $5 \cdot 20723$ | 3.82064 | $2 \cdot 84091$ | 1.62037 | 40 |
| 4 I | $5 \cdot 00695$ | 3.65611 | $2 \cdot 70563$ | I 52885 | 4 I |
| 42 | $4 \cdot 81437$ | 3.49867 | $2 \cdot 57679$ | 1.44213 | 42 |
| 43 | 4.62920 | 3.34801 | $2 \cdot 45409$ | 1.36050 | 43 |
| 44 | 445116 | 3.20384 | $2 \cdot 33723$ | $1 \cdot 28349$ | 44 |
| 45 | 4.27996 | 3.06587 | $2 \cdot 22593$ | 121084 | 45 |
| 46 | 4 111535 | 2.93385 | $2 \cdot 11993$ | 1.14230 | 46 |
| 47 | 3.95706 | 2.80751 | 2.01899 | I ${ }^{\circ} 07764$ | 47 |
| 48 | 3.80487 3.65853 | 2.68661 | 1.92284 | $1 \times 1664$ | 48 |
| 49 | 3.65853 3.51781 | 2.57092 | 1.83128 | ${ }^{9} 95910$ | 49 |
| 50 | 3.51781 | 2.46021 | 174408 | -90481 | 50 |

For explanation see pp. 13, 14. See alsò Tables on pp. xxxii-Exxix

The Present Value of the Perpetuity of One Year'e Rent or Fine, Payable for Renewing Eatates at Various Intervals and Rates of Interest

| YEARS' PURCHASE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $3 \%$ | $4 \%$ | $5 \%$ | $6 \%$ | 8\% | 10\% | Years |
| 2 | 16.4204 | 12.2549 | 9•7561 | 8.0906 | 6.0096 | 4.7619 | 2 |
| 3 | 10.7839 | $8 \cdot 0089$ | $6 \cdot 3439$ | 5.2350 | 3.8504 | 3.0211 | 3 |
| 4 | 7.9675 | $5 \cdot 8872$ | 4.6401 | 3.8098 | 2.7740 | $2 \cdot 1547$ | 4 |
| 5 | $6 \cdot 2786$ | $4 \cdot 6157$ | $3 \cdot 6195$ | 2.9566 | 2.1307 | 1.6380 | 5 |
| 6 | 5.1533 | $3 \% 690$ | $2 \cdot 9403$ | 2.3894 | I'7039 | I 2961 | 6 |
| 7 | 4.3503 | $3 \cdot 1652$ | 2.4564 | 1.9856 | 1.4009 | I $\cdot 054 \mathrm{I}$ | 7 |
| 10 | $2 \cdot 9076$ | 2.0823 | I-5901 | 1.2646 | . 8629 | $\cdot 6275$ | 10 |
| 14 | I 9595 | I. 3667 | I 0205 | 7931 | -5162 | - 3575 | 14 |
| 20 | I 2405 | -8395 | -6049 | 4531 | -2731 | -1746 | 20 |
| 21 | I•1624 | 7820 | $\cdot 5599$ | $\cdot 4167$ | '2479 | -1562 | 21 |
| 40 | -442I | '263I | -1656 | -1077 | . 0483 | -0226 | 40 |

## Number of Years' Purchase for the Renewal of any Number of Years Expired in a

TEN YEARS' LEASE

| Years | $2 \%$ | 21 $\frac{1}{2}$ | $3 \%$ | $3 \frac{1}{2} \%$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | -82034 | ${ }^{7} 78119$ | '74409 | 70892 | I |
| 2 | 1.65710 | I-58192 | 1.5105 | I. 44265 | 2 |
| 3 | 2.51059 | 2.40267 | $2 \cdot 29992$ | $2 \cdot 20207$ | 3 |
| 4 | 3.38115 | 3.24394 | $3 \cdot 11301$ | 2.98806 | 4 |
| 5 | $4 \cdot 26912$ | $4 \cdot 10623$ | 3.95049 | 3.80156 | 5 |
| 6 | $5 \cdot 17485$ | 4.99009 | 4.81310 | 4.64353 | 6 |
| 7 | 6.09870 | $5 \cdot 89604$ | 570159 | $5 \cdot 51497$ | 7 |
| 8 | 7.04102 | $6 \cdot 82464$ | 6.61673 | 6.41692 | 8 |
| 9 | 8.00219 | 7.77645 | 7.55933 | $7 \cdot 35043$ | 9 |
| 10 | 8.98258 | $8 \cdot 75206$ | 8.53020 | $8 \cdot 3 \mathrm{~T} 66 \mathrm{I}$ | 10 |
|  | 4\% | $4 \frac{1}{2} \%$ | $5 \%$ | $17.95 \%$ |  |
| I | -67557 | . 64393 | 61391 | -1919 | 1 |
| 2 | 1.37815 | $1 \cdot 31683$ | I 25852 | . 4188 | 2 |
| 3 | ${ }^{2} \cdot 1.10885$ | 2.02002 | 193536 | .6851 | 3 |
| 4 | 2.86876 | 2.75485 | 2.64604 | I 0000 | 4 |
| 5 | $3 \cdot 65908$ | $3 \cdot 52274$ | 3.39225 | I 3714 | 5 |
| 6 | 4.48100 | 432519 | $4 \cdot 17578$ | 1.8094 | 6 |
| 7 | $5 \cdot 3358 \mathrm{I}$ | $5 \cdot 16376$ | 4.99848 | $2 \cdot 3261$ | 7 |
| 8 | $6 \cdot 22481$ | 6.04005 | 5.86232 | $2 \cdot 9355$ | 8 |
| 9 | $7 \cdot 14936$ | 6.95578 | 6.76935 | 3.6543 | 9 |
| Io | $8 \cdot 11090$ | 791272 | 772173 | 4.502I | 10 |

For explanation see pp. 14-16

| Number of Years' Purchase for the Renewal of any Number of Years Expired in a <br> TWENTY YEARS' LEASE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $2 \%$ | 21 \% | $3 \%$ | 3 1 \% | Years |
| 2 | . 67297 | . 61027 | . 55368 | ${ }^{5} 50256$ | 1 |
| 2 | 1.35940 | 1.23580 | 1.12397 | $1 \cdot 02272$ | 2 |
| 3 | 2.05956 | I.87696 | 171136 | 1.56108 | 3 |
| 4 | $2 \cdot 77372$ | 2.53416 | $2 \cdot 31638$ | $2 \cdot 11828$ | 4 |
| 5 | $3 \cdot 50217$ | 3.20778 | $2 \cdot 93954$ | .2.69499 | 5 |
| 6 | 4.24518 | 3.89825 | $3 \cdot 58141$ | 3.29188 | 6 |
| 7 | 5.00306 | $4 \cdot 60598$ | $4 \cdot 24252$ | $3 \cdot 90966$ | 7 |
| 8 | 5.77609 | 5.33140 | 4.92348 | 4.54906 | 8 |
| 9 | $6 \cdot 56458$ | 6.07495 | $5 \cdot 62486$ | $5 \cdot 21085$ | 9 |
| 10 | $7 \cdot 36885$ | 6.83710 | 6.34728 | 5.89579 | 10 |
| 11 | 8-18919 | $7 \cdot 61829$ | 7.09137 | 6.60471 | 11 |
| 12 | 9.02595 | 8.41902 | 7.85779 | 7.33844 | 12 |
| 13 | 9.87944 | 9.23977 | 8.64720 | $8 \cdot 09786$ | 13 |
| 14 | 10.75000 | 10.08103 | $9 \cdot 46029$ | 8.88385 | 14 |
| 15 | 11.63797 | 10.94333 | $10 \cdot 29777$ | $9 \cdot 69735$ | 15 |
| 16 | 12.54370 | 11.82719 | 11-16038 | 10.53932 | 16 |
| 17 | 13.46755 | 12.73314 | 12.04887 | 11.41076 | 17 |
| 18 | 14.40987 | $13 \cdot 66174$ | 12.96401 | 12.31271 | 18 |
| 19 | 15.37104 | 14.61355 | 13.90661 | 13.24622 | 19 |
| 20 | 16.35143 | $15 \cdot 58916$ | 14.87748 | 14.21240 | 20 |
|  | 4\% | 4 $\frac{1}{2} \%$ | $5 \%$ | 12'304\% |  |
| 1 | -45639 | $\cdot 41465$ | $\cdot 37689$ | -098 | 1 |
| 2 | -93103 | -84795 | $\cdot 77262$ | $\cdot 208$ | 2 |
| 3 | 1.42466 | 1.30075 | $1 \cdot 18814$ | -332 | 3 |
| 4 | I.93803 | 1.77393 | $1 \cdot 62444$ | -471 | 4 |
| 5 | 247194 | $2 \cdot 26839$ | 2.08255 | -628 | 5 |
| 6 | $3 \cdot 02721$ | $2 \cdot 78511$ | $2 \cdot 56357$ | -803 | 6 |
| 7 | $3 \cdot 60468$ | 3.32509 | 3.06864 | 1.000 | 7 |
| 8 | $4 \cdot 20526$ | 3.88936 | $3 \cdot 59896$ | 1.221 | 8 |
| 9 | $4 \cdot 82985$ | 4.47902 | 4.15580 | 1.470 | 9 |
| 10 | 5.47943 | 5.09522 | 4.74048 | 1.749 | to |
| 11 | $6 \cdot 15500$ | $5 \cdot 73915$ | 5.35439 | 2.062 | 11 |
| 12 | $6 \cdot 85758$ | 6.41205 | 5.99900 | 2.414 | 12 |
| 13 | $7 \cdot 58828$ | 7-11524 | $6 \cdot 67584$ | 2.809 | 13 |
| 14 | 8.34819 | 7.85007 | $7 \cdot 38652$ | 3.253 | 14 |
| 15 | $9 \cdot 13851$ | 8.61796 | $8 \cdot 13273$ | 3.751 | 15 |
| 16 | 9.96043 | $9 \cdot 42041$ | 8.91626 | 4.311 | 16 |
| 17 | 10.81524 | 10.25898 | 9.73896 | 4.940 | 17 |
| 18 | 11.70424 | 11.13527 | 10.60280 | $5 \cdot 646$ | 18 |
| 19 | 12.62879 | 12.05100 | II•50983 | 6.439 | 19 |
| 20 | 13.59033 | $13 \cdot 00794$ | 12.4622 [ | $7 \cdot 329$ | 20 |

For explanation see pp. 14-16

| Number of Years' Purchase for the Renewal of any Number of Years Expired in a |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| TWENTY-ONE YEARS' LEASE |  |  |  |  |  |
| Years | $2 \%$ | $2 \frac{1}{2} \%$ | $3 \%$ | $3 \frac{1}{2} \%$ | Years |
| 2 | ${ }^{-65978}$ | .59539 r 20566 | 53754 1.09122 | $\cdot .48557$ | I |
| 2 | $1 \cdot 33275$ | I-20566 | 1009122 | $\cdot 98813$ | 2 |
| 3 | 2 -01918 | I-83119 | 1.66151 | I-50829 | 3 |
| 4 | $2 \cdot 71934$ | 2.47235 | 2.24890 | $2 \cdot 04665$ | 4 |
| 5 | 3.43350 | 3.12955 | 2.85392 | $2 \cdot 60385$ | 5 |
| 6 | 4.16195 | 3.80317 | 3.47708 | 3.18056 | 6 |
| 7 | 4.90496 | 4.49364 | 4.11895 | $3 \cdot 77745$ | 7 |
| 8 | $5 \cdot 66284$ | $5 \cdot 20137$ | $4 \cdot 78006$ | $4 \cdot 39523$ | 8 |
| 9 | 6.43587 | 5.92679 | $5 \cdot 46102$ | 5.03463 | 9 |
| ro | $7 \cdot 22436$ | $6 \cdot 67034$ | $6 \cdot 16240$ | $5 \cdot 69642$ | 10 |
| II | $8 \cdot 02863$ | 7.43249 | $6 \cdot 88482$ | $6 \cdot 38136$ | II |
| 12 | 8.84897 | 8.21368 | $7 \cdot 6289 \mathrm{y}$ | $7 \cdot 09028$ | 12 |
| 13 | $9 \cdot 68573$ | 9.01441 | $8 \cdot 39533$ | 7.82401 | 13 |
| 14 | 10.53922 | $9 \cdot 83516$ | 9•18474 | $8 \cdot 58343$ | 14 |
| 15 | 11.40978 | 10.67642 | 9.99783 | $9 \cdot 36942$ | 15 |
| 16 | 12.29775 | 11.53872 | 10.83531 | 10.18292 | 16 |
| 17 | 13.20348 | 12.42258 | 11.69792 | $1 \mathrm{I} \cdot 02489$ | 17 |
| 18 | $14 \cdot 12733$ | 13.32853 | 12.58641 | 11.89633 | 18 |
| 19 | 15.06965 | 14.25713 | 13.50155 | 12.79828 | 19 |
| 20 | 16.03082 | 15.20894 | 14.44415 | 13.73179 | 20 |
| 21 | 17.0121 | $16 \cdot 18455$ | 15.41502 | 14.69797 | 21 |
|  | $4 \%$ | $4 \frac{1}{2} \%$ | $5 \%$ | -564 |  |
| $\underline{1}$ | .43883 .89522 | .39678 .81143 | .35894 .7358 | -100 | $\underline{1}$ |
| 3 | I-36986 | I 24473 | r-13 515 | -338 | 3 |
| 4 | r.86349 | r -69753 | I-54708 | -477 | 4 |
| 5 | $2 \cdot 37686$ | 2.17071 | r.98338 | . 633 | 5 |
| 6 | 2.91077 | 2.66517 | 2.44149 | -806 | 6 |
| 7 | $3 \cdot 46604$ | $3 \cdot 18189$ | 2.92251 | 1.000 | 7 |
| 8 | 4.04351 | $3 \cdot 72187$ | 3.42758 | $\underline{1216}$ | 8 |
| 9 | $4 \cdot 64409$ | $4 \cdot 28614$ | 3.95790 | 1457 | 9 |
| ro | 5.26868 | 4.87580 | 4•51474 | $1 \cdot 726$ | 10 |
| II | 5.91826 | $5 \cdot 49200$ | 5 '09942 | 2.026 | 11 |
| 12 | $6 \cdot 59383$ | $6 \cdot 13593$ | $5 \cdot 71333$ | $2 \cdot 361$ | 12 |
| 13 | 7.29641 | $6 \cdot 80883$ | 6.35794 | $2 \cdot 734$ | 13 |
| 14 | $8 \cdot 02711$ | 7.51202 | 7.03478 | 3.151 3.616 | 14 |
| ${ }^{5}$ | $8 \cdot 78702$ | 8.24685 | 7.74546 | $3 \cdot 616$ | 15 |
| 16 | 9•57734 | 9.01474 | 8.49167 | 4.135 | 16 |
| 17 | $10 \cdot 39926$ | 9.81719 | $9 \cdot 27520$ | 4.713 | 17 |
| 18 | 11.25407 | 10.65576 | 10.09790 | $5 \cdot 359$ | 18 |
| 19 | $12 \cdot 14307$ | 11.53205 | 10.96174 | 6.079 6.882 | 19 |
| 20 | 13.06762 | 12.44778 | 11.86877 | 6.882 | 20 |
| 21 | 14.02916 | 13.40472 | 12.82115 | 7779 | 21 |


| Number of Years' Purchase for the Renewal of any Number of Years Expired in a |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| FORTY YEARS' LEASE |  |  |  |  |  |
| Years | $2 \%$ | $2 \frac{1}{2} \%$ | $3 \%$ | $3 \frac{1}{2} \%$ | Years |
| 1 | -45289 | -37243 | -30655 | '25257 | 1 |
| 2 | -91484 | -75417 | . 62231 | '51398 | 2 |
| 3 | $1 \cdot 38603$ | I-14545 | -94753 | $\cdot 78454$ | 3 |
| 4 | I-86664 | I 54652 | I 28285 | $1 \cdot 06458$ | 4 |
| 5 | 2.35686 | 1995761 | I 62755 | $1 \cdot 35441$ | 5 |
| 6 | $2 \cdot 85689$ | $2 \cdot 37898$ | 1988293 | 1.65439 | 6 |
| 7 | $3 \cdot 36692$ | $2 \cdot 81089$ | 2.34898 | I.96486 | 7 |
| 8 | 3.88715 | 3.25359 | 2.72600 | $2 \cdot 28620$ | 8 |
| 9 | 4.41778 | 3.70737 | 3.11434 | 2.61879 | 9 |
| 10 | 4.95902 | $4 \cdot 17248$ | 3.51433 | 2.96302 | 10 |
| 11 | 5.51110 | $4 \cdot 64922$ | 3.92631 | 3.31930 | 11 |
| 12 | 6.07421 | 5'13788 | $4 \cdot 35066$ | $3 \cdot 68805$ | 12 |
| 13 | $6 \cdot 64858$ | 5.63876 | $4 \cdot 78774$ | $4.0697{ }^{\circ}$ | 13 |
| 14 | 7.23444 | $6 \cdot 15216$ | 5.23793 | 4.46472 | 14 |
| 15 | 7.83202 | $6 \cdot 67839$ | $5 \cdot 70162$ | 4.87355 | 15 |
| 16 | 8.44155 | 721778 | $6 \cdot 17923$ | 5.29670 | 16 |
| 17 | $9 \cdot 06328$ | 7.77066 | 6.67116 | 573466 | 17 |
| 18 | $9 \cdot 69743$ | 8.33736 | $7 \cdot 17785$ | $6 \cdot 18794$ | 18 |
| 19 | $10 \cdot 34427$ | $8 \cdot 91822$ | 7.69975 | 6.65710 | 19 |
| 20 | 11.00405 | $9 \cdot 51361$ | $8 \cdot 23729$ | 7-14267 | 20 |
| 21 | 11.67702 | 10.12388 | $8 \cdot 79097$ | $7 \cdot 64523$ | 21 |
| 22 | 12.36345 | 10.74941 | 9.36126 | $8 \cdot 16539$ | 22 |
| 23 | 13.06361 | 11.39057 | 9.94865 | $8 \cdot 70375$ | 23 |
| 24 | 13.77777 | 12.04777 | 10.55367 | $9 \cdot 26095$ | 24 |
| 25 | 14.50622 | 12.72139 | II-17683 | 9.83766 | 25 |
| 26 | 15.24923 | 13.41186 | 11.81870 | 10.43455 | 26 |
| 27 | 16.00711 | 14.11959 | 12.4788 I | 11.05233 | 27 |
| 28 | 16.78014 | 14.84501 | 13.16077 | 11.69174 | 28 |
| 29 | 17.56863 | 15.58856 | 13.86215 | 12.35352 | 29 |
| 30 | 18.37290 | 16.35071 | 14.58457 | 13.03846 | 30 |
| 31 | 19.19324 | 17.13190 | 15.32866 | 13.74738 | 35 |
| 32 | 20.03000 | 17.93263 | $16 \cdot 09508$ | 14.48111 | 32 |
| 33 | 20.88349 | 18.75338 | $16 \cdot 88449$ | 15.24053 | 33 |
| 34 | 21.75405 22.64202 | 19.59465 | 17.69758 18.57506 | 16.02652 | 34 |
| 35 | 22.64202 | 20.45694 | 18.53506 | 16.84002 | 35 |
| 36 | 23.54775 | 21.34080 | 19.39767 | 17.68199 | 36 |
|  | 24.47160 | 22.24675 | 20.28616 | 18.55343 | 37 |
| 38 | 25.41392 | 23.17535 | 21.20130 | 19.45538 | 38 |
| 39 | 26.37509 27.3548 | $24 \cdot 12716$ $25 \cdot 10277$ | 22.14390 | $20 \cdot 38889$ | 39 |
|  | 273558 | $25 \cdot 10277$ | 2311477 | 21.35507 | 40 |

For explanation see pp. 14-16

| Number of Years' Purchase for the Renewal of any Number of Years Expired in a FORTY YEARS' LEASE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $4 \%$ | $4 \frac{1}{2} \%$ | $5 \%$ | $8 \%$ | Years |
| 1 | -20828 | -17192 | ${ }^{1} 4205$ | . 04603 | 1 |
| 2 | -42490 | -35159 | -29120 | -09574 | 2 |
| 3 | -65019 | -53934 | '44780 | -14943 | 3 |
| 4 | -88449 | $\cdot 73554$ | -61224 | $\cdot 20742$ | 4 |
| 5 | 1-12816 | -94057 | 78490 | $\cdot 27004$ | 5 |
| 6 | 1.38157 | 1'15482 | -96619 | $\cdot 33768$ | 6 |
| 7 | 1.64512 | 1-37872 | 1.15654 | ${ }^{41072}$ |  |
| 8 | 1.91922 | 1.61269 | 1-35641 | $\cdot 48961$ | 8 |
| 9 | 2-20428 | 1.85719 | I.56628 | -57481 | 9 |
| ro | $2 \cdot 50074$ | 2-11269 | 1.78664 | $\cdot 66683$ | 10 |
| 11 | 2.80905 | $2 \cdot 37969$ | $2 \cdot 01802$ | 76620 | 11 |
| 12 | $3 \cdot 12971$ | $2 \cdot 6587 \mathrm{I}$ | $2 \cdot 26096$ | -87353 | 12 |
| 13 | $3 \cdot 46318$ | 2.95028 | $2 \cdot 51606$ | $\cdot 98945$ | 13 |
| 14 | $3 \cdot 81000$ | 3.25497 | $2 \cdot 78391$ | 1-11463 | 14 |
| 15 | 4•17069 | 3.57337 | 3.06515 | $1 \cdot 24983$ | 15 |
| 16 | 4.54581 | 3.90610 | $3 \cdot 36045$ | 1.39585 | 16 |
| 17 | 4.93593 | $4 \cdot 25381$ | 3.67052 | - 55355 | 17 |
| 18 | $5 \cdot 34165$ | 4.61716 | 3.99609 | 1 72387 | 18 |
| 19 | $5 \cdot 7636$ I | 4.99686 | 4.33794 | I 9078 I | 19 |
| 20 | 6.20244 | 5.39364 | $4 \cdot 69688$ | 2.10646 | 20 |
| 21 | $6 \cdot 65883$ | 5•80829 | 5.07377 | 2.32101 | 2 I |
| 22 | $7 \cdot 13347$ | $6 \cdot 24159$ | $5 \cdot 46950$ | 2.55272 | 22 |
| 23 | 7.62710 | $6 \cdot 69439$ | $5 \cdot 88502$ | 2.80297 | 23 |
| 24 | $8 \cdot 14047$ | $7 \cdot 16757$ | $6 \cdot 32132$ | 3.07324 | 24 |
| 25 | $8 \cdot 67438$ | $7 \cdot 66203$ | 6'77943 | $3 \cdot 36513$ | 25 |
| 26 | 9.22965 | $8 \cdot 17875$ | 7.26045 | $3 \cdot 68037$ | 26 |
| 27 | 9.80712 | $8 \cdot 71873$ | 7.76552 | 4.02083 | 27 |
| 28 | 10.40770 | $9 \cdot 28300$ | $8 \cdot 29584$ | $4 \cdot 38853$ | 28 |
| 29 | 11.03229 | 9.87266 | $8 \cdot 85268$ | $4 \cdot 78565$ | 29 |
| 30 | 11.68187 | 10.48886 | 9.43736 | 5.21453 | 30 |
| 3 I | 12.35744 | 11•13279 | 10.05127 | 567772 | 3 x |
| 32 | 13.06002 | $1 \mathrm{I} \cdot 80569$ | 10•69588 | $6 \cdot 17797$ | 32 |
| 33 | I3.79072 | $12 \cdot 50888$ | 11.37272 | $6 \cdot 71824$ | 33 |
| 34 | 14.55063 | 13.24371 | 12.08340 | $7 \cdot 30173$ | 34 |
| 35 | 15.34095 | 14.01160 | 12.82961 | 7'93190 | 35 |
| 36 | $16 \cdot 16287$ | 14.81405 | 13.61314 | $8 \cdot 61248$ | 36 |
| 37 | 17.01768 | 15.65262 | 14.43584 | 9.34751 | 37 |
| 38 | 17.90668 | 16.5289 I | 15.29968 | 10.14135 | 38 |
| 39 | 18.83123 | 17.44464 | $16 \cdot 20671$ | 10'99868 | 39 |
| 40 | 19.79277 | 18.40158 | $17 \cdot 15909$ | $11 \times 92461$ | 40 |

## INTEREST TABLES

The Percentage per Annum which each Number of Years' Purchase of a Perpetuity allows the Purchaser

| Years | PER CENT. PER ANNUM |  | Years |
| :---: | :---: | :---: | :---: |
| 1 | $100{ }^{\text {2 }}$ | $\begin{array}{rrrr}\text { ¢ } & \text { s. } \\ 100 & \text { d. } \\ \text { c }\end{array}$ | 1 |
| 2 | 50 | 50 - 0 | 2 |
| 3 | $33 \cdot 3$ | $\begin{array}{lll}33 & 6 & 8\end{array}$ | 3 |
| 4 | 25 | 25 - o | 4 |
| 5 | 20 | 2000 | 5 |
| 6 | 16.6 | 16134 | 6 |
| 7 | 14.2857 | $14 \quad 5 \quad 8 \frac{1}{2}$ | 7 |
| 8 | 12.5 | 12 Io 0 | 8 |
| 9 | $1 \mathrm{I} \cdot \mathrm{i}$ | 11223 | 9 |
| 10 | 10 | 10 0 o | 10 |
| 11 | $9.0{ }^{\text {g }}$ | 9 I $9 \frac{3}{4}$ | 11 |
| 12 | $8 \cdot 3$ | 868 | 12 |
| 13 | $7.6923{ }^{\circ}$ | 713104 | 13 |
| 14 | $7 \cdot 14285$ | $7210 \frac{4}{4}$ | 14 |
| 15 | 6.6 | $\begin{array}{lll}6 & 13 & 4\end{array}$ | 15 |
| 16 | $6 \cdot 25$ | 650 | 16 |
| 17 | $5 \cdot 88235$ | 517 17 <br> 5 71 <br> 1  | 17 |
| 18 | $5 \cdot{ }^{\circ} 5$ | 511911 | 18 |
| 19 | $5 \cdot 26316$ | $55^{5} 503 \frac{3}{4}$ | 19 |
| 20 | 5 | 500 | 20 |
| 21 | $4 \cdot 7619$ |  | 21 |
| 22 | $4 \cdot{ }^{\circ} 5$ | 410 II | 22 |
| 23 | 4.3478 |  | 23 |
| 24 | $4 \cdot 16$ | 434 | 24 |
| 25 | 4 | 400 | 25 |
| 26 | 3.84615 | 3161 t | 26 |
| 27 | $3.7{ }^{\circ}$ | 3141 | 27 |
| 28 | 3.5714 | ${ }_{3} \mathrm{II} 5$ 5 ${ }^{\text {a }}$ | 28 |
| 29 30 | 3.4483 $3 \cdot 3$ | 3 8 I1 <br> 3 6 8 | 29 30 |
| 31 | 3.2258 | $346 \frac{1}{4}$ | 31 |
| 32 | $3 \cdot 125$ | 326 | 32 |
| 33 | $3 \cdot 03$ | $3{ }^{3} 18{ }^{7 \frac{1}{4}}$ | 33 |
| 34 | $2 \cdot 9412$ | 21810 | 34 |
| 35 | 2.85714 | 21719 | 35 |
| 36 | 2.7 | $2156 \frac{1}{2}$ | 36 |
| 37 | $\underline{2} 7{ }^{\circ}$ | 21400 | 37 |
| 38 | 2.6316 | $2127 \frac{1}{2}$ | 38 |
| 39 | $2 \cdot 56410$ ' | 2 II 3 ${ }^{\frac{1}{2}}$ | 39 |
| 40 | 2.5 | 2 10 0 | 40 |
| 41 | 2.4390 | 28899 | 41 |
| 42 | $2 \cdot 38095$ | 27 7 ${ }^{2}$ | 42 |
| 43 | $2 \cdot 32558$ | 26 6 | 43 |
| 44 | $2 \cdot 27$ | $2{ }^{2} 515 \frac{1}{2}$ | 44 |
| 45 | $2 \cdot 2$ | 2454 | 45 |
| 46 | 2.17391 |  | 46 |
| 47 | 2.12766 | $\begin{array}{llll}2 & 2 & 68 \\ 4\end{array}$ | 47 |
| 48 | 2.083 | 2 1 8 <br> 2 0  <br> 1   | 48 |
| 49 50 | 2.0408 2.0 | $\begin{array}{llll}2 & 0 & 8^{3} \\ 2 & 0 & 0\end{array}$ | 49 50 |

For explanation see p. 16

| INTEREST, AMOUNT, AND DISCOUNT OF £1 IN A YEAR, NINE, SIX, AND THREE MONTHS |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Interest per Antum | Period | Interest | Amount | Discount |
| $1 \%$ | $\left\{\begin{array}{l}1 \text { year } \\ 9 \\ 6 \text { months } \\ 6 \\ 3\end{array}\right.$ | -OI -0075 -005 -0025 | I. OI <br> I.0075 <br> 1.005 <br> I'0025 | -O9goi <br> -007444 <br> -004975 <br> -002494 |
| $1 \frac{1}{2} \%$ | $\left\{\begin{array}{l}\text { I year } \\ 9 \text { months } \\ 6 \\ 3\end{array}\right.$ | $\cdot 015$ <br> -OI125 <br> -0075 <br> -00375 | 1.015 <br> I 11125 <br> I 0075 <br> I 00375 | -014778 <br> -011125 <br> -007444 <br> -003736 |
| $1 \frac{3}{4} \%$ | $\left\{\begin{array}{l}\text { I year } \\ 9 \text { months } \\ 6 \\ 3\end{array}\right.$ | -0175 <br> -O13125 <br> $\cdot 00875$ <br> $\cdot 004375$ | $\begin{aligned} & \text { I.0175 } \\ & \text { I } 013125 \\ & \text { r.00875 } \\ & \text { I.004375 } \end{aligned}$ | -017199 <br> 'OI2955 <br> -008674 <br> -004356 |
| $2 \%$ | $\left\{\begin{array}{l}\text { I jear } \\ 9 \text { months } \\ 6 \\ 3\end{array}\right.$ | -02 <br> OI 5 <br> -OI <br> -005 | $\begin{aligned} & \text { I.O2 } \\ & \text { I.OI } \\ & \text { I.OI } \\ & 1.005 \end{aligned}$ | -019608 <br> -014778 <br> -O0990I <br> -004975 |
| $2 \frac{1}{4} \%$ | $\left\{\begin{array}{l}\text { I year } \\ 9 \text { months } \\ 6 \\ 3\end{array}\right.$ | -0225 <br> '016875 <br> - 1125 <br> .005625 | $\begin{aligned} & 1 \cdot 0225 \\ & 1 \cdot 016875 \\ & 1 \cdot 01125 \\ & 1 \cdot 005625 \end{aligned}$ | -022005 <br> -016595 <br> -011125 <br> -005593 |
| $2 \frac{1}{2} \%$ | $\left\{\begin{array}{l}\text { r year } \\ 9 \\ 6 \\ 6\end{array}\right.$ | -025 <br> -oI875 <br> . 0125 <br> -00625 | 1.025 I. 01875 I 0125 I $\cdot 00625$ | -024390 <br> -018405 <br> -OI2346 <br> .0062 1 I |
| $2 \frac{3}{4} \%$ | $\left\{\begin{array}{l} \text { y year } \\ 9 \text { months } \\ 6 \text { m } \\ 3 \quad " \end{array}\right.$ | $\cdot 0275$ <br> -020625 <br> -OI 375 <br> -0.06875 | $1 \cdot 0275$ <br> I 020625 <br> I-OI 375 <br> I•006875 | $\cdot 026764$ <br> -020208 <br> -OI3563 <br> -006828 |
| $3 \%$ | $\left\{\begin{array}{l}1 \\ 1 \\ 9 \\ \text { yoar } \\ 6 \\ \text { months }\end{array}\right.$ | .03 .0225 .015 .0075 | 1.03 <br> $1 \cdot 0225$ <br> I. 015 <br> I•0075 | -029126 . 222005 <br> -014778 <br> -007444 |
| 3年 \% | $\left\{\begin{array}{l}1 \text { year } \\ 9 \\ 6 \text { months } \\ 3 \\ 3\end{array}\right.$ | .035 .02625 .0175 .00875 | I. 035 <br> 1. 02625 <br> 1.0175 <br> 1.00875 | -033816 <br> -025579 <br> -O17199 <br> -008674 |
| $4 \%$ |  | .04 .03 .02 .02 .01 | $\begin{aligned} & 1.04 \\ & 1.03 \\ & 1.02 \\ & 1.01 \end{aligned}$ | -038462 <br> -029126 <br> - 19608 <br> -009901 |
| $4 \frac{1}{2} \%$ | $\left\{\begin{array}{l}\text { I year } \\ 9 \\ 6 \text { months } \\ 6 \\ 3\end{array}\right.$ | -045 <br> -03375 <br> -0225 <br> -01125 | I. 045 <br> 1.03375 <br> 1.0225 <br> I.OII25 | -043062 <br> -032648 <br> -022005 <br> -OIII25 |
| $5 \%$ | $\left\{\begin{array}{l}\text { y year } \\ 9 \\ 9 \\ 6 \\ 3 \\ 3\end{array}\right.$ | -05 -0375 $\cdot 025$ -OI25 | $\begin{aligned} & \text { IO } 05 \\ & \text { r.0375 } \\ & \text { I.O25 } \\ & \text { I.O12 } \end{aligned}$ | $\begin{aligned} & .047619 \\ & .036145 \\ & .024390 \\ & \hline 012346 \end{aligned}$ |

For explanation see p. 16

| SINKING FUND FOR THE REPAYMENT Of LOANS |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $1 \%$ | $1 \frac{1}{4} \%$ | 12 \% | $1 \frac{3}{4} \%$ | Years |
| 1 | 1.000000 | 1.000000 | 1.000000 | 1 - 000000 | 1 |
| 2 | -497512 | -496893 | -496278 | -495663 | 2 |
| 3 | 330022 | -329202 | - 328383 | -327567 | 3 |
| 4 | -24628! | -245361 | -244445 | -243532 | 4 |
| 5 | -196040 | -195062 | -194089 | -193121 | 5 |
| 6 | -162548 | -161534 | -160525 | - 159523 | 6 |
| 7 | - 138628 | -137589 | -136556 | - 13553 I | 7 |
| 8 | -120690 | - 19633 | - I I 8584 | -117543 | 8 |
| 9 | -106740 | -10567I | -104609 | -103558 | 9 |
| 10 | '095582 | -094503 | -093434 | -092375 | 10 |
| II | .086454 | -085367 | -084294 | -083231 | II |
| 12 | $\cdot 078849$ | -077758 | -076680 | -075614 | 12 |
| 13 | -072415 | -071321 | -070240 | -069173 | 13 |
| 14 | -066gos | -065805 | -064723 | -063656 | 14 |
| 15 | -062124 | -061026 | -059944 | -058877 | 15 |
| 16 | -057945 | -056847 | -055765 | -054700 | 16 |
| 17 | -054258 | -053160 | -052080 | -051016 | 17 |
| 18 | -050982 | -049884 | . 048806 | -047745 | 18 |
| 19 | -048052 | -046955 | -045878 | -044821 | 19 |
| 20 | . 045415 | '044320 | - 043246 | -042191 | 20 |
| 21 | -043031 | -041937 | -040866 | -039815 | 21 |
| 22 | -040864 | -039770 | -038703 | -037656 | 22 |
| 23 | -038886 | -037897 | -036735 | -035688 | 23 |
| 24 | $\cdot 037073$ | -035987 | -034924 | -033886 | 24 |
| 25 | -035407 | -034322 | -033263 | -032230 | 25 |
| 26 | .033869 | $\cdot .032787$ | -031732 | -030703 | 26 |
| 27 | -032446 | -031367 | -030315 | -029291 | 27 |
| 28 | -031124 | -030049 | -02900I | -027982 | 28 |
| 29 | .029895 | -028822 | $\cdot 027779$ | -026764 | 29 |
| 30 | -028748 | -027679 | -026639 | . 025630 | 30 |
| 31 | $\cdot 027676$ | -226609 | -025574 | -024570 | 3 I |
| 32 | -026671 | .025608 | -024577 | -023578 | 32 |
| 33 | $\cdot 025728$ | -024668 | -02364I | -022648 | 33 |
| 34 | -024840 | -023784 | -022762 | -021774 | 34 |
| 35 | '024004 | . 022951 | -021934 | . 020951 | 35 |
| 36 | . 023214 | -022165 | . 021152 | -020175 | 36 |
| 37 | -022468 | .021424 | $\cdot 020414$ | -19443 | 37 |
| 38 | -021762 | -020720 | -019716 | -018750 | 38 |
| 39 | .021092 | -020054 | $\cdot 019055$ | -018094 | 39 |
| 40 | -020456 | -019421 | -OI8427 | -017472 | 40 |
| 4 I | -019851 | -018821 | -017831 | -016882 | 41 |
| 42 | -019276 | -018249 | -017264 | -01632I | 42 |
| 43 | -018727 | -017705 | -016725 | -015787 | 43 |
| 44 | -018204 | -017186 | - 016210 | -015278 | 44 |
| 45 | -017705 | -16690 | -OI5720 | -014793 | 45 |
| 46 | -017228 | -016217 | - Or 5251 | -14330 | 46 |
| 47 | $\bigcirc 016771$ | -15 5764 | - O 48803 | -013888 | 47 |
| 48 | -O16334 | -O15331 | -014375 | -013466 | 48 |
| 49 50 | .015915 .015513 | -O14916 | - ${ }^{\text {OI }} 13965$ | -013061 | 49 50 |

[^2]SINKING FUND FOR THE REPAYMENT OF LOANS

| Years | $1 \%$ | 1 1 \% | 11 \% | $1 \frac{3}{4} \%$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | .015127 | .014136 | -013195 | -012303 | 51 |
| 52 | -O14756 | -013769 | -12833 | -011947 | 52 |
| 53 | - 014400 | -013416 | -OI2485 | -011605 | 53 |
| 54 | -OI4057 | -13078 | -012151 | - 011277 | 54 |
| 55 | - 013726 | -01275I | -01r830 | -01096I | 55 |
| 56 | -OI3408 | - 012437 | - 111521 | . 010658 | 56 |
| 57 | - 013102 | -012135 | -011223 | -010366 | 57 |
| 58 | - 012806 | - 011843 | -010937 | -010085 | 58 |
| 59 | - 012520 | - 011562 | -010660 | -009814 | 59 |
| 60 | -012244 | - 011290 | -010393 | -009553 | 60 |
| 61 | -011978 | -011028 | - 010136 | -009302 | 61 |
| 62 | -011720 | -010774 | -009888 | -009059 | 62 |
| 63 | $\cdot 011471$ | -010529 | -009647 | -008825 | 63 |
| 64 | -011230 | -010292 | -009416 | -008598 | 64 |
| 65 | -010997 | .010063 | -009191 | -008379 | 65 |
| 66 | -010771 | -00984I | -008974 | -008168 | 66 |
| 67 | -010551 | -009626 | -008764 | -007964 | 67 |
| 68 | - 010339 | $\cdot 009417$ | -008560 | -007766 | 68 |
| 69 | - 010133 | -009215 | .008363 | -007575 | 69 |
| 70 | -009933 | -009019 | -008172 | -007389 | 70 |
| 71 | -009739 | -008829 | -007987 | -007210 | 71 |
| 72 | -009550 | -008645 | -007808 | -007036 | 72 |
| 73 | $\cdot 009367$ | ${ }^{-008466}$ | -007634 | -006868 | 73 |
| 74 | -009189 | -008292 | $\cdot 007465$ | -006704 | 74 |
| 75 | -009016 | .008123 | -007301 | -006546 | 75 |
| 76 | . 008848 | -007959 | -00714I | -006392 | 76 |
| 77 | $\bigcirc 008684$ | -007800 | -006987 | -006243 | 77 |
| 78 | . 008525 | $\cdot 007644$ | -006836 | -006098 | 78 |
| 79 | -008370 | -007493 | -006690 | -005958 | 79 |
| 80 | -008219 | '007347 | -006548 | -005821 | 80 |
| 8 r | -008072 | -007203 | -006410 | -005688 | 8 I |
| 82 | -007929 | -007064 | -006276 | -005559 | 82 |
| 83 | $\cdot .07789$ | -006929 | -006I45 | -005434 | 83 |
| 84 | $\cdot 007653$ | -006797 | -006018 | $\cdot 005312$ | 84 |
| 85 | ${ }^{\circ} 007520$ | '006668 | -005894 | -005194 | 85 |
| 86 | -007390 | -006543 | -005773 | -005078 | 86 |
| 87 | -007264 | -006420 | .005656 | -004966 | 87 |
| 88 | $\cdot 007141$ | -006301 | -00554I | -004857 | 88 |
| 89 | ${ }^{0} 007021$ | -06185 | -005430 | .004751 | 89 |
| 90 | -006903 | -006071 | . 00532 I | . 004648 | 90 |
| 91 | -006789 | -005961 | -005215 | -004547 | 91 |
| 92 | -006676 | -005853 | .005112 | '004449 | 92 |
| 93 | -006567 | -005747 | -005011 | -004353 | 93 |
| 94 | -006460 | -005644 | $\cdot 004913$ | -004260 | 94 |
| 95 | -006355 | $\cdot 005544$ | -004817 | :004169 | 95 |
| 96 | -006253 | -005445 | -004723 | -004081 | 96 |
| 97 | -006I53 | -005349 | . 004632 | -003995 | 97 |
| 98 | -006055 | $\cdot 005256$ | . 004543 | -003911 | 98 |
| 99 | -005959 | -005164 | -004456 | -003829 | 99 |
| 100 | -005866 | $\cdot 005074$ | - 00437 I | '003749 | 100 |


| SINKING FUND FOR THE REPAYMENT OF LOANS |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $2 \%$ | $2 \frac{1}{4} \%$ | 2 $\frac{1}{2}$ \% | 23 $\%$ | Years |
| 1 | 1.000000 | 1.000000 | 1 1000000 | 1.000000 | 1 |
| 2 | -495049 | -494438 | -493827 | -493222 | 2 |
| 3 | -326755 | -325945 | -325137 | -324332 | 3 |
| 4 | -242624 | -241719 | -240818 | - 239920 | 4 |
| 5 | -192158 | -191200 | -190247 | -189298 | 5 |
| 6 | -158526 | -157535 | -156550 | -15557 I | 6 |
| 7 | - 134512 | - 133500 | -132495 | -131497 | 7 |
| 8 | -116509 | -115485 | -114467 | -113458 | 8 |
| 9 | -102515 | -101482 | -100457 | -099441 | 9 |
| ro | -091326 | -090288 | -089259 | -088240 | 10 |
| II | -082178 | -081136 | -080106 | -079086 | II |
| 12 | -974560 | -073517 | ${ }^{\circ} \mathrm{O} 72487$ | - 071469 | 12 |
| 13 | -68118 | -067077 | -066048 | -065033 | 13 |
| 14 | $\cdot 062602$ | -061562 | .060536 | -059525 | 14 |
| 15 | -057825 | -056789 | -055766 | -054759 | 15 |
| 16 | -053650 | -052617 | -051599 | -050597 | 16 |
| 17 | - 049970 | -048940 | -047928 | . 046932 | r7 |
| 18 | -046702 | $\cdot 045677$ | -044670 | -043681 | 18 |
| 19 | -043782 | -042762 | $\cdot 041760$ | - 040778 | 19 |
| 20 | -041157 | -040142 | -039147 | -038172 | 20 |
| 21 | ${ }^{0} 038785$ | -037776 | -036787 | -035819 | 21 |
| 22 | 03663I | -035628 | -034646 | -033686 | 22 |
| 23 | - 34668 | -033671 | -032696 | -031744 | 23 |
| 24 | -032871 | -031880 | -030913 | -029969 | 24 |
| 25 | -031221 | -030236 | -029276 | -028340 | 25 |
| 26 | -029699 | -028721 | -027768 | -026841 | 26 |
| 27 | -028293 | -027322 | . 026377 | -025458 | 27 |
| 28 | . 026999 | . 02628025 | . 0250888 | -024177 | 28 |
| 29 | .025779 | . 0248281 | -023891 | -022989 | 29 |
| 30 | -024650 | -023699 | -022777 | -021884 | 30 |
| 31 | -023596 | -022653 | -021739 | -020855 | 31 |
| 32 | . 022611 | -021674 | -020768 | -019893 | 32 |
| 33 | -021687 | -020757 | - 019859 | -018993 | 33 |
| 34 | -020819 | -019897 | -019007 | -018149 | 34 |
| 35 | -020002 | -019087 | -OI8205 | -017356 | 35 |
| 36 | -019233 | -018325 | -017451 | -016611 | 36 |
|  | -018507 | -017606 | -01674I | - 015910 | 37 |
| 38 | -017821 | -016928 | -016070 | - O 5248 | 38 |
| 39 | -017171 | -016285 | -OI5436 | - 014623 | 39 |
| 40 | -016556 | -015677 | -174836 | -014032 | 40 |
| 4 I | - 015972 | -015101 | -014268 | - 013472 | 41 |
| 42 | -015417 | -014554 | -O13728 | - 012942 | 42 |
| 43 | -014890 | -014034 | - 013217 | -O12439 | 43 |
| 44 | -014388 | -013539 | -012730 | -011961 | 44 |
| 45 | -013910 | -13068 | -12267 | -011507 | 45 |
| 46 | -013453 | -012619 | $\cdot 011826$ | -011075 | 46 |
| 47 | -013018 | .012191 | -011407 | -.10664 | 47 |
| 48 | -012602 | -011782 | -011006 | .010272 | 48 |
| 50. | -. 011823 | - 01.1018 | - 010258 | . 009541 | 50 |

For explanation see pp. 16, 17

| SINKING FUND FOR THE REPAYMENT OF LOANS |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $2 \%$ | 21 \% | 21 $\frac{1}{2}$ | 23 \% \% | Years |
| 51 | .011459 | -010661 | -009909 | -009200 | 51 |
| 52 | -11109 | -010319 | -009574 | -008874 | 52 |
| 53 | -010774 | -009991 | -009254 | -008563 | 53 |
| 54 | -OIO452 | -009677 | -008948 | -008265 | 54 |
| 55 | -010143 | -009375 | -008654 | -007980 | 55 |
| 56 | -009847 | -009085 | .008373 | -007706 | 56 |
| 57 | .009561 | -008807 | -008102 | -007444 | 57 |
| 58 | -009287 | -008540 | -007842 | -007193 | 58 |
| 59 | -009022 | . 008283 | $\cdot 007593$ | -006952 | 59 |
| 60 | -008768 | -008035 | $\cdot 007353$ | -006720 | 60 |
| 61 | -008523 | -007797 | .007123 | -006498 | 61 |
| 62 | -008286 | -007568 | -006901 | -006284 | 62 |
| 63 | $\bigcirc 008058$ | $\cdot 007347$ | $\cdot 006688$ | -006079 | 63 |
| 64 | -007839 | -007134 | . 006482 | -005881 | 64 |
| 65 | -007626 | -006929 | .006285 | -005691 | 65 |
| 66 | -007421 | -006731 | -006094 | -005508 | 66 |
| 67 | -007223 | -006540 | -005910 | :005332 | 67 |
| 68 | .007032 | -006355 | -005733 | .005163 | 68 |
| 69 | -006847 | $\cdot 006177$ | -005562 | -005000 | 69 |
| 70 | -006668 | . 006005 | -005397 | . 004842 | 70 |
| 71 | -006494 | -005838 | -005238 | -004690 | 71 |
| 72 | .006327 | -005677 | -005084 | -004544 | 72 |
| 73 | -006165 | -005522 | -004936 | -004403 | 73 |
| 74 | -006007 | -005371 | -004792 | . 004267 | 74 |
| 75 | -005855 | -005226 | -004654 | .004136 | 75 |
| 76 | -005708 | -005085 | -004519 | .004009 | 76 |
| 77 | -005564 | -004948 | -004390 | -003886 | 77 |
| 78 | -005426 | . 004816 | -004265 | '003768 | 78 |
| 79 | -005291 | -004688 | $\cdot 004143$ | -003654 | 79 |
| 80 | .005161 | . 004564 | -004026 | -003543 | 80 |
| 81 | $\bigcirc 005034$ | -004444 | -003912 | '003437 | $8 \mathrm{8r}$ |
| 82 | -004911 | -004327 | -003803 | -003334 | 82 |
| 83 | -004792 | -004214 | -003696 | .003234 | 83 |
| 84 | $\cdot 004676$ | .004104 | -003593 | -003137 | 84 |
| 85 | -004563 | -003998 | -003493 | -003044 | 85 |
| 86 | -004454 | -003895 | -003396 | -002954 | 86 |
| 87 | $\cdot 004348$ | -003795 | .003303 | -002867 | 87 |
| 88 | $\bigcirc 004244$ | -003697 | $\cdot 003212$ | $\cdot 002782$ | 88 |
| 89 | . 0004144 | -003603 | .003124 | -002700 | 89 |
| 90 | -004046 | .003511 | .003038 | -002621 | 90 |
| 91 | -003951 | -003422 | .002955 | -002545 | 91 |
| 92 | -003859 | .003336 | -002875 | -002470 | 92 |
| 93 | -003769 | -003252 | -002797 | -002399 | 93 |
| 94 | -003681 | .003170 | .002721 | -002329 | 94 |
| 95 | -003596 | -003091 | -002648 | . 002261 | 95 |
| 96 | .003513 | -003014 | -002577 | -002196 | 96 |
| 97 | -003432 | -002939 | $\cdot 002507$ | . 002133 | 97 |
| 98 | -003354 | -002866 | -002440 | -002071 | 98 |
| 99 | -003277 | -002795 | -002375 | .002012 | 99 |
| 100 | -003203 | -002726 | '002312 | .001954 | 100 |



For explanation see pp. 16, 17

| Years | $3 \%$ | $3 \frac{1}{4} \%$ | $3 \frac{1}{2} \%$ | $3 \frac{3}{4} \%$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | -008534 | -007908 | .007322 | $\cdot 006772$ | 51 |
| 52 | -008217 | -007601 | -007024 | . 006485 | 52 |
| 53 | -007915 | -007308 | -006741 | -006212 | 53 |
| 54 | -007626 | -007028 | -006471 | -005952 | 54 |
| 55 | -007349 | $\cdot 006761$ | -006213 | .005704 | 55 |
| 56 | -007085 | -006506 | .005967 | -005468 | 56 |
| 57 | .00683I | -006261 | -005732 | $\cdot 005242$ | 57 |
| 58 | '006588 | -006028 | -005508 | -005028 | 58 |
| 59 | -006356 | -005804 | $\cdot 005294$ | ${ }^{\circ} 004822$ | 59 |
| 60 | -006I33 | -005590 | -005089 | -004627 | 60 |
| 6 r | -005919 | -005385 | . 004892 | '004440 | 61 |
| 62 | -005714 | -005I88 | -004705 | .004261 | 62 |
| 63 | -005517 | -005000 | . 004525 | -004090 | 63 |
| 64 | -005328 | $\cdot 004819$ | -004353 | -003927 | 64 |
| 65 | -005146 | ${ }^{\circ} 004646$ | -004188 | -003771 | 65 |
| 66 | -004971 | -004479 | .004030 | -003621 | 66 |
| 67 | -004803 | -004320 | -003879 | -003478 | 67 |
| 68 | -004642 | -004166 | -003734 | .003341 | 68 |
| 69 | -004486 | $\cdot 004019$ | .003595 | -003210 | 69 |
| 70 | -004337 | -003877 | -003461 | -003085 | 70 |
| 71 | -004193 | -003741 | -003333 | $\bigcirc 002964$ | 71 |
| 72 | . 004054 | -003610 | -003210 | $\bigcirc 002849$ | 72 |
| 73 | .003921 | -003484 | .003092 | . 002738 | 73 |
| 74 | . 003792 | -003363 | .002978 | $\bigcirc 002633$ | 74 |
| 75 | .003668 | -003247 | -002869 | .002531 | 75 |
| 76 | -003548 | -003135 | $\cdot 002764$ | .002434 | 76 |
| 77 | -003433 | -003027 | .002664 | $\cdot 002340$ | 77 |
| 78 | -003322 | $\cdot 002923$ | $\bigcirc 002567$ | -002250 | 78 |
| 79 | -003215 | -002823 | .002474 | .002164 | 79 |
| 80 | -003112 | -002727 | -002385 | .002082 | 80 |
| 81 | -003012 | -002634 | -002299 | .002003 | 81 |
| 82 | -002916 | -002545 | $\cdot 002216$ | -001926 | 82 |
| 83 | -002823 | -002459 | $\cdot 002137$ | -001853 | 83 |
| 84 | -002733 | -002376 | .002060 | -001783 | 84 |
| 85 | -002647 | -002295 | -001987 | .001716 | 85 |
| 86 | -002563 | '002218 | -001916 | -001651 | 86 |
| 87 | $\cdot 002482$ | -002144 | -001848 | -001589 | 87 |
| 88 | '002404 | $\cdot 002072$ | -001782 | -001529 | 88 |
| 89 | -002329 | -002003 | .001719 | . 001472 | 89 |
| 90 | '002256 | -001936 | -001658 | -001416 | 90 |
| 9 I | .002185 | -001872 | -601599 | -001363 | 91 |
| 92 | . 002117 | -001809 | -001543 | -001312 | 92 |
| 93 | . 002051 | -001749 | . 001488 | -001263 | 93 |
| 94 | -01987 | -001691 | COI436 | . 0121216 | 94 |
| 95 | -001926 | -001635 | -OOI 385 | -001171 | 95 |
| 96 | .001866 | -001582 | -001337 | -001127 | 96 |
| 97 | .001809 | -001529 | $\bigcirc 001290$ | -001085 | 97 |
| 98 | -001753 | -001479 | -001245 | -001045 | 98 |
| 99 | -001699 | -OOI430 | - 001201 | . 001006 | 99 |
| 100 | -001647 | .001384 | -001159 | -000969 | 100 |


| sinking fund for the repayment of loans |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $4 \%$ | $4 \frac{1}{4} \%$ | 412\% | $5 \%$ | Years |
| 1 | 1.000000 | 1 1.000000 | 1 1000000 | 1 1.000000 | 1 |
| 2 | -490196 | 489596 <br> . | 4888997 | -487805 | 2 |
| 3 | -320349 | - 3125959 | $\cdot \cdot 318773$ | -317209 | 3 |
| 5 | .235490 -184627 | $\cdot 234615$ $\cdot$ $\cdot 183707$ | - 233744 | -232012 | 4 5 |
| 6 | - 150762 | -149817 | -148878 | - 147017 | 6 |
| 7 | -126610 | -125652 | -124701 | -122820 | 7 |
| 9 | $\cdots$ | -107565 | -106609 | -104722 | 8 |
| 10 | -083291 | -082330 | -081379 | -79505 | 10 |
| 11 | -74149 | -073193 | $\cdot 072248$ | -70389 | 11 |
| 12 | -66655 | -665603 | -064666 | -062825 | 12 |
| 13 | ${ }^{-} \mathbf{0} 6054644$ | -059203 | -058275 | -056456 | 13 |
| 14 15 | -054669 | -053738 | -052820 | -051024 | $\begin{array}{r}14 \\ 15 \\ \hline\end{array}$ |
| 16 | -045820 | -044910 | -044015 | -042270 | 16 |
| 17 | -422999 | -041300 | 040418 | -038699 | 17 |
| 18 | -038993 | -038107 | -37237 | $\bigcirc 35546$ | 18 |
| 19 20 | -036139 | -035264 $\cdot 032720$ | 034407 .031876 | ${ }^{\circ} \mathrm{O} 032745$ | 19 20 |
| 2 I | -031280 | -030431 | -029601 | -027996 | 2 L |
| 22 | -029199 | -028362 | -027546 | -025971 | 22 |
| 23 | $\bigcirc 027309$ | -226486 | -025682 | -224137 | 23 |
| 24 | -025587 | -024776 | -023987 | $\bigcirc \cdot 22475$ | 24 |
| 25 | -024012 | -23215 | -022439 | -020952 | 25 |
| 26 | -022567 | -021783 | -221021 | -019564 | 26 |
| 27 <br> 28 | -021239 | -020467 | -0187219 | -018292 | 27 <br> 28 |
| 29 | -2018880 | -1925 | -018521 | -017123 | 28 29 |
| 30 | -017830 | -17098 | -016392 | -015051 | 30 |
| 31 | -016855 | -016137 | -015443 | -014132 | 31 |
| 32 33 | -015949 | -015243 | -101563 | -13280 | 32 |
| 33 <br> 34 | -015104 | -014411 | -013745 | -12490 | 33 |
| 34 <br> 35 | -013577 | -113635 | -012982 | -111755 | 34 |
| 35 | - 013577 | '012950 | -012270 | -011072 | 35 |
| 36 | -012887 | -012232 | -11606 | -10434 | 36 |
| 37 <br> 38 | -012240 | . 01115978 | -110984 | $\cdots 009840$ | 37 <br> 8 |
| 39 | - 011065 | -01044 | -009856 | -009284 | 38 39 |
| 40 | -010523 | -009918 | -009343 | -008278 | 39 40 |
| 4 4 | -010017 | $\bigcirc 009424$ | -008862 | -007822 | 41 |
| 42 | -009540 | -008959 | -008409 | -007395 | 42 |
| 43 | -009096 | -008521 | -007982 | -006993 | 43 44 |
| 45 | -008262 | ${ }^{-00871717}$ | $\begin{aligned} & 00758 \mathrm{II} \\ & \hline 07202 \end{aligned}$ | ${ }^{-} \mathbf{0} 06662626$ | 4 |
| 46 | -007882 | -007348 | -006845 | -005928 | 46 |
| 47 | -007522 | -0069999 | -006507 | . 0056514 | 47 |
| 49 | -006857 | . 006356 | -005887 | $\bigcirc 005040$ | 49 |
| 50 | -006550 | -006060 | -005602 | -004777 | 50 |

[^3]
## SINKING FUND FOR THE REPAYMENT OF LOANS

| Years | $4 \%$ | $4 \frac{1}{4} \%$ | $4 \frac{1}{2} \%$ | $5 \%$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | $\bigcirc 006259$ | -005779 | -005332 | .004529 | 51 |
| 52 | -005982 | -005513 | -005077 | -004295 | 52 |
| 53 | -005719 | -00526I | $\cdot 004835$ | -004073 | 53 |
| 54 | -005469 | -005021 | $\cdot 004605$ | -003864 | 54 |
| 55 | -005231 | -004793 | -004388 | -003667 | 55 |
| 56 | -005005 | -004577 | -004181 | -003480 | 56 |
| 57 | -004789 | .004371 | -003985 | -003303 | 57 |
| 58 | ${ }^{\circ} \mathrm{O} 04584$ | -004175 | -003799 | -003136 | 58 |
| 59 | $\bigcirc 004388$ | -003989 | -003622 | -002978 | 59 |
| 60 | -004202 | -003812 | -003454 | -002828 | 60 |
| 61 | -004024 | -003643 | -003295 | -002686 | 61 |
| 62 | .003854 | -003482 | -003143 | -002552 | 62 |
| 63 | -003692 | -003329 | -002998 | -002424 | 63 |
| 64 | . 003538 | -003183 | -00286I | ${ }^{0} 0233^{4} 4$ | 64 |
| 65 | -003390 | '003044 | -002730 | -002189 | 65 |
| 66 | '003249 | -002912 | -002606 | . 002081 | 66 |
| 67 | .003115 | -002785 | -002488 | -001978 | 67 |
| 68 | -002986 | $\cdot 002665$ | -002375 | -001880 | 68 |
| 69 | . 002863 | -002549 | -002267 | -001787 | 69 |
| 70 | -002745 | -002440 | -002165 | -001699 | 70 |
| 71 | .002633 | -002335 | -002068 | -001616 | 71 |
| 72 | -002525 | $\bigcirc 002234$ | .001975 | . 01536 | 72 |
| 73 | -002422 | -002139 | -001886 | - 0121461 | 73 |
| 74 | -002323 | -002047 | - 001802 | - O - 1390 | 74 |
| 75 | '002229 | -001960 | -001721 | -001322 | 75 |
| 76 | . 002139 | -001877 | -001644 | -001257 | 76 |
| 77 | .002052 | -001797 | -001571 | -001196 | 77 |
| 78 | -001969 | $\bigcirc 001721$ | -001501 | -01138 | 78 |
| 79 | -01890 | $\bigcirc 001648$ | -001434 | -001082 | 79 80 |
| 80 | -001814 | -001578 | -001371 | -001030 | 80 |
| 81 | .001741 | . 001511 | -001310 | -000980 | 81 |
| 82 | .001672 | -001448 | - 001252 | $\cdot 000932$ | 82 |
| 83 | .001605 | -001387 | -001 197 | -000887 | 83 |
| 84 | -00154 | -001329 | -001144 | $\cdot{ }^{\circ} 000844$ | 84 |
| 85 | . 01479 | -001273 | -001093 | $\cdot 000803$ | 85 |
| 86 | . 01420 | -001219 | -001045 | -000764 | 86 |
| 87 | -001364 | -001168 | -000999 | -000727 | 87 |
| 88 | -001310 | -001119 | -000955 | -000692 | 88 |
| 89 | -001258 | -001073 | -000913 | $\cdot 000659$ | 89 |
| 90 | -001208 | '001028 | -000873 | -000627 | 90 |
| 91 | . 01160 | -000985 | -000835 | -000597 | 91 |
| 92 | -01114 | -000944 | -000798 | -000568 | 92 |
| 93 | -001070 | -000905 | $\cdot 000763$ | -000541 | 93 |
| 94 | -001028 | -000867 | -000730 | . 0000515 | 94 |
| 95 | $\cdot 000987$ | -000831 | -000698 | -000490 | 95 |
| 96 | -000949 | .000796 | -000667 | . 000466 | 96 |
| 97 | -00091 1 | -000763 | -000638 | -000444 | 97 |
| 98 | .000875 | -000732 | -000610 | -000423 | 98 |
| 99 | '00084I | -000701 | .000584 | . 000402 | 99 |
| 100 | '000808 | $\cdot 000672$ | '000558 | . 000383 | 100 |


| SINEING FOND FOR THE REPAYMENT OF LOANS |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $6 \%$ | $7 \%$ | 8\% | 10\% | Yeann |
| 1 | 1.000000 | I 000000 | 1000000 | I 000000 | 1 |
| 2 | -485437 | 483092 | -480769 | -476190 | 2 |
| 3 | -314110 | -311052 | -308033 | -302115 | 3 |
| 4 | -228591 | -225228 | -221921 | -21547I | 4 |
| 5 | -177396 | -173891 | -170456 | -163798 | 5 |
| 6 | -143363 | - 139796 | -136315 | - 529607 | 6 |
| 7 | -119135 $\cdot 101036$ | -115553 | -II2072 | $\begin{array}{r}\text {-105406 } \\ \cdot \\ \hline 087444\end{array}$ | 7 |
| 9 | .087022 | -083486 | -080079 | . 07364 I | 9 |
| 10 | -075868 | -072377 | -069029 | .062745 | 10 |
| 11 | -066793 | -063357 | -060076 | -053963 | 11 |
| 12 | -059277 | . 055902 | -052695 | $\cdot 046763$ | 12 |
| 13 | -052960 | -049651 | -046522 | -040779 | 13 |
| 14 | -047585 | -044345 | . 041297 | -035746 | 14 |
| 15 | . 042963 | -039795 | -036829 | -031474 | 15 |
| 16 | -038952 | -035858 | -032977 | -027817 | 16 |
| 17 | -035445 | -032425 | -029629 | -024664 | 17 |
| 18 | -032357 | -029413 | -026702 | -021930 | 18 |
| 19 | -029621 | -026753 | -024128 | - 019547 | 19 |
| 20 | -027185 | '024393 | -021852 | -017460 | 20 |
| 21 | . 025005 | -022289 | -019832 | - 015624 | 21 |
| 22 | -023046 | -020406 | -018032 | - 014005 | 22 |
| 23 | -021278 | -018714 | -16422 | -012572 | 23 |
| 24 | -019679 | -17189 | ${ }^{\circ} \mathrm{OI} 4978$ | - 111300 | 24 |
| 25 | -018227 | -01581I | -013679 | -OIOI68 | 25 |
| 26 | - 016904 | - 014561 | -012507 | -009159 | 26 |
| 27 | - 015697 | - 013426 | -11448 | -008258 | 27 |
| 28 | - 014593 | - 012392 | -010489 | -007451 | 28 |
| 29 | - 013580 | - 111449 | -009618 | -006728 | 29 |
| 30 | - 012649 | -010586 | -008827 | -006079 | 30 |
| 31 | - 11792 | -009797 | -008107 | . 005496 | 31 |
| 32 | -011002 | -009073 | . 007451 | . 004972 | 32 |
| 33 | -010273 | . 008408 | $\cdot 006852$ | -004499 | 33 |
| 34 35 | .009598 | -007797 | . 0068304 | . 004074 | 34 |
| 35 | .008974 | -007234 | -005803 | -003689 | 35 |
| 36 | -008395 | -006715 | -005345 | -003343 | 36 |
|  | -007857 | . 006237 | -004924 | -003030 | 37 |
| 38 | .007358 | . 005795 | -004539 | -002747 | 38 |
| 39 | ${ }^{.} .006894$ | . 005387 | -004185 | -002491 | 39 |
| 40 | -006462 | '005009 | -003860 | . 002259 | 40 |
| 4 I | -006059 | ${ }^{\circ} \mathrm{O} 04660$ | -003562 | -002050 | 41 |
| 42 | .005683 | . 004336 | -003287 | . 001860 | 42 |
| 43 | . 005333 | . 004036 | -003034 | -001688 | 43 |
| 44 | . 005006 | -003758 | -002802 | -001532 | 44 |
| 45 | -004701 | -003499 | -002587 | -001391 | 45 |
| 46 | . 004415 | . 003260 | . 002390 | .001263 | 46 |
| 47 | -004148 | .003037 | -002208 | -001147 | 47 |
| 48 | .003898 | . 002831 | . 002020 | -001041 | 48 |
| 49 50 | .003664 | -002639 | - 0 OI886 | $\cdot 000946$ | 49 |
| 50 | -003444 | . 002460 | . 001743 | -000859 | 50 |

For explanation see pp. 16, 17

SINRING FUND FOR THE REPAYMENT OF LOANS

| Years | $6 \%$ | $7 \%$ | $8 \%$ | $10 \%$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | .003239 | -002294 | -0016II | $\cdot 000780$ | 51 |
| 52 | .003046 | -002139 | -001490 | -000709 | 52 |
| 53 | -002866 | -001995 | -001377 | -000644 | 53 |
| 54 | -002696 | . 001861 | -001274 | . 000585 | 54 |
| 55 | . 002537 | . 001736 | $\cdot 001178$ | . 000532 | 55 |
| 56 | -002388 | . 001620 | .001090 | . 000483 | 56 |
| 57 | . 002247 | .001512 | -001008 | $\cdot 000439$ | 57 |
| 58 | -0021 16 | . 001411 | -000932 | -000399 | 58 |
| 59 | -001992 | -001317 | -000862 | -000363 | 59 |
| 60 | -001876 | - 001229 | -000798 | -000329 | 60 |
| 61 | .001766 | . 011147 | -000738 | -000299 | 61 |
| 62 | -001664 | $\cdot 001071$ | .000683 | -000272 | 62 |
| 63 | .001567 | -001000 | -000632 | -000247 | 63 |
| 64 | .001476 | -000934 | -000585 | .000225 | 64 |
| 65 | .001391 | -000872 | ,000541 | -000204 | 65 |
| 66 | .001310 | .000814 | -000501 | . 000186 | 66 |
| 67 | -001235 | -000760 | -000464 | .000169 | 67 |
| 68 | .001163 | -000710 | -000429 | -000153 | 68 |
| 69 | -001096 | -000663 | . 000397 | -000139 | 69 |
| 70 | -01033 | -000620 | -000368 | .000127 | 70 |
| 71 | -000974 | -000579 | -000340 | .000115 | 71 |
| 72 | -000918 | .000541 | -000315 | .000105 | 72 |
| 73 | .000865 | -000505 | -000292 | $\cdot 000095$ | 73 |
| 74 | -0008r5 | ${ }^{\circ} 000472$ | '000270 | -000086 | 74 |
| 75 | -000769 | -000441 | . 000250 | -000079 | 75 |
| 76 | -000725 | -000412 | -000231 | .000072 | 76 |
| 77 | . 000683 | -000385 | .000214 | .000065 | 77 |
| 78 | -000644 | -000359 | -000198 | . 000059 | 78 |
| 79 | -000607 | -000336 | -000183 | $\cdot 000054$ | 79 |
| 80 | . 000573 | -000314 | -000170 | -000049 | 80 |
| 81 | -000540 | -000293 | .000157 | .000044 | 8 I |
| 82 | -000509 | .000274 | -000146 | -000040 | 82 |
| 83 | -000480 | .000256 | -000135 | . 000037 | 83 |
| 84 | . 000453 | . 000239 | -000125 | -000033 | 84 |
| 85 | .000427 | -000223 | . 000116 | -000030 | 85 |
| 86 | . 000402 | -000209 | -000107 | .000028 | 86 |
| 87 | -000380 | .000195 | -000099 | .000025 | 87 |
| 88 | -000358 | -000182 | -000092 | .000023 | 88 |
| 89 | -000338 | .000170 | -000085 | -00002 1 | 89 |
| 90 | .000318 | .000159 | . 000079 | -000019 | 90 |
| 91 | .000300 | .000149 | -000073 | -000017 | 91 |
| 92 | -000283 | -000139 | -000067 | . 000015 | 92 |
| 93 | -000267 | -000130 | -000062 | -000014 | 93 |
| 94 | -000252 | -000121 | -000058 | -000013 | 94 |
| 95 | . 000238 | -000113 | -000053 | -000012 | 95 |
| 96 | .000224 | .000106 | -000049 | .000011 | 96 |
| 97 | .0002 11 | -000099 | -000046 | .000010 | 97 |
| 98 | -000199 | -000092 | -000042 | -000009 | 98 |
| 99 | -000188 | -000086 | $\cdot 000039$ | -000008 | 99 |
| 100 | ,000177 | -00008I | -000036 | -000007 | 100 |


| Value of an Annuity Yielding Interest on Capital at 3 and 32 PER CENT., and Replacing Capital when Invested at Lower Rates |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Yrs. | $3 \& 2 \%$ | $3 \& 2 \frac{1}{2} \%$ | 31 $22 \%$ | $3 \frac{1}{2} \& 2 \frac{1}{2} \%$ | $3 \frac{1}{2} \& 3 \%$ | S8. |
| 1 | $\cdot 97087$ | $\cdot 97087$ | -96618 | -96618 | -96618 | 1 |
| 2 | I.90458 | 1.90903 | I-88662 | 1-89098 | I.89534 | 2 |
| 3 | 2.80304 | 2.81582 | 2.76430 | $2 \cdot 77672$ | $2 \cdot 78916$ | 3 |
| 4 | $3 \cdot 66806$ | $3 \cdot 69252$ | 3.60200 | 3.62558 | $3 \cdot 64928$ | 4 |
| 5 | $4 \cdot 50129$ | 4.54036 | 4.40221 | 4.43957 | 4.47719 | 5 |
| 6 | $5 \cdot 30431$ | $5 \cdot 36050$ | 5•16727 | $5 \cdot 22057$ | $5 \cdot 27433$ | 6 |
| 7 | $6 \cdot 07858$ | $6 \cdot 15402$ | $5 \cdot 89929$ | 5.97031 | 6.04206 | 7 |
| 8 | 6.82548 | $6 \cdot 92198$ | $6 \cdot 60023$ | $6 \cdot 68991$ | $6 \cdot 78167$ | 8 |
| 9 | $7 \cdot 54629$ | $7 \cdot 66537$ | $7 \cdot 27191$ | $7 \cdot 38242$ | 7.49435 | 9 |
| I0 | 8.24222 | $8 \cdot 38513$ | 791599 | 8.04772 | 8-18126 | 10 |
| 11 | $8 \cdot 91441$ | 9.08216 | 8.53403 | $8 \cdot 68765$ | 8.84349 | 1 |
| 12 | $9 \cdot 56392$ | 9.75732 | $9 \cdot 12745$ | 9.30344 | 9.48208 | 12 |
| 13 | 10.19177 | 10.41143 | 9.69759 | $9 \cdot 89626$ | 10.09800 | 13 |
| 14 | 10•79891 | 11.04526 | 10. 24569 | 10.46720 | $10 \cdot 69217$ | 14 |
| 15 | 11.38628 | 11 65957 | $10 \cdot 77291$ | 11.01729 | 11.26550 | 15 |
| 16 | II•95455 | $12.255^{\circ} 5$ | 11.28030 | 11.54748 | 11.81881 | 16 |
| 17 | 12.50471 | 12.83239 | I 1-76881 | 12.05869 | 12.35292 | 17 |
| 18 | 13.03745 | 13.39224 | $12 \cdot 23958$ | 12.55176 | 12.86857 | 18 |
| 19 | 13.55348 | 13.93522 | 12.69329 | 13.02751 | 13.36650 | 19 |
| 20 | 14.05349 | 14.46192 | $13 \cdot 13082$ | 13.48670 | 13.84740 | 20 |
| 21 | 14.53810 | 14.97290 | 13.55293 | 13.93003 | 14.31193 | 2 I |
| 22 | 15.00794 | 15.46872 | 13.96036 | 14.35820 | 14.76071 | 22 |
| 23 | 15.46357 | 15.94988 | 14.35377 | 14.77184 | $15 \cdot 19436$ | 23 |
| 24 | 15.90556 | 16.41690 | 14.73381 | $15 \cdot 17155$ | 15.61343 | 24 |
| 25 | 16.33441 | $16 \cdot 87025$ | $15 \cdot 10108$ | 15.55792 | $16 \cdot 01848$ | 25 |
| 26 | 16.75063 | 17.31040 | 15.45613 | 15.93150 | 16.41004 | 26 |
| 27 | 17.15469 | 17.73777 | 15.79951 | 16.29278 | 16.78860 | 27 |
| 28 | 17.54704 | 18.15279 | 16.13172 | $16 \cdot 64227$ | 17.15465 | 28 |
| 29 | 17.92810 | $18 \cdot 55588$ | 16.45322 | 16.98045 | 17.50864 | 29 |
| 30 | 18.29828 | 18.94742 | $16 \cdot 76448$ | 17.30773 | 17.85100 | 30 |
| 31 | 18.65799 | 19.32778 | 17.06591 | 17.62456 | $18 \cdot 18217$ | 3I |
| 32 | 19.00757 | 19.69733 | 17.35791 | 17.93133 | $18 \cdot 50254$ | 32 |
| 33 | 19.34740 | 20.05640 | 17.64087 | 18.22842 | 18.81251 | 33 |
| 34 | $19.677{ }^{1}$ | $20 \cdot 40535$ | 17.91515 | 18.51620 | 19.11243 | 34 |
| 35 | 19.99912 | 20.74448 | 18.18109 | 18.79502 | 19.40267 | 35 |
| 36 | 20.31164 | $2 \mathrm{I} \cdot 07412$ | 18.43900 | 19.06523 | 19.68357 | 36 |
| 37 | $20 \cdot 61567$ | $2 \mathrm{I} \cdot 39454$ | $18 \cdot 68922$ | 19.32707 | 19.95545 | 37 |
| 38 | 20.91150 | 21.70604 | 18.93202 | 19.58092 | $20 \cdot 21863$ | 38 |
| 39 | 21-19940 | 22.00890 | 19.16768 | 19.82705 | 20.47340 | 39 |
| 40 | 21.47962 | $22 \cdot 30339$ | 19.39648 | 20.06572 | 20.72007 | 40 |
| 41 | 21.75243 | 22.58975 | 19.61866 | $20 \cdot 29721$ | 20.95891 | 4 I |
| 42 | 22.01804 | $22 \cdot 86825$ | 19.83446 | 20.52200 | 21-19018 | 42 |
| 43 | 22.2767 I | 23.13910 | 20.04412 | 20.73962 | 21.41414 | 43 |
| 44 | 22.52864 | 23.40256 | $20 \cdot 24786$ | 20.95102 | 21.63105 | 44 |
| 45 | 22.77405 | $23 \cdot 65883$ | 20.44588 | 21.15618 | $2 \mathrm{I} \cdot 84113$ | 45 |
| 46 | 23.01315 | 23.90814 | 20.63838 | $21 \cdot 35531$ | 22.04462 | 46 |
| 47 | 23.24613 | $24 \cdot 15069$ | $20 \cdot 82556$ | $2 \mathrm{I} \cdot 54862$ | 22.24174 | 47 |
| 48 | 23.47317 | 24.38668 | $2 \mathrm{I} \cdot 00759$ | 21.73630 | 22.43270 | 48 |
| 49 | 23.69446 | 24.61630 | 21•18466 | $22 \cdot 09863$ | 22.61771 | 49 |
| 50 | 23'91017 | 24.83975 | 21.35693 | 22.09569 | 22.79696 | 50 |

For explanation see p. I8

## Value of an Annuity Yielding Interest on Capital at 3 and $3 \frac{1}{2}$ PER CENT., and Replacing Capital when Invested at Lower Rates

| Yrs. | $3 \& 2 \%$ | $3 \& 2 \frac{1}{2} \%$ | $3 \frac{1}{2} \& 2 \%$ | $3 \frac{1}{2} \& 2 \frac{1}{2} \%$ | $3 \frac{1}{2} \& 3 \%$ | Yrs. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | $24 \cdot 12044$ | 25.05719 | 21.52456 | $22 \cdot 26740$ | 22.97064 | 51 |
| 52 | 24.32552 | $25 \cdot 26882$ | 21.68770 | 22.42437 | 23.13894 | 52 |
| 53 | 24.52548 | 25.47479 | 21.84650 | $22 \cdot 59657$ | 23.30203 | 53 |
| 54 | 24.72049 | 25.67527 | 22.00110 | 22.75417 | 23.46009 | 54 |
| 55 | 24.9107 I | 25.87041 | $22 \cdot 15164$ | 22.90731 | $23 \cdot 61327$ | 55 |
| 56 | 25.09626 | 26.06038 | 22.29825 | 23.05612 | 23.76173 | 56 |
| 57 | 25.27729 | 26.24531 | 22.44105 | 23.20076 | 23.90563 | 57 |
| 58 | 25.45392 | 26.42536 | 22.58016 | 23.34134 | 24.04512 | 58 |
| 59 | 25.62628 | $26 \cdot 60065$ | $22 \cdot 71569$ | 23.47800 | $24 \cdot 18033$ | 59 |
| 60 | 25.79449 | 26.77133 | 22.84776 | 23.61086 | 24.31140 | 60 |
| 6 r | 25.95866 | 26.93751 | 22.97647 | 23.74003 | 24.43847 | 61 |
| 62 | $26 \cdot 11891$ | 27.09935 | 23.10193 | 23.86563 | 24.56167 | 62 |
| 63 | $26 \cdot 27535$ | $27 \cdot 25694$ | 23.22423 | 23.98777 | 24.68 III | 63 |
| 64 | 26.42807 | 27.41041 | 23.34346 | 24.10656 | 24.79691 | 64 |
| 65 | $26 \cdot 57719$ | $27 \cdot 55988$ | 23.45973 | 24.22209 | 24.90920 | 65 |
| 66 | 26.72280 | 27.70545 | 23.57311 | 24.33446 | 25.01807 | 66 |
| 67 | 26.86500 | $27 \cdot 84723$ | 23.68369 | 24.44377 | $25 \cdot 12365$ | 67 |
| 68 | $27 \cdot 00387$ | 27.98533 | 23.79155 | 24.55012 | 25.22603 | 68 |
| 69 | $27 \cdot 13951$ | $28 \cdot 11985$ | 23.89677 | 24.65358 | 25.32532 | 69 |
| 70 | 27.27200 | 28.25089 | 23.99943 | 24.75424 | 25.42160 | 70 |
| 7 7 | 27.40142 | $28 \cdot 37853$ | 24.09960 | 24.85219 | 25.51498 | 7 r |
| 72 | $27 \cdot 52786$ | $28 \cdot 50289$ | $24 \cdot 19720$ | 24.94751 | 25.60554 | 72 |
| 73 | 27.65140 | 28.62403 | 24.29275 | 25.04027 | 25.69338 | 73 |
| 74 | 27.77210 | 28.74206 | 24.38587 | $25 \cdot 13054$ | 25.77857 | 74 |
| 75 | $27 \cdot 89005$ | 28.85705 | 24.47676 | 25.21840 | 25.86120 | 75 |
| 76 | 28.00531 | 28.96908 | 24.56549 | 25.30392 | 25.94135 | 76 |
| 77 | $28 \cdot 11795$ | 29.07825 | 24.65212 | 25.38717 | 26.01910 | 77 |
| 78 | $28 \cdot 22805$ | $29 \cdot 18461$ | 24.73670 | 25.46821 | 26.09451 | 78 |
| 79 | 28.33565 | $29 \cdot 28826$ | 24.81930 | 25.54710 | $26 \cdot 16766$ | 79 |
| 80 | 28.44084 | 29.38925 | 24.89996 | 25.62391 | 26.23863 |  |
| 81 | 28.54366 | 29.48767 | 24.97874 | 25.69869 | $26 \cdot 30747$ |  |
| 82 | 28.64418 | 29.58357 | 25.05568 | 25.77151 | 26.37425 | 82 |
| 83 | 28.74245 | 29.67704 | $25 \cdot 13085$ | 25.84241 | 26.43905 | 83 |
| 84 | 28.83854 | 29.76812 | $25 \cdot 20427$ | 25.91145 | $26 \cdot 50191$ | 84 |
| 85 | 28.93249 | 29.85689 | 25.27601 | 25.98104 | 26.56289 | 85 |
| 86 | 29.02436 | 29.94341 | 25.34609 | 26.04416 | $26 \cdot 62206$ | 86 |
| 87 | 29.11420 | 30.02773 | 25.41458 | $26 \cdot 10792$ | $26 \cdot 67946$ | 87 |
| 88 | 29.20206 | $30 \cdot 10991$ | 25.48 I 50 | $26 \cdot 17003$ | 26.73516 | 88 |
| 89 | 29.28798 | $30 \cdot 19002$ | 25.54689 | 26.23052 | 26.78920 | 89 |
| 90 | 29.37201 | $30 \cdot 26809$ | 25:61081 | $26 \cdot 28944$ | 26.84163 | 90 |
| 91 | 29.45420 | 30.34420 | 25.67327 | $26 \cdot 34683$ | $26 \cdot 89251$ | 9 I |
| 92 | 29.53460 | 30.41838 | 25.73433 | 26.40274 | 26.94187 | 92 |
| 93 | 29.61324 | 30.49069 | 25.79402 | 26.45720 | 26.98977 | 93 |
| 94 | 29.69017 | $30 \cdot 56117$ | 25.85236 | $26 \cdot 51025$ | 27.03625 | 94 |
| 95 | 29.76543 | $30 \cdot 62988$ | 25.90940 | $26 \cdot 56194$ | 27.08191 | 95 |
| 96 | 29.83905 | 30.69686 | 25.96517 | $26 \cdot 61229$ | 27-12512 | 96 |
| 97 | 29.91108 | 30.76216 | 26.01970 | $26 \cdot 66135$ | $27 \cdot 16759$ | 97 |
| 98 | 29.98156 | $30 \cdot 82582$ | 26.07301 | $26 \cdot 70916$ | 27.20880 | 98 |
| 99 | 30.05052 | $30 \cdot 88787$ | $26 \cdot 12515$ | $26 \cdot 75573$ | 27.24880 | 99 |
| 100 | $30 \cdot 11799$ | 30.94837 | 26.17613 | 26.8011 1 | 27.28761 | 100 |


| Value of an Annuity Yielding Interest on Capital at 4 PER CENT., and Replacing Capital when Invested at |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | 2\% | $2 \frac{1}{2} \%$ | $3 \%$ | 3 $\frac{1}{2}$ | Years |
| 1 | . 96153 | .96153 | . 96153 | .96153 ¢ 88888 | 1 |
| 2 | I. 86898 | 1.87326 | 1.87754 | I 888 r 82 | 2 |
| 3 | $2 \cdot 72662$ | $2 \cdot 73870$ | 2.75080 | $2 \cdot 76294$ | 3 |
| 4 | $3 \cdot 53827$ | 3.56103 | $3 \cdot 58388$ | 3.60684 | 4 |
| 5 | 4.30740 | 4.34316 | 4.37916 | 4.41538 | 5 |
| 6 | 5.03713 | $5 \cdot 08777$ | 5.13881 | 5-19027 | 6 |
| 7 8 | 5.73026 6.38938 | 5.79725 6.47386 | 5.86488 | 5.93315 6.64555 | 7 |
| 8 | 6.38938 7.01678 | 6.47386 $7 \cdot 11962$ | 6.55925 7.22367 | 6.64555 7.32891 | 8 |
| 10 | 7.61514 | 7 7 73641 | 7.22367 7.85975 | 7.98458 | 9 10 |
| 11 | 8.18478 | $8 \cdot 32598$ | 8.46902 | 8.61390 | II |
| 12 | $8 \cdot 72908$ | 8.88990 | $9 \cdot 05288$ | 9.21562 | 12 |
| 13 | 9.24912 | 9.42967 | 9.65265 | 9'79801 | 13 |
| 14 | 9.74640 | $9 \cdot 94663$ | 10.14957 | 10.35513 | 14 |
| 15 | 10.22229 | 10.44207 | $10 \cdot 66478$ | 10.89027 | 15 |
| 16 | $10 \cdot 67804$ | $10 \cdot 91715$ | 11.15936 | 11.40448 | 16 |
| 17 | II•II483 | $1 \mathrm{I} \cdot 37297$ | II 63433 | 11.89865 | 17 |
| 18 | II.53374 | 11.81055 | 12.09063 | 12.37366 | 18 |
| 19 | 11.93577 | 12.23083 | 12.52915 | 12.83033 | 19 |
| 20 | 12.32184 | 12.63470 | 12.95073 | 13.26945 | 20 |
| 2 I | 12.6928 I | 13.02298 | 13.35617 | 13.69177 | 2 x |
| 22 | 13.04948 | 13.39646 | 13.74620 | 14.09799 | 22 |
| 23 | 13.39260 | 13.75584 | $14 \cdot 12152$ | 14.48880 | 23 |
| 24 | 13.72286 | 14.10182 | 14.48280 | 14.86484 | 24 |
| 25 | 14.04091 | 14.43503 | 14.83066 | 15.22672 | 25 |
| 26 | 14.34736 | 14.75606 | 15.16569 | 15.57501 | 26 |
| 27 | 14.64277 | 15.06549 | 15.48846 | 15.91029 | 27 |
| 28 | 14.92767 | 15.36383 | 15.79948 | 16.23307 | 28 |
| 29 | 15.20257 | 15.65159 | 16.09926 | 16.54387 | 29 |
| 30 | 15.46792 | 15.92924 | 16.38827 | 16.84315 | 30 |
| 31 | 15\%72417 | 16.19722 | 16.66696 | 17.13138 | 31 |
| 32 | 15.97173 | 16.45594 | 16.93577 | 17.40901 | 32 |
| 33 | 16.21099 | 16.70582 | 17.19509 | 17.67646 | 33 |
| 34 | 16.44232 | 16.94721 | 17.44532 | 17.93411 | 34 |
| 35 | 16.66605 | 17•18048 | 17.68681 | 18.18236 | 35 |
| 36 | 16.88252 | 17.40597 | 17.91993 | 18.42158 | 36 |
| 37 | 17.09204 | 17.62397 | 18.14499 | 18.6521 I | 37 |
| 38 | 17.29488 | 17.83481 | 18.36232 | 18.87428 | 38 |
| 39 | 17.49134 | 18.03877 | 18.57222 | 19.08843 | 39 |
| 40 | 17.68167 | 18.23612 | 18.77498 | 19.29486 | 40 |
| 4 x | 17.86611 | 18.42711 | 18.97086 | 19.49385 | 41 |
| 42 | 18.04491 | 18.61201 | 19-16014 | 19.6857 I | 42 |
| 43 | 18.21828 | 18.79103 | 19.34307 | 19.87068 | 43 |
| 44 | 18.38643 | 18.96440 | 19.51987 | $20 \cdot 00000$ | 44 |
| 45 | 18.54957 | 19.13234 | 19.69078 | $20 \cdot 22104$ | 45 |
| 46 | 18.70788 | 19.29505 | 19.85603 | 20.38691 | 46 |
| 47 | 18.86154 | 19.45272 | 20.01580 | $20 \cdot 54688$ | 47 |
| 48 | 19.01074 | 19.60554 | 20•17032 | $20 \cdot 70116$ | 48 |
| 49 | 19.15563 19.29637 | 19.79522 | 20.31978 | 20.84998 | 49 |
| 50 | 19.29637 | 19.89731 | 20.46434 | 20.99354 | 50 |

For explanation see p. 18

## INTEREST TABLES

| Value of an Annuity Yielding Interest on Capital at 4 PER CENT., and Replacing Capital when Invested at |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $2 \%$ | $2 \frac{1}{2} \%$ | $3 \%$ | 312\% | Years |
| 51 | 19.433II | 20.03658 | 20.60419 | 21.13201 | 51 |
| 52 | 19.56599 | $20 \cdot 17364$ | 20.73949 | 21.26535 | 52 |
| 53 | 19.69515 | 20.3027 I | 20.87042 | 21.39449 | 53 |
| 54 | 19.82072 | 20.42985 | 20.99712 | 21.51884 | 54 |
| 55 | 19.9428 I | 20.5532 I | 21.11974 | $2 \mathrm{~L} \cdot 63883$ | 55 |
| 56 | $20 \cdot 06156$ | 20.67293 | 21.23842 | 21.75460 | 56 |
| 57 | 20.17707 | 20.78914 | 21.35331 | 21.8663 I | 57 |
| 58 | $20 \cdot 28946$ | 20.90194 | 21.47867 | 21.97411 | 58 |
| 59 | $20 \cdot 39882$ | 21.01146 21.1781 | 21.57221 | 22.07814 | 59 |
|  | $20 \cdot 50526$ | 25'IT781 | 21.67648 | $22 \cdot 17854$ | 60 |
| 61 | 20.60887 | 21.22108 | 21.77744 | 22.27544 | 61 |
| 62 | $20 \cdot 70975$ | 21.32139 | 21.87521 | 22.36896 | 62 |
| 63 | 20.80798 | 21.41882 | 21.96990 | 22.45923 | 63 |
| 64 | 20.90364 | 21-51348 | 22.06161 | 22.54635 | 64 |
| 65 | $20 \cdot 99683$ | 21.60544 | 22.15045 | 22.63045 | 65 |
| 66 | 21.08760 | 21.69480 | 22.23650 | 22.71163 | 66 |
| 67 | $21 \cdot 17605$ | 21.78165 | 22.31987 | 22.78999 | 67 |
| 68 | 21.26224 | 21.86605 | 22.40064 | 22.86563 | 68 |
| 69 | 21.34624 | 21.94808 | 22.47891 | 22.93866 | 69 |
| 70 | 21.42812 | $22 \cdot 02783$ | $22 \cdot 55472$ | 23.00916 | 70 |
| 71 | 21-50794 | $22 \cdot 10536$ | 22.62819 | 23.07722 | 71 |
| 72 | 21.58576 | $22 \cdot 18074$ | $22 \cdot 69939$ | $23 \cdot 14293$ | 72 |
| 73 | $2 \mathrm{~L} \cdot 66164$ | $22 \cdot 25403$ | 22.76839 | 23.20638 | 73 |
| 74 | $2 \mathrm{I} \cdot 73565$ | 22.32530 | 22.83527 | 23.26763 | 74 |
| 75 | $2 \mathrm{~L} \cdot 80783$ | 22.39462 | $22 \cdot 90008$ | 23.32677 | 75 |
| 76 | 21.87824 | 22.46204 | 22.96291 | 23.38388 | 76 |
| 77 | 21.94693 | 22.52761 | 23.02380 | 23.43902 | 77 |
| 78 | 22.01394 | 22.59140 | 23.08283 | 23.49226 | 78 |
| 79 | $22 \cdot 07933$ | 22.65345 | $23 \cdot 14006$ | 23.54367 | 79 |
| 80 | $22 \cdot 14314$ | 22.71383 | $23 \cdot 19553$ | 23.59331 | 80 |
| 81 | $22 \cdot 20542$ | $22 \cdot 77257$ | 23.24932 | 23.64125 | 81 |
| 82 | $22 \cdot 26620$ | 22.82973 | 23.30146 | 23.68755 | 82 |
| 83 | 22.32555 | $22 \cdot 88535$ | 23.35202 | 23.73225 | 83 |
| 84 | 22.38348 | 22.93947 | 23.40105 | 23.77542 | 84 |
| 85 | 22.44003 | 22.99215 | 23.44852 | 23.81711 | 85 |
| 86 | 22.49526 | 23.04342 | 23.49468 | 23.85737 | 86 |
| 87 | $22 \cdot 54918$ | 23.09333 | 23.53937 | 23.89626 | 87 |
| 88 | 22.60185 | 23.14191 | 23.58272 | 23.93381 | 88 |
| 89 | 22.65329 | $23 \cdot 18919$ | 23.62476 | 23.97008 | 89 |
| 90 | $22 \cdot 70353$ | 23.23523 | 23.66552 | 24.00510 | 90 |
| 91 | 22.75260 | 23.28005 | 23.70506 | 24.03893 | 91 |
| 92 | 22.80055 | 23.32369 | 23.74341 | 24.07160 | 92 |
| 93 | 22.84739 | 23.36618 | $23 \cdot 78061$ | $24 \cdot 10316$ | 93 |
| 94 | 22.89315 | 23.40755 | 23.81668 23.85168 | $24 \cdot 13364$ | 94 |
| 95 | $22 \cdot 93787$ | 23.44784 | 23.85168 | $24 \cdot 16307$ | 95 |
| 96 | 22.98157 | 23.48707 | 23.88562 | $24 \cdot 19151$ | 96 |
| 97 | 23.02427 | 23.52528 | 23.91854 | 24.21897 | 97 |
| 98 | 23.06601 | 23.56249 | 23.95049 | 24.24549 | 98 |
| 99 | $23 \cdot 10680$ | 23.59873 | 23.98147 | 24.27112 | 99 |
| 100 | $23 \cdot 14668$ | 23.63403 | 24 O1153 | 24.29586 | 100 |


| Value of an Anhuity Yielding Interest on Capital at 5 PER CENT, and Replacing Capital when Invested at |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | 2\% | $2 \frac{1}{2} \%$ | $3 \%$ | 31 \% | Years |
| 1 | $\cdot 95238$ | '95238 | '95238 | .95238 | 1 |
| 2 | 1.83469 | 1.83882 | 1.84294 | 1.84706 | 2 |
| 3 | 2.65425 | 2.66570 | 2.67716 | 2.68865 | 3 |
| 4 | 3.41736 | 3.43858 | 3.45988 | 3.48127 | 4 |
| 5 | 4-12953 | 4.16239 | 4•19543 | $4 \cdot 22866$ | 5 |
| 6 | $4 \cdot 79557$ | 4.84145 | 4.88764 | 4.93417 | 6 |
| 7 | 5.41970 | 5.47959 | $5 \cdot 53997$ | $5 \cdot 60085$ | 7 |
| 8 | $6 \cdot 00565$ | 6.08024 | 6.15550 | $6 \cdot 23144$ | 8 |
| 9 | $6 \cdot 5567 \mathrm{I}$ | 6.64642 | $6 \cdot 73701$ | $6 \cdot 82846$ | 9 |
| 10 | 7-07581 | $7 \cdot 18088$ | 7.28701 | $7 \cdot 39419$ | 10 |
| 11 | 7.56556 | $7 \cdot 68604$ | 780778 | 7.93072 | II |
| 12 | 8.02828 | $8 \cdot 16412$ | $8 \cdot 30137$ | 8.43996 | 12 |
| 13 | $8 \cdot 46608$ | 8.61710 | $8 \cdot 76996$ | 8.92367 | 13 |
| 14 | $8 \cdot 88083$ | 9.04678 | 9.21435 | $9 \cdot 38344$ | 14 |
| 15 | 9.27425 | 9.45478 | $9 \cdot 63701$ | 9.82076 | 15 |
| 16 | $9 \cdot 64784$ | $9 \cdot 84262$ | 10.03907 | 10:23700 | 16 |
| 17 | 10.00302 | 10.21161 | 10.42182 | 10.63342 | 17 |
| 18 | 10.34104 | 10.56300 | 10.78647 | 1101117 | 18 |
| 19 | 10.66305 | 10.89792 | 11.13414 | 11.37135 | 19 |
| 20 | 10.97011 | 11.21740 | 11.46582 | 12.71495 | 20 |
| 21 | 11.26319 | 11.52242 | 11788248 | 12.04288 | 21 |
| 22 | 11.54316 | 11.81382 | 12.08497 | 12.35604 | 22 |
| 23 | 11.81082 | 12.09243 | 12.37411 | 12.65521 | 23 |
| 24 | 12.06693 | 12.35898 | 12.65063 | 12.94116 | 24 |
| 25 | $12 \cdot 31217$ | 12.61417 | 12.91524 | 13.21457 | 25 |
| 26 | 12.54717 | 12.85864 | 13.16858 | 13.47611 | 26 |
| 27 | 12.77252 | 13.09297 | 13.41126 | 13.72638 | 27 |
| 28 | 12.98875 | 13.31772 | 13.64382 | 13.96596 | 28 |
| 29 | ${ }^{13} 129638$ | 13.53340 | 13.86680 | 14-19539 | 29 |
| 30 | 13.39586 | 13.74048 | 14.08069 | 14.41518 | 30 |
| 31 | 13.58763 | 13.93942 | 14.28593 | 14.62578 | 3 I |
| 32 | 13.77209 | 14.13211 | 14.48297 | 14.82766 | 32 |
| 33 | 13.94962 | 14.31447 | 14.67220 | 15.02123 | 33 |
| 34 | 14.12057 | 14.49134 | 14.85399 | 15.20689 | 34 |
| 35 | 14.28526 | 14.66156 | 15.02871 | 15.38501 | 35 |
| 36 | 14.44401 | 14.82546 | 15.19669 | 15.55593 | 36 |
| 37 | 14.59709 | 14.98332 | 15.35824 | 15.72000 | 37 |
| 38 | 14.74479 | 15.13544 | 15.51365 | 15.87752 | 38 |
| 39 | 14.88734 | 15.28207 | 15.66321 | 16.02879 | 39 |
| 40 | 15.02500 | 15.42347 | 15.80718 | 16.17409 | 40 |
| 41 | 15.15797 | 15.55988 | ${ }_{15} 5.9458 \mathrm{I}$ | 16.31369 | 41 |
| 42 | 15.28648 | 15.69150 | 16.07932 | $16.447 \times 3$ | 42 |
| 43 | 15.41071 | 15.81856 | $16 \cdot 20795$ | 16.57677 | 43 |
| 44 | 15.53086 15.64710 | 15.94124 16.05974 | 16.33190 | 16.70071 | 44 |
| 45 | 15.64710 | $16 \cdot 05974$ | 16.45138 | 16.81989 | 45 |
| 46 | 15.75950 | $16 \cdot 17423$ | 16.56657 | 16.93449 | 46 |
| 47 | 16.86850 | 16.28487 | $16 \cdot 67764$ | 17.04472 | 47 |
| 48 | 15.97397 | 16.39183 | 16.78478 | 17.15076 | 48 |
| 49 | 16.07615 | 16.55328 | 16.88814 | 17.25278 17.3509 | 49 |
| 50 | $16 \cdot 17515$ | 16.59532 | 16.98788 | 17.35096 | 50 |

For explanation see p. 18

Value of an Annuity Yielding Interest on Capital at 5 PER CENT., and Replacing Capital when Invested at

| Years | $2 \%$ | $2 \frac{1}{2} \%$ | $3 \%$ | $3 \frac{1}{2} \%$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | 16.27113 | 16.69206 | 17.08414 | 17.44544 | 51 |
| 52 | 16.36418 | $16 \cdot 78572$ | 17-17706 | 17.53639 | 52 |
| 53 | $16 \cdot 45443$ | 16.87635 | $17 \cdot 26677$ | 17.62394 | 53 |
| 54 | 16.54198 | 16.96411 | 17.35340 | 17.70824 | 54 |
| 55 | 16.62693 | 17.04908 | 17.43707 | 1778941 | 55 |
| 56 | 16.70940 | 17.13138 | 17.51789 | 17.86757 | 56 |
| 57 | $16 \cdot 78945$ | 17.21110 | 17.59599 | 17.94287 | 57 |
| 58 | 16.86720 | 17.28834 | 17.67144 | $18 \cdot 01538$ | 58 |
| 59 | 16.94271 | 17.36320 | 1774436 | 18.08526 | 59 |
| 60 | 17.01607 | 17.43576 | 17.81485 | 18.15257 | 60 |
| 61 | 17.08736 | 17.50610 | 17.88298 | 18.21743 | 61 |
| 62 | $17 \cdot 15667$ | 17.57430 | 17.94886 | $18 \cdot 27993$ | 62 |
| 63 | $17 \cdot 22401$ | 17.64045 | 18.01256 | $18 \cdot 34017$ | 63 |
| 64 | 17.28951 | 17.70460 | 18.07416 | $18 \cdot 39822$ | 64 |
| 65 | 17.35320 | 1776683 | 18•13374 | $18 \cdot 45418$ | 65 |
| 66 | 17.41516 | 17.82722 | 18.19138 | $18 \cdot 50813$ | 66 |
| 67 | 17.47544 | 17.88583 | $18 \cdot 247$ I 3 | $18 \cdot 56013$ | 67 |
| 68 | 17.53410 | 17.94269 | 18.30108 | $18 \cdot 61028$ | 68 |
| 69 | 17.59119 | 17.99789 | 18.35328 | $18 \cdot 65862$ | 69 |
| 70 | 17.64675 | 18.05148 | 18.40379 | $18 \cdot 70524$ | 70 |
| 71 | 17.70085 | 18•10351 | 18.45268 | 18.75020 | 71 |
| 72 | 17.75353 | 18•15404 | $18 \cdot 50000$ | $18 \cdot 79355$ | 72 |
| 73 | 17.80483 | $18 \cdot 20311$ | 18.54581 | 18.83537 | 73 |
| 74 | 17.85480 | $18 \cdot 25077$ | 18.59015 | 18.87570 | 74 |
| 75 | 1790347 | $18 \cdot 29706$ | 18.63309 | 18.91461 | 75 |
| 76 | 17.95090 | 18.34204 | $18 \cdot 67466$ | 18.95213 | 76 |
| 77 | 17.99711 | $18 \cdot 38574$ | $18 \cdot 71492$ | $18 \cdot 98834$ | 77 |
| 78 | 18.04215 | 18.42821 | $18 \cdot 75390$ | 19.02326 | 78 |
| 79 | $18 \cdot 08605$ | $18 \cdot 46948$ | $18 \cdot 79166$ | 19.05696 | 79 |
| 80 | 18.12885 | $18 \cdot 50959$ | 18.82823 | 19.08947 | 80 |
| 81 | $18 \cdot 17057$ | $18 \cdot 54858$ | 18.86365 | 19.12084 | 8I |
| 82 | 18.21125 | 18.58648 | 18.89796 | 1915112 | 82 |
| 83 | 18.25093 | 18.62333 | 18.93120 | $19 \cdot 18033$ | 83 |
| 84 | $18 \cdot 28961$ | $18 \cdot 65916$ | 18.96341 | $19 \cdot 20851$ | 84 |
| 85 | 18.32738 | 18.69400 | 18.99461 | 19.23572 | 85 |
| 86 | 18.36419 | 18.72788 | 19.02485 | 19:26197 | 86 |
| 87 | $18 \cdot 40011$ | $18 \cdot 76083$ | 19.05414 | $19 \cdot 28731$ | 87 |
| 88 | 18.43516 | $18 \cdot 79288$ | 19.08254 | 19.31177 | 88 |
| 89 | 18.46937 | 18.82405 | 19.11005 | $19 \cdot 33537$ | 89 |
| 90 | $18 \cdot 50275$ | 18.85438 | $19 \cdot 13671$ | 19.35816 | 90 |
| 91 | 18.53533 | 18.88388 | 19.16257 | 19.38014 | 91 |
| 92 | 18.56714 | 18.91258 | 19.18762 | 19.40138 | 92 |
| 93 | 18.59819 | 18.94051 | 19.21190 | 19.42187 | 93 |
| 94 | 18.62850 18.65810 | $18 \cdot 96768$ | 19.23544 | 19.44166 | 94 |
| 95 | 18.65810 | 18.99413 | 19.25826 | 19.46076 | 95 |
| 96 | 18.68700 | 19.01986 | 19.28038 | 19.47919 | 96 |
| 97 | $18 \cdot 71523$ | 19.04491 | 19.30183 | 19.49700 | 97 |
| 98 | $18 \cdot 74280$ | 19.06929 | 19.32262 | 19.51418 | 98 |
| 99 | 18-76972 | $19^{\circ} 09301$ | 19.34279 | 19.53078 | 99 |
| 100 | 18*79602 | $19^{\circ} 11612$ | 19.36233 | 19.54680 | 100 |


| Value of an Annuity Yielding Interest on Capital at 6 PER CENT., and Replacing Capital when Invested at |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Years | 2\% | 212\% | $3 \%$ | $3 \frac{1}{2} \%$ | 4\% | Years |
| 1 | '94340 | . 94340 | -94340 | -94340 | .94340 | 1 |
| 2 | 1.80164 | 1.80562 | 1.80959 | 1.81357 | 1.81753 | 2 |
| 3 | $2 \cdot 58562$ | $2 \cdot 59648$ | 2.60736 | $2 \cdot 61825$ | $2 \cdot 62916$ | 3 |
| 4 | 3.30443 | 3.32427 | 3.34418 | 3.36416 | $3 \cdot 38421$ | 4 |
| 5 | 3.96577 | 3.99605 | 4.02649 | 4.05711 | $4{ }^{\circ} 08786$ | 5 |
| 6 | 4.57611 | $4 \cdot 61787$ | $4 \cdot 65988$ | $4 \cdot 70216$ | 474469 | 6 |
| 7 | $5 \cdot 14107$ | 5•19494 | $5 \cdot 24918$ | $5 \cdot 30380$ | $5 \cdot 35877$ | 7 |
| 8 | 5.66543 6.15328 | 5.73174 | 5.79858 | 5.86589 | 5.93373 | 8 |
| 9 10 | $6 \cdot 15328$ 6.60825 | 6.23220 6.69976 | $6 \cdot 31178$ $6 \cdot 79205$ | 6.39198 6.88511 | 6.47279 | 9 |
| 10 | $6 \cdot 60825$ | $6 \cdot 69976$ | $6 \cdot 79205$ | 6.88511 | $6 \cdot 9788 \mathrm{I}$ | 10 |
| 11 | 7.03344 | 7-13745 | 7.24234 | 7.34797 | $7 \cdot 45440$ | 11 |
| 12 | 7.43163 | $7 \cdot 54791$ | 7.66507 | 7.78307 | 7.90189 | 12 |
| 13 | 7.80530 | 7.93349 | 8.06257 | $8 \cdot 19256$ | $8 \cdot 32335$ | 13 |
| 14 | $8 \cdot 15647$ | $8 \cdot 29628$ | $8 \cdot 43697$ | $8 \cdot 57846$ | $8 \cdot 72075$ | 14 |
| 15 | 8.48716 | 8.63811 | 8.78990 | 8.94254 | 9.09579 | 15 |
| 16 | 8.79894 | 8.96065 | $9 \cdot 12317$ | 9.28634 | $9 \cdot 45001$ | 16 |
| 17 | $9 \cdot 09339$ | $9 \cdot 26544$ | 9.43814 | 9.61141 | $9 \cdot 78483$ | 17 |
| 18 | 9.37189 | $9 \cdot 55384$ | $9 \cdot 73624$ | 9.91896 | $10 \cdot 10172$ | 18 |
| 19 | 9.63558 | 9.82704 | 10.01863 | 10.21033 | $10 \cdot 40161$ | 19 |
| 20 | $9 \cdot 88562$ | 10.08603 | $10 \cdot 28637$ | $10 \cdot 48647$ | 10.68582 | 20 |
| 21 | $10 \cdot 12299$ | 10.33197 | $10 \cdot 54052$ | $10 \cdot 74841$ | $10 \cdot 95530$ | 21 |
| 22 | 10.34865 | 10.56569 | 10.78202 | 10.99723 | 11.21089 | 22 |
| 23 | $10 \cdot 56323$ | $10 \cdot 78795$ | 11.01152 | 11.23356 | 11.45357 | 23 |
| 24 | 10.76762 | 10.99953 | 11.23002 | 1145830 | $11 \cdot 68402$ | 24 |
| 25 | 10.96239 | 11.20122 | 1143798 | 11.67215 | II 900306 | 25 |
| 26 | 11.14840 | 11.39367 | 11.63630 | II 87578 | 12.11138 | 26 |
| 27 | 11.32593 | II•57716 | 11.82536 | 12.06971 | 12.30936 | 27 |
| 28 | 11.49557 | 11.75254 | 12.00581 | 12.25445 | 12.49797 | 28 |
| 29 | 11.65786 | 11.92023 | $12 \cdot 17805$ | 12.43085 | 12.67748 | 29 |
| 30 | 11.81335 | 12.08065 | 12.34278 | 12.59906 | 12.84852 | 30 |
| 31 | 11.96229 | 12.23406 | $12 \cdot 50016$ | 12.75966 | 13.01152 | 31 |
| 32 | 12-10493 | 12.38114 | 12.65070 | 12.91289 | 13.16673 | 32 |
| 33 | 12.24185 | 12.52207 | 12.79492 | 13.05960 | 13.31487 | 33 |
| 34 | 12.37333 | 12.65711 | 12.93293 | 13.19958 | 13.45623 | 34 |
| 35 | 12.49969 | 12.78691 | 13.06523 | 13.33369 | 13.59120 | 35 |
| 36 | 12.62100 | 12.91139 | 13.19192 | 13.46185 | 13.71987 | 36 |
| 37 | 12.73772 | 13.03084 | 13.31345 | 13.58456 | 13.84275 | 37 |
| 38 | 12.85000 | 13.14579 | 13.43021 | 13.70201 | 13.96024 | 38 |
| 39 | 12.95824 | 13.25627 | 13.54206 | 13.81444 | 14.07242 | 39 |
| 40 | 13.06233 | 13.36255 | 13.64964 | 13.92234 | 14.17977 | 40 |
| 45 | 13.52997 | ${ }_{13}{ }^{1} 83757$ | 14.12729 | 14.39823 | 14.64944 | 45 |
| 50 | 13.92312 | 14.23325 | 14.52095 | 14.78546 | 15.02630 | 50 |
| 55 | 14.25659 | 14.56579 | 14.84803 | ${ }_{15} 510277$ | 15.33013 | 55 |
| 60 | 14.54165 | 14.84715 | 15.12104 | ${ }_{1} 5.36358$ | 15.57584 | 60 |
| 65 | 14.78721 | 15.08637 | 15.35014 | 15.57924 | 15.77536 | 65 |
| 70 | 15.03895 15.18488 | 15.29122 | 15.54316 | 15.75771 | 15.93752 | 70 |
| 75 | $15 \cdot 18488$ 15.34660 | 15.46695 15.6865 | ${ }_{15} 15.70648$ | 15.90609 | ${ }^{16} 6.06968$ | 75 |
| 80 90 | 15.34660 15.61378 | 15.61865 15.86345 | 15.84485 | 16.02949 | ${ }^{16} 1.17756$ | 80 |
| 90 | ${ }^{15} 5.61378$ | 15.86345 | 16.06271 | 16.21850 | 16.33773 | 90 |
| 100 | 15.82203 | 16.04827 | 16.22139 | 16.35082 | 16.44520 | 100 |

For explanation see p. 18.

## INTEREST TABLES

| Value of an Annuity Yielding Interest on Capital at 7 PER CEN T., and Replacing Capital when Invested at |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | 2\% | 21 $\%$ | $3 \%$ | 31 $\%$ | $4 \%$ | Years |
| I | .93458 | . 93458 | . 93458 | 93458 | 93458 |  |
| 2 | 1.76976 | $\begin{array}{r}1 \\ \hline \\ \mathbf{2} 77359 \\ \hline\end{array}$ | $1 \cdot 77743$ | 178126 | $\begin{array}{r}1.78509 \\ \\ \hline\end{array}$ | 2 |
| 3 | 2.52045 3.19873 | 2.53077 3.21732 | 2.54110 3.23506 | $\begin{array}{r}2.55145 \\ \hline 3.25467\end{array}$ | 2.56181 | 3 |
| 4 | 3.81449 | - 3.21732 | 3.23596 3.87064 | 3.25467 3.89892 | 3.27343 <br> 3.92731 | 4 5 |
| 6 | $4 \cdot 37587$ | 4.41404 | $4 \cdot 45240$ | $4 \cdot 49099$ | 4•52977 | 6 |
| 7 | 4.88969 | 4.93839 | 4.98738 | 5.3667 | 5.08621 | 7 |
| 8 | 5.36167 | 5.42102 | 5.48077 | $5 \cdot 54087$ | $5 \cdot 60136$ | 8 |
| 9 | 5.79660 6.19863 | 5.86658 | 5.93704 6.36007 | $6 \cdot 00795$ 6.44160 | 6.07929 6.52254 | 9 |
| 11 | $6 \cdot 57125$ | $6 \cdot 66196$ | 6.75324 | $6 \cdot 84500$ | 6.93727 | II |
| 12 | 6.91754 | 7 -01818 | ${ }_{7 \cdot 11936}$ | $7 \cdot 22105$ | 7.32322 | 12 |
| 13 | 7.24019 | 7.35035 | 7.46102 | 7.57220 | $7 \cdot 68380$ | 13 |
| 14 | $7 \cdot 54136$ | 7.66072 | $7 \cdot 78053$ | 7.90070 | 8.02124 | 14 |
| 15 | $7 \cdot 82320$ | $7 \cdot 95127$ | 8.07970 | $8 \cdot 20850$ | $8 \cdot 33743$ | 15 |
| 16 | 8.08734 | 8.22376 | 8.36044 | 8.49726 | $8 \cdot 63409$ | 16 |
| 17 18 18 | 8.33542 8.56883 | 8.47975 8.72068 | 8.62418 8.87241 | 8.76862 9.62389 | 8.91273 | 17 |
| 18 19 | 8.56883 8.78874 | 8.72068 8.94775 | $8 \cdot 87241$ $9 \cdot 10631$ 9 | 9.02389 9.2644 I | 9.17490 | 18 |
| 20 | 8.99628 | ${ }_{9} 946196$ | $9 \cdot 32697$ | 9.49148 | 9.65419 | ${ }_{20}$ |
| 21 | 9. 19244 | $9 \cdot 36444$ | $9 \cdot 53543$ | 9.70525 | $9 \cdot 87362$ | 21 |
| 22 | $9 \cdot 37814$ | $9 \cdot 55603$ | 9.73264 | 9.90766 | 10.08075 | 22 |
| 23 | 9.55402 | 9.73748 | 9.91926 | 10.09907 | 10.27654 | 23 |
| 24 | 9.72091 | 9.90953 | 10.09622 | $10 \cdot 28035$ | 10.46167 | 24 |
| 25 | 9.87937 | 10.07293 | 10.26399 | 10.45216 | 10.63694 | 25 |
| 26 | 10.03019 | $10 \cdot 22830$ | $10 \cdot 42340$ | 10.61515 | 10.80299 | 26 |
| 27 28 | 10.17366 10.31034 | 10.37592 10.51657 | 10.57485 10.7892 | 10.76983 10.91667 | 10.96023 | 27 |
| 29 | 10.44070 | ${ }^{10} 10.65065$ | 10.71892 10.85600 | 1091967 1105644 | $11 \cdot 10951$ I. 25113 | 28 29 |
| 30 | 10.56524 | 10-77853 | 10'98672 | 11.18931 | ${ }_{11} 138563$ | 30 |
| $3{ }^{3}$ | $10 \cdot 68422$ | $10 \cdot 90049$ | 11-11123 | $11.355^{80}$ | 11.51344 | 3 I |
| 32 3 3 | $10 \cdot 79785$ | 11.01710 | 11.23002 | 11.43615 | 11.63481 | 32 33 |
| 33 | 10.90667 | ${ }^{11 \cdot 12855}$ | 1134353 | 11.55108 | 1175033 | 33 |
| 34 | $1{ }^{1 / 01091}$ | ${ }^{11} \cdot 23507$ | 11.45187 | 11.66045 | 11.86029 | 34 |
| 35 | 11.11086 | 11333723 | 11.55548 | 1176498 | 11.96501 | 35 |
| 36 | 11.20662 | II 43498 | 11.65447 | ${ }_{11} \cdot 86465$ | 12.06462 | 36 |
| 37 38 |  | 1152857 11.61845 | $11 \cdot 74922$ 11.84006 | 11.95986 12.05081 | 12.15953 12.25010 | 37 <br> 38 |
| 39 | 1147471 | 11.78467 | 11.92691 | 12 -13769 | 12.33639 | 39 |
| 40 | 11.55321 | 1178745 | 12.1028 | 12.22091 | 12.41881 | 40 |
| 45 | 11.91753 | 12.15554 | 12.37854 | 12.58606 |  | 45 |
| 5 | 12.22150 12.47770 | 12.45982 | 12.67974 | 12.88095 | 13.06336 |  |
| 55 | 12.47770 12.69551 | 12711391 12.92775 | 12.92842 13.13491 | 13.12112 13.31753 1 | 13.29239 13.47673 | 55 60 |
| 65 | 12.88228 | 13 -10874 | 1.350743 | 13.47927 | 13.62583 | 65 |
| 70 | 13.04325 13.18305 1 | 13.26313 | 13.45225 | 13.61267 | 13.74665 | 70 |
| 88 | 13.18305 13.30477 | 13.39513 13.50877 | 13.57441 13.67765 | 1372326 13.81502 | 13.84485 13.92486 | 75 80 |
| 90 | 13.50512 | 13.69550 | ${ }_{1} 13.8968$ | 13.95518 | 13.92486 14.04337 | 80 |
| 100 | 13.66064 | 13.82896 | 13'95732 | 14.05304 | 14-12270 | 100 |


| Value of an Annuity Yielding Interest on Capital at $7 \frac{1}{2}$ PER CENT., and Replacing Capital when Invested at |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $2 \%$ | 212\% | $3 \%$ | 31 $\%$ | 4\% | Years |
| 1 | '93023 | $\cdot 93023$ | ${ }^{\circ} 93023$ | -93023 | ${ }^{6} 93023$ | $\underline{x}$ |
| 2 | 1.75424 | r 75800 | $1 \cdot 76177$ | I 76554 | $1 \cdot 76930$ | 2 |
| 3 | 2.48908 | 2.49914 | $2 \cdot 50922$ | $2 \cdot 51931$ | $2 \cdot 52941$ | 3 |
| 4 | $3 \cdot 14838$ | 3.16638 | $3 \cdot 18444$ | $3 \cdot 20255$ | $3 \cdot 22072$ | 4 |
| 5 | 3.74310 | $3 \cdot 77007$ | 3'79716 | $3 \cdot 82437$ | $3 \cdot 85168$ | 5 |
| 6 | 4.28218 | 4:31872 | $4 \cdot 35544$ | $4 \cdot 39236$ | $4 \cdot 42944$ | 6 |
| 7 | 4.77300 | 4.81939 | 4.86604 | 4.91294 | 4.96007 | 7 |
| 8 | $5 \cdot 22169$ | 5.27796 | $5 \cdot 33459$ | $5 \cdot 39150$ | 5.44876 | 8 |
| 9 | 5.63333 | 5.69940 | $5 \cdot 76588$ | $5 \cdot 83274$ | 5.89995 | 9 |
| 10 | $6 \cdot 01229$ | 6.08794 | $6 \cdot 16405$ | 6.24060 | $6 \cdot 31748$ | 10 |
| 11 | $6 \cdot 3622 \mathrm{I}$ | 6.44720 | 6.53266 | 6.61848 | 6.70471 | II |
| 12 | $6 \cdot 68628$ | $6 \cdot 78026$ | $6 \cdot 87465$ | $6 \cdot 96942$ | $7 \cdot 06454$ | 12 |
| 13 | 6.98724 | $7 \cdot 08979$ | $7 \cdot 19269$ | 7.29597 | $7 \cdot 39952$ | 13 |
| 14 | $7 \cdot 26734$ | 737811 | 7.48918 | $7 \cdot 60046$ | 771194 | 14 |
| 15 | $7 \cdot 52870$ | $7 \cdot 64725$ | $7 \cdot 76597$ | $7 \cdot 88488$ | $8 \cdot 00378$ | 15 |
| 16 | 7.77303 | 7.89896 | 8.02497 | $8 \cdot 15096$ | $8 \cdot 27678$ | 16 |
| 17 | 8.00192 | $8 \cdot 13484$ | $8 \cdot 26768$ | $8 \cdot 40033$ | $8 \cdot 53250$ | 17 |
| 18 | $8 \cdot 21679$ | $8 \cdot 35631$ | $8 \cdot 49553$ | 8.63431 | $8 \cdot 77247$ | 18 |
| 19 | 8.41876 | $8 \cdot 56458$ | $8 \cdot 70974$ | $8 \cdot 85426$ | 8.99774 | 19 |
| 20 | $8 \cdot 60904$ | $8 \cdot 76063$ | 8.91139 | 9.06117 | $9-20963$ | 20 |
| 21 | $8 \cdot 78850$ | 8.94558 | 9.10150 | 9.25609 | $9 \cdot 40911$ | 21 |
| 22 | 8.95809 | $9 \cdot 12026$ | 9.28100 | $9 \cdot 44002$ | $9 \cdot 59702$ | 22 |
| 23 | $9 \cdot 11843$ | 9.28540 | 9.45054 | $9 \cdot 61363$ | 9.77431 | 23 |
| 24 | $9 \cdot 27033$ | 9.44171 | 9.61104 | 9•77775 | 9.94164 | 24 |
| 25 | 9.41433 | $9 \cdot 68991$ | 9.76296 | 9.93305 | 10.09979 | 25 |
| 26 | $9 \cdot 55119$ | 9.73066 | 9.90707 | 10.08014 | $10 \cdot 24937$ | 26 |
| 27 | 9.68120 | 9.86417 | 10.04379 | 10.21952 | 10.39080 | 27 |
| 28 | 9.80488 | 9.99121 | 10.17366 | 10.35165 | 10.52488 | 28 |
| 29 | 9.92270 | 10-11214 | 10.29707 | 10.47724 | 10.65190 | 29 |
| 30 | 10.03512 | 10.22735 | 10.41461 | 10.59648 | 10.77238 | 30 |
| 31 | 10.14240 | 10.33709 | 10.52643 | $10 \cdot 70985$ | 10.88672 | 3 I |
| 32 | 10.24475 | 10.44190 | 10.63298 | 10.81759 | 10.99519 | 32 |
| 33 | $10 \cdot 34265$ | 10.54196 | 10.73468 | 10.92037 | 11.09829 | 33 |
| 34 | 10.43634 | 10.6375 I | 10.83165 | 11.01807 | 11-19633 | 34 |
| 35 | 10.52609 | $10 \cdot 72904$ | 10.92431 | 11111136 | $11 \cdot 28961$ | 35 |
| 36 | 10.61199 | 10.81654 | 11.01273 | 11.20022 | 11.37825 | 36 |
| 37 | 10.69439 | $10 \cdot 90025$ | 11.09730 | 11.28503 | 11.46263 | 37 |
| 38 | 10.77342 | 10.98056 | 11.17831 | 11.36596 | 11.54308 | 38 |
| 39 | 10.84940 | 11.05754 | 11.25568 | 11.44322 | 11.61967 | 39 |
| 40 | 10.92228 | 1113139 | 11.32990 | 11.51715 | 11.69276 | 40 |
| 45 | 11.24733 | 1145909 | 11.65705 | 11.84091 | 12.01028 | 45 |
| 50 | 11.51769 | 11772910 | 11.92378 | I2.IOI 56 | 12.26242 | 50 |
| 55 | 11.74495 | 11.95400 | 12.14344 | 12.31330 | 12.46401 | 55 |
| 60 | 11.93773 | $12 \cdot 14285$ | $12 \cdot 32544$ | 12.48611 | 12.62594 | 60 |
| 65 | 12.10273 | 12.30239 | 12.47723 | 12.62818 | 12.75673 | 65 |
| 70 | 12.24470 | 12.43828 | 12.60446 | 12.74519 | 12.86256 | 70 |
| 75 | 12.36782 | 12.55430 | 12.71165 | 12.84208 | 12.94850 | 75 |
| 80 | 12.47489 | 12.65406 | 12.80213 | 12.92240 | 13.01846 | 80 |
| 90 | 12.65086 | 12.81427 | 12.94398 | 13.04495 | 13.12198 | 90 |
| 100 | 12.78723 | 12.93460 | i3.04683 | 13 '13042 | 13'19122 | 100 |

For explanation see p. I8.

| Value of an Annuity Yielding Interest on Capital at 8 PER CENT., and Replacing Capital when invested at |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $2 \%$ | 212\% | $3 \%$ | 32 \% | $4 \%$ | Years |
| 1 | .92593 | -92593 | .92593 | 92593 | 92593 | 1 |
| 2 | 1.73898 | ${ }^{1} \cdot 74289$ | ז 7746393 | 1.75009 | 1.75378 | 2 |
| 3 | 2.45848 <br> 3.09458 | 2.46830 3.1503 | $\begin{array}{r}2.47813 \\ 3.13453 \\ \hline\end{array}$ | 2.48797 3.15208 | 2.49782 $\mathbf{3} 4.16967$ | 3 |
| 5 | 3.09958 3.67434 | 3.11703 3.70032 | 3.13453 3 372641 | 3.15208 <br> 3 <br> 3 | $3 \cdot 16967$ $3 \cdot 77890$ | 5 |
| 5 | $\begin{aligned} & 3 \cdot 67434 \\ & 4 \cdot 19242 \end{aligned}$ | $3 \cdot 70032$ 4.22744 | 372641 4.26261 | 3.75261 4.29797 | 3.77890 4.33347 | 5 |
| 7 | $4 \cdot 66174$ | $4 \cdot 70599$ | 4.75046 | 4.79515 | 4.84004 | 7 |
| 8 | 5.08883 | $5^{1 / 14226}$ | 5•19599 | 5.24998 | $5 \cdot 30425$ | 8 |
| 9 | 5.47900 | 5.54149 | 5.60431 | ${ }_{5}^{5.66745}$ | 5.73089 6.1289 | 9 |
| 10 | $5 \cdot 83683$ | 5.90811 | 5.97975 | $6 \cdot 05177$ | $6 \cdot 12404$ | 10 |
| II | $6 \cdot 16606$ | 6.24586 | $6 \cdot 32603$ | 6.40648 | $6 \cdot 48723$ | II |
| 12 | $6 \cdot 46998$ | 6.55794 | 6.64620 | 6.73473 | $6 \cdot 82352$ | 12 |
| 13 | 6.75137 | 6.84706 | 6.94300 | 7.03918 | $7 \cdot 13552$ | 13 |
| 14 | 7.01252 | $7 \cdot 11561$ | 7.21886 7.4756 | 7.32280 | 7.42561 | 14 |
| 15 | $7 \cdot 25558$ | 7.36563 | 747569 | $7 \cdot 58581$ | 779580 | 15 |
| 16 | 7.48223 | 7.59884 | 7.71539 | 7.83177 | 7.94786 | 16 |
| 17 | 7.69408 7.89253 | 7.81690 8.02118 | 7.93947 | 8.06172 8.27698 | $8 \cdot 18337$ 8.40386 | 17 |
| 19 | 88.07872 | $8 \cdot 21288$ | 8 8.34627 | 8.47889 | $8 \cdot 61037$ |  |
| 20 | $8 \cdot 25375$ | $8 \cdot 39299$ | 8.53126 | $8 \cdot 66844$ | 8.8042 I | 20 |
| 21 | 8.41857 | 8.56260 | 8.70534 | 8.84666 | 8.98634 | 21 |
| 22 | 8.57405 | 8.72250 | 8.86941 | 9.01453 | $9 \cdot 15759$ | 22 |
| 23 | 8.72083 | 8.87343 | 9.02413 | $9 \cdot 17271$ | $9 \cdot 31888$ | 23 |
| 24 | 8.85967 | 9.01607 | 9.17036 9.30856 | ${ }^{9} 9322015$ | 9.47086 | 24 <br> 25 |
| 25 | $8 \cdot 99111$ | $9 \cdot 15114$ | $9 \cdot 30856$ | 946307 | 9.61428 | 25 |
| 26 | $9 \cdot 11585$ | $9 \cdot 27919$ | 9.43948 | $9 \cdot 59647$ | 9.74972 | 26 |
| 27 | 9.23421 | $9 \cdot 40053$ | 9.56352 | 9.72271 | 9.87762 | 27 |
| 28 | $9 \cdot 34667$ | 9.51583 | 9.68120 | 9.84223 | 9.99870 | 28 |
| 29 | $9 \cdot 45367$ | 9.62547 | 9.79288 | 9.95570 | $10 \cdot 11327$ | 29 |
| 30 | $9 \cdot 55566$ | $9 \cdot 72980$ | 9.89913 | 10.06330 | $10 \cdot 2218 \mathrm{I}$ | 30 |
| $3{ }^{\text {r }}$ | 9.65288 | 9.82907 | 10.00010 | 10.16549 | $10 \cdot 32471$ | 31 |
| 32 | 9.74554 | 9.92379 | 10.09622 | 10.26252 | 10.42220 | 32 |
| 33 | ${ }^{9.83410}$ | ${ }^{10} 0$ | 10.18786 | 10.35497 10.44277 | 10.51480 | 33 |
| 34 | 9.91877 | $10 \cdot 10030$ 10.18278 | 10.27517 10.35851 | 10.44277 10.52654 | 10.60277 10.68639 | 34 35 3 |
| 35 | 9.99980 | 10'18278 | 10.35851 | 10.52654 | 10.68639 | 35 |
| 36 | $10 \cdot 07729$ | $10 \cdot 26157$ | 10.43798 | 10.60625 | $10 \cdot 76577$ | 36 |
| 37 | ${ }^{10} 1515156$ | 10.33688 | 10.51392 | 10.68228 | 10.84128 | 37 <br> 38 |
|  | 10.22275 10.29114 | 10440908 10.47823 | 10.58660 10.6598 | 10.75477 10.82392 | 10.91322 10.98165 | 38 39 |
| 40 | 10.35668 | $10 \cdot 54452$ | 10.72248 | 10.89004 | 11.04692 | 40 |
| 45 | 10.64849 | то 83811 | 11.01504 | 11.17905 | 11.32990 | 45 |
| 50 | $10 \cdot 89052$ | 11.7935 | 11.25290 | 11.41110 | 11.55402 | 50 |
| 55 | ${ }^{10} 0.09348$ | 11.27981 | ${ }^{11} 1.44833$ | 11.59918 | ${ }^{11} 173282$ | 55 |
| 60 65 | 10.26532 11.41214 | 11.44780 11.58950 | ${ }_{11}^{11} 767453$ | 11.75240 11.77818 | 11.87620 11.99185 | 60 65 |
| 70 | 11.53828 | 11.71001 | 11.85719 | 11.98164 | 12.08532 | 70 |
| 75 | 11.64755 | 11.81279 | 11.95200 | 12.06724 | ${ }^{12} \cdot 1615116$ | 75 |
| 80 | 11.74246 | 11.90108 | 12.03196 | $12 \cdot 13813$ | $12 \cdot 22285$ | 80 |
| 90 | 11.89825 <br> 12.01880 | 12.04268 12.14890 | $12 \cdot 15717$ 12.24785 | 12.24620 12.32149 | 12.31406 12.37501 | 90 100 |
| 100 | 12.01880 | 12.14890 | $12 \cdot 24785$ | 12.32149 | 12.37501 | 100 |

(I2Id)

| Value of an Annuity Yielding Intereat on Capital at 9 PER CENT., and Replacing Capital when Inverted at |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Years | $2 \%$ | $2 \frac{1}{2} \%$ | $3 \%$ | $3 \frac{1}{2} \%$ | $4 \%$ | Years |
| 1 | '91743 | $\cdot 91743$ | -91743 | -91743 | '91743 | 1 |
| 2 | 170926 | 1.71284 | 1.71641 | 1-71999 | 172356 | 2 |
| 3 | 2.39949 | $2 \cdot 40884$ | 2.41820 | 2.42757 | 2.43695 | 3 |
| 4 | 3.00640 | 3.02281 | 3.03926 | 3.05576 | 3.07229 | 4 |
| 5 | $3 \cdot 5441 \mathrm{I}$ | $3 \cdot 56828$ | $3 \cdot 59253$ | $3 \cdot 61689$ | 3.64130 | 5 |
| 6 | 4.02372 | 4.05597 | 408834 | 4•12086 | 4•15348 | 6 |
| 7 | 4.4541 I | 4.49448 | 4.53502 | 4.57574 | $4 \cdot 61659$ | 7 |
| 8 | 4.84240 | 4.89076 | 4.93935 | 4.988 Io | $5 \cdot 03707$ | 8 |
| 9 | $5 \cdot 19440$ | $5 \cdot 25053$ | $5 \cdot 30690$ | $5 \cdot 36348$ | 5.42026 | 9 |
| 10 | $5 \cdot 51493$ | $5 \cdot 57852$ | $5 \cdot 64235$ | $5 \cdot 70643$ | 5777064 | 10 |
| 11 | $5 \cdot 80794$ | $5 \cdot 87869$ | $5 \cdot 94965$ | $6 \cdot 02076$ | 6.09203 | 11 |
| 12 | $6 \cdot 0768$ I | 6.15434 | $6 \cdot 23201$ | 6.30979 | $6 \cdot 38765$ | 12 |
| 13 | 6. 32439 | $6 \cdot 40828$ | $6 \cdot 49224$ | $6 \cdot 57626$ | 6.66027 | 13 |
| 14 | $6 \cdot 55299$ | 6.64293 | $6 \cdot 73283$ | $6 \cdot 82263$ | 6.91233 | 14 |
| 15 | 6.76476 | 6.86031 | 6.95570 | 7.05094 | 7.14587 | 15 |
| 16 | 6.96136 | 7.06220 | 7•16276 | 7-26296 | 7.36269 | 16 |
| 17 | 7.14439 | 7.25016 | 7.35548 | 7.46029 | 7.56435 | 17 |
| 18 | 7.31518 | 7.42556 | 7.53529 | 7.64427 | 7.75236 | 18 |
| 19 | 7.47485 | 7.58956 | 7.70333 | $7 \cdot 81616$ | 7.92776 | 19 |
| 20 | 7.62445 | 7.74311 | 7.86065 | 7.97696 | 8.09179 | 20 |
| 21 | 7.76488 | 7.88724 | $8 \cdot 00820$ | 8.12764 | $8 \cdot 24538$ | 21 |
| 22 | $7 \cdot 89696$ | 8.02272 | $8 \cdot 14684$ | 8.26911 | $8 \cdot 38933$ | 22 |
| 23 | 8.02130 | $8 \cdot 15023$ | 8.27719 | $8 \cdot 40202$ | 8.52450 | 23 |
| 24 | $8 \cdot 13862$ | 8.27041 | 8.40004 | $8 \cdot 52711$ | $8 \cdot 65149$ | 24 |
| 25 | $8 \cdot 24940$ | $8 \cdot 38392$ | $8 \cdot 51586$ | 8.64499 | 8.77101 | 25 |
| 26 | 8-35429 | 8.49127 | 8.62530 | $8 \cdot 75618$ | 8.88360 | 26 |
| 27 | 8.45359 | 8.59276 | $8 \cdot 72875$ | 8.86116 | 8.98965 | 27 |
| 28 | 8.54774 | 8.68900 | 8.82667 | 8.96033 | 9.08983 | 28 |
| 29 | 8.63715 | $8 \cdot 78033$ | $8 \cdot 91941$ | 9.05428 | 9.18442 | 29 |
| 30 | 8.72220 | 8.86706 | $9 \cdot 00747$ | 9.14319 | 9.27386 | 30 |
| $3 \mathrm{3I}$ | 8.80313 |  | 9.09099 | 9.22748 | 9.35848 | 35 |
| 32 | 8.88013 | 9.02788 | 9.17036 | 9.30735 | 9.43850 | 32 |
| 33 | 8.95359 | 9.10258 | 9.24590 | 9.38333 | 9.51439 | 33 |
| 34 | 9.02372 | 9.17372 | 9.31775 | 9.45537 | 9.58635 | 34 |
| 35 | 9.09074 | 9.24172 | $9 \cdot 38623$ | 9.52399 | 9.65465 | 35 |
| 36 | 9.15474 | 9.30657 | 9.45144 | 9.58917 | 9.71940 | 36 |
| 37 38 | 9.21600 | 9.36847 | 9.51366 | 9.65134 | $9 \cdot 78091$ | 37 |
| 38 | 9.27463 | 9.42774 | 9.57313 | 9.71044 | 9.83942 | 38 |
| 39 | 9.33088 9.38474 | 9.48443 | 9.62983 | $9 \cdot 76677$ | 9.89501 | 39 |
| 40 | 9.38474 | 9.5387 I | 9.68410 | 9.82058 | 9.94797 | 40 |
|  | 9.62371 | 9.77833 | 9.92211 | 10.05500 | $10 \cdot 17687$ | 45 |
| 50 | 9.82096 | 9.97427 | $10 \cdot 11470$ | 10.24233 | $10 \cdot 35733$ | 50 |
| 55 | ${ }^{9} 9.98572$ | $10 \cdot 13644$ | $10 \cdot 27232$ | 10.39361 | $10 \cdot 50078$ | 55 |
| 60 65 | 10.12474 | 10.27190 | $10 \cdot 40226$ | $10 \cdot 51646$ | $10 \cdot 61549$ | 60 |
| 65 | 10.24317 | $10 \cdot 38583$ | $10 \cdot 51016$ | 10.61706 | $10 \cdot 70778$ | 65 |
| 70 | 10.34468 | 10.48251 | 10.60029 | 10.69965 |  | 70 |
| 75 | 10.43242 | $10 \cdot 56479$ | 10.67600 | 10.76786 | 10.84258 | 75 |
| 80 | $10 \cdot 50851$ | 10.63536 | 10.73975 | 10.82427 | 10.89159 | 80 |
| 90 r00 | 10.63309 | 10.74830 | 10.83940 | 10.91012 | 10.96395 | 90 |
| 100 | 10.72927 | 10.83283 | 10.91143 | 10.96984 | 11.01225 | 100 |

For explanation see p. 18.


| NOMINAL AND EFFECTIVE RATES OF INTEREST |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Nominal Rate(Annual) | Effective Annual Rate when Interest is Convertible |  |  | Nominal Rate <br> (Annual) |
|  | Half-yearly | Quarterly | Monthly |  |
| - 01 | -010025 | -010038 | . 010046 | OI |
| . 0125 | -012539 | -012559 | . 012572 | -0125 |
| . 015 | -015056 | -15085 | -015104 | .015 |
| -0175 | - 017577 | -017615 | -017641 | -0175 |
| -02 | -020100 | -020151 | -020184 | . 02 |
| . 0225 | -022627 | -022691 | . 022733 | . 0225 |
| . 025 | . 025156 | -025235 | -025288 | . 025 |
| -0275 | -027689 | $\cdot 027785$ | -027849 | -0275 |
| . 03 | -030225 | -030339 | .030416 | . 03 |
| . 0325 | -032764 | -032898 | -032989 | .0325 |
| -035 | -035306 | -035462 | -035567 | -035 |
| -0375 | -037852 | -038031 | -038151 | -0375 |
| . 04 | -040400 | -040604 | -040742 | . 04 |
| . 045 | -045506 | -045765 | -045940 | -045 |
| . 05 | . 050625 | -050945 | .051162 | . 05 |
| .06 | -060900 | -061364 | -061678 | -06 |
| -07 | -071225 | -071859 | -072290 | .07 |
| -08 | -081600 | -082432 | .083000 | -08 |
| $\cdot 09$ | -092025 | -093083 | $\cdot 093807$ | -09 |
| -10 | -102500 | -103813 | -104713 | '10 |
| Effective Rate <br> (Annual) | Nominal Annual Rate when Interest is Convertible |  |  | Effective Rate (Annual) |
|  | Half-yearly | Quarterly | Monthly |  |
| - 1 | -009975 | -009963 | -009954 | Or |
| -0r25 | - 012461 | -012442 | $\bigcirc{ }^{-12429}$ | -0125 |
| -015 | -OI4944 | -014916 | -014898 | -015 |
| -0175 | -017424 | -017386 | -017361 | -0175 |
| . 02 | - 191901 | -019852 | -o19819 | -02 |
| '0225 | -022375 | -022313 | -022271 | . 0225 |
| . 025 | -024846 | -024769 | -24718 | . 025 |
| -0275 | -027313 | -027221 | -027159 | -0275 |
| -03 | -029778 | -029668 | -029595 | .03 |
| . 0325 | -032240 | . 032111 | .032026 | . 0325 |
| -035 | -034699 | -034550 | - 034451 | . 035 |
| -0375 | -037155 | -036984 | ${ }^{\circ} \mathrm{O} 6871$ | -0375 |
| '04 | -039608 | -039414 | . 039285 | - 04 |
| -045 | $\bigcirc 044504$ | -044260 | -044098 | -045 |
| . 05 | -049390 | -049089 | ${ }^{\circ} \mathrm{O} 88889$ | . 05 |
| . 06 | -059126 | -058695 | -058411 | . 06 |
| . 07 | -068816 | -068234 | .067850 |  |
| -08 | -07846I | -077706 | -077208 | -08 |
| -09 | -088061 | -087113 | -086488 | 09 |
| -10 | -097618 | '096455 | -095690 | - 10 |

For explanation see pp. 18, 19

| Constant Factors for Converting Values and Amonnts of Yearly Annuities into thoee of Annuitiee for One Year Paysble HALF-YEARLY, QUARTERLY, AND MONTHLY |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Yearly <br> Rates | $\begin{gathered} \text { Half-yearly } \\ \text { Factors } \end{gathered}$ | Quarterly <br> Factors | Monthly <br> Factors | $\begin{aligned} & \text { Yearly } \\ & \text { Rates } \end{aligned}$ |
| - 1 | 1.00249 | 1.00377 | 1.00460 | - O |
| . 0125 | 1.00312 | I 00469 | 1.00572 | . 0125 |
| -015 | 1.00374 | I.00563 | I $\cdot 00685$ | . 015 |
| -0175 | 1.00436 | I 00656 | I 000799 | -0175 |
| . 02 | 1.00497 | I 000747 | 1.00914 | 02 |
| . 0225 | $1 \cdot 00559$ | 1.00841 | $1 \cdot 101027$ | . 0225 |
| . 025 | 1.00621 | $1 \cdot 00933$ | 1.01142 | . 025 |
| -0275 | $1 \cdot 00683$ | 1.01025 | 1.01254 | -0275 |
| '03 |  | I’oIII |  | 03 |
| $0325$ | I 00806 | $1.01211$ | 1.01482 | . 0325 |
| -035 | 1 '00867 | 1.01303 | $1 \cdot 101594$ | -035 |
| -0375 | 1.00929 | I 01395 | 1.01707 | -0375 |
| -04 | 1.00990 | I.01488 | 1.01820 | . 04 |
| -045 | I 01113 | 1.01672 | 1.02046 | . 045 |
| . 05 | 1.01235 | I.01856 | 1.02271 | . 05 |
| -06 | $1 \cdot 01478$ | 1.02223 | 1.02721 | .06 |
| -07 | 101720 | 1.02588 | 1.03169 | -07 |
| -08 | I 01961 | 1.02952 | 1.03616 | -08 |
| -09 | $1{ }^{1} \mathbf{0 2 2 0 1}$ | I 03314 | 1.04061 | -09 |
| -10 | $1 \cdot 02440$ | I.03676 | 1.04504 | -10 |


| Annuity Payable | Interest Convertible |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Yearly | Half-yearly | Quarterly | Montbly |
| Yearly . | ${ }^{1} 5.62208$ | 15.55624 | 15.52282 | 15.50035 |
| Half-yearly. | 15.77677 | 15\%71180 | 15.67883 | 15.65665 |
| Quarterly | 15.85449 | 15.78998 | 15.75722 | 1573520 |
| Monthly . | 15.90645 | 15.84223 | $15 \cdot 80963$ | 15.78771 |


| The Present Value of 1 due a Year hence (v), and the Discount on 1 for One Year (d) correeponding to Various Rates of Interest (i) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $i$ | $v=\frac{1}{1+i}$ | $d=1-v$ | $i$ | $v=\frac{1}{1+i}$ | $d=1$ |
| '01 | '990099010 | -009900990 | O3 | -970873786 | . 029126214 |
| -0125 | -987654321 | -012345679 | -035 | $\cdot 966183575$ | -033816425 |
| . 015 | -98522I675 | -014778325 | . 04 | - 961538462 | -03846r538 |
| -0175 | -982800983 | -017199017 | - 045 | -956937799 | -043062201 |
| .02 | -980392157 | -019607843 | . 05 | -952380952 | -047619048 |
| . 0225 | -977995110 | -022004890 | -06 | -943395226 | -056603774 |
| . 025 | -975609756 | -024390244 | -88 | $\cdot 925925926$ | -074074074 |
| . 0275 | -973236010 | -026763990 | '10 | '909090909 | -090909091 |

For explanation see pp. 19, 20

| The Number of Years in which an Amount is doubled by Accumulation at SIMPLE AND COMPOUND INTEREST |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Rate p | er Cent. | At Simple Interest |  | At Oompound Interest |  | t Rate per Cent. |
| 1 |  | $100 \cdot 00$ |  | 69.66 |  | 1 |
|  | $\frac{1}{4}$ | 80.00 |  | $55 \cdot 80$ |  | $1{ }^{\frac{1}{4}}$ |
|  | $\frac{1}{2}$ | 66.67 |  | $46 \cdot 56$ |  | $1{ }^{\frac{1}{2}}$ |
|  | $\frac{8}{4}$ | $57 \cdot 14$ |  | 39.95 |  | $1{ }^{\frac{3}{4}}$ |
| 2 |  | 50.00 |  | $35^{\circ} \mathrm{o}$ |  | 2 |
|  | $\frac{1}{4}$ | $44 \cdot 44$ |  | 31.15 |  | $2 \frac{1}{4}$ |
|  | $\frac{1}{2}$ | $40 \cdot 00$ |  | 28.07 |  | $2 \frac{1}{2}$ |
|  | $\frac{3}{4}$ | $36 \cdot 36$ |  | 25.55 |  | 23 |
| 3 |  | $33 \cdot 33$ |  | 23.45 |  | 3 |
|  | 䨟 | 30.77 |  | 21.67 |  | $3{ }^{\frac{1}{4}}$ |
|  | $\frac{1}{2}$ | 26.67 |  | $20 \cdot 15$ |  | $3{ }^{\frac{1}{2}}$ |
|  | $\frac{3}{4}$ |  |  | 18.83 |  | $3{ }^{\frac{8}{4}}$ |
| 4 |  | 25.0022.22 |  | 17.67 |  | 4 |
|  | $\frac{1}{2}$ |  |  | 15.75 |  | 4 $\frac{1}{2}$ |
| 5 |  | 20.0016.67 |  | 14.2111.90 |  | 5 |
| 6 |  |  |  | 6 |
|  |  | 14.2912.50 |  |  |  | 10.24 |  | 7 |
| 8 |  |  |  | 9.01 |  | 8 |
| 9 |  | II.II |  | 8.04 |  | 9 |
| 10 |  |  | . 00 | $7 \cdot 27$ |  | 10 |
| DECIMALS OF ONE YEAR |  |  |  |  |  |  |
| Weeks | Decimal of Ode Year |  | Weeks | Decimal of One Xear | Months | Decimal of One Year |
| I | -OI923I |  | 27 | -519231 | 1 | -83333 |
| 2 | -038462 |  | 28 | -538462 | 2 | -166667 |
| 3 | -057692 |  | 29 | -557692 | 3 | -250000 |
| 4 | -076923 |  | 30 | - 576923 | 4 | -333333 |
| 5 | -096154 -115385 |  | 31 | -596I54 | 5 | -416667 |
| 6 |  |  | 32 | -615385 | 6 | -500000 |
| 7 |  |  | 33 | . 634615 | 7 | -583333 |
| 8 | -134615- I53846 |  | 34 | -653846 | 8 | -666667 |
| 9 | -173077 |  | 35 | -673077 | 9 | $\cdot 750000$ |
| Io |  |  | 36 | -692308 | 10 | -833333 |
| 11 | -211538 |  | 37 | -711538 | 11 | 916667 |
| 12 |  |  | 38 | $\cdot 730769$ | 12 | 10000000 |
| 13 | -250000 |  | 39 | $\checkmark 750000$ |  |  |
| 14 | -269231 |  | 40 | $\cdot 769231$ | Days | Decimals of One Year |
| 15 | $\cdot 288462$$307692$ |  | 4 I | $\cdot 788462$ |  |  |
| 16 |  |  | 42 | . 807692 | 60 | $\cdot 164384$ |
| 17 | -326923 |  | 43 | -826923 | 90 | - 246575 |
| 18 | -346154 |  | 44 | -846154 | 120 | -328767 |
| 19 | $\cdot 365385$ |  | 45 | . 865385 | 150 |  |
| 20 | - 403846 |  | 46 | -884615 | 180 | -493I5I |
| 21 |  |  | 47 | -903846 | 210 | -575342 |
| 22 | 423077 |  | 48 | -923077 | 240 | -657534 |
| 23 24 | -442308 |  | 49 | -942308 | 270 | -739726 |
| 24 |  |  | 50 | -961538 | 300 | -821918 |
| 25 | $\cdot 480769$ |  | 51 | -980709 | 330 | 904110 |
| 26 | -500000 |  | 52 | $1 \cdot 000000$ | 365 | 1000000 |

For explanation see p. 21

THE DECIMAL CORRESPONDING TO EVERY FARTHING IN THE $£$

| Pence | 0 \％ | $1 s$. | $2 \%$ | $3 s$ | $4 s$. | Pence |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | －00000 | －05000 | －10000 | － 15000 | －20000 | 0 |
| 0，$\frac{1}{4}$ | －00104 | $\cdot 05104$ | －10104 | －15104 | －20104 | $0 \frac{1}{4}$ |
| O ${ }^{\frac{1}{2}}$ | －00208 | －05208 | －10208 | －15208 | －20208 | $0 \frac{1}{2}$ |
| $0 \frac{3}{4}$ | ．00313 | －05313 | $\cdot 10313$ | －15313 | －20313 | $0{ }^{3}$ |
| 1 | －00417 | －05417 | －10417 | －15417 | －20417 | 1 |
| $1{ }^{1}$ | －0052I | －0552 | －10521 | －15521 | －20521 | $1{ }^{1}$ |
| 12 | ． 00625 | －05625 | －10625 | －15625 | －20625 | $1{ }^{\frac{1}{2}}$ |
| $1{ }_{4}^{4}$ | －00729 | －05729 | －10729 | －15729 | －20729 | $1{ }^{\frac{3}{4}}$ |
| 2 | －00833 | ${ }^{\circ} 05833$ | －10833 | －15833 | －20833 | 2 |
| $2 \frac{1}{3}$ | －00938 | ． 05938 | －10938 | － 5938 | －20938 | $2 \frac{1}{4}$ |
| $2{ }^{2}$ | －01042 | －06042 | －11042 | －16042 | $\cdot 21042$ | $2 \frac{1}{2}$ |
| $2 \frac{3}{4}$ | － 01146 | －06146 | －11146 | －16146 | －21146 | $2{ }^{\frac{3}{4}}$ |
| 3 | －01250 | －06250 | －11250 | －16250 | －21250 | 3 |
| $3{ }^{\frac{1}{2}}$ | －1354 | －06354 | －11354 | －16354 | $\cdot 21354$ | $3^{\frac{1}{4}}$ |
| $3^{\frac{3}{2}}$ | － 01458 | －06458 | － 11458 | －16458 | $\cdot 21458$ | $3^{\frac{1}{2}}$ |
| $3{ }_{4}$ | －01563 | －06563 | －11563 | －16563 | －21563 | 3年 |
| 4 | －01667 | －06667 | －11667 | － 16667 | －21667 | 4 |
| 4雵 | －01771 | －06771 | －11771 | －16771 | －21771 | 4 ${ }^{\frac{1}{4}}$ |
| $4^{\frac{1}{3}}$ | －1875 | －06875 | －11875 | －16875 | －21875 | $4{ }^{\frac{1}{2}}$ |
| $4 \frac{3}{4}$ | －01979 | －06979 | － 11979 | －16979 | －21979 | 4每 |
| 5 | －02083 | ．07083 | $\cdot 12083$ | －17083 | －22083 | 5 |
| 5 ${ }^{\frac{1}{2}}$ | －02188 | －07188 | －12188 | －17188 | －22188 | $5^{\frac{1}{1}}$ |
| $5{ }^{5}$ | －02292 | －07292 | － 12292 | $\begin{array}{r}\text {－} 17292 \\ \cdot \\ \hline\end{array}$ | ． 222292 | $5{ }^{\frac{1}{2}}$ |
| 53 | －02396 | －07396 | －12396 | － 17396 | －22396 | $5{ }^{\frac{3}{4}}$ |
| 6 | ． 02500 | ． 07500 | － 12500 | －17500 | －22500 | 6 |
| $6 \frac{1}{1}$ | －02604 | －07604 | －12604 | － 17604 | － 22604 | 61 |
| $6 \frac{1}{2}$ | ． 02708 | －07708 | －12708 | －17708 | －22708 | $6 \frac{1}{2}$ |
| $6 \frac{3}{4}$ | －02813 | ${ }^{\circ} 7813$ | $\cdot 12813$ | ${ }^{1} 7813$ | －22813 | 6年 |
| 7 | ． 02917 | －07917 | －12917 | ${ }^{-17917}$ | $\cdot 22917$ | 7 |
| $7{ }^{7}$ | －03021 | －08021 | －13021 | －18021 | $\cdot 23021$ | $7{ }^{\frac{1}{4}}$ |
| $7 \frac{1}{2}$ | －03125 | $\bigcirc 08125$ | －13125 | $\cdot 18125$ | $\cdot 23125$ | 7 ${ }^{\frac{1}{2}}$ |
| 7㐌 | －03229 | －08229 | －13229 | －18229 | －23229 | $7 \frac{3}{4}$ |
| 8 |  | －08333 |  | －18333 | － 23333 | 8 |
| $8 \frac{1}{4}$ | －03438 | －08438 | －I3438 | －18438 | － 23438 | $8 \frac{1}{4}$ |
| $8 \frac{1}{2}$ | －03542 | －08542 | －13542 | － 18542 | $\cdot 23542$ | $8 \frac{1}{2}$ |
| $8 \frac{8}{4}$ | －03646 | －08646 | －13646 | －18646 | $\cdot 23646$ | $8 \frac{3}{4}$ |
| 9 | －03750 | －08750 | －13750 | － 18750 | $\cdot 23750$ | 9 |
| $9{ }^{\frac{1}{4}}$ | －03854 | －08854 | －13854 | －18854 | －23854 | 9 ${ }^{\frac{1}{4}}$ |
| 9 ${ }^{\frac{1}{2}}$ | － 3958 | －08958 | － 13958 | －18958 | － 23958 | $9{ }^{\frac{1}{2}}$ |
| 94 | ＇04063 | －09063 | －14063 | －19063 | －24063 | 93 ${ }^{\frac{3}{4}}$ |
| 10 | ． 04167 | －09167 | $\cdot 14167$ | －19167 | －24167 | 10 |
| 10， | －04271 | －0927 1 | －14271 | ． 19271 | －24271 | 10눈 |
| $10 \frac{1}{2}$ | － 04375 | －09375 | － 14375 | －19375 | － 24375 | 10를 |
| $10{ }^{\frac{3}{3}}$ | －04479 | －09479 | － 14479 | －19479 | － 24479 | $10 \frac{3}{4}$ |
| II | ． 04583 | －09583 | －14583 | －19583 | －24583 | 11 |
| III ${ }^{\frac{1}{4}}$ | $\cdot 04688$ | －09688 | －14688 | －19688 | $\cdot 24688$ | 115 |
| III ${ }^{\frac{1}{2}}$ | －04792 | －09792 | －14792 | －19792 | － 24792 | $\underline{11}$ |
| 11妾 | －04896 | $\cdot 09896$ | －14896 | $\cdot 19896$ | $\cdot 24896$ | ［15 ${ }_{4}$ |

THE DECIMAL CORRESPONDING TO EVERY FARTHING IN THE £

| Pence | $5 s$ | $6 s$ | $7 s$ | $8 s$ | $9 s$ | Pence |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | - 25000 | -30000 | -35000 | -40000 | $\cdot 45000$ | 0 |
| $0 \frac{1}{4}$ | -25104 | 30104 | - 35104 | -40104 | $\cdot 45104$ | $0 \frac{1}{4}$ |
| $0 \frac{1}{2}$ | - 25208 | -30208 | - 35208 | -40208 | -45208 | $0 \frac{1}{2}$ |
| $0 \frac{3}{4}$ | $\cdot 25313$ | -303I3 | $\cdot 35313$ | 40313 | $\cdot 45313$ | $0 \frac{3}{4}$ |
| I | - 25417 | -30417 | -35417 | -40417 | -45417 | 1 |
| $1{ }^{13}$ | - 2552 L | -3052I | -3552I | -40521 | -4552I | ${ }^{1} \frac{1}{4}$ |
| $\underline{1}$ | $\cdot 25625$ | $\cdot 30625$ | $\cdot 35625$ | -40625 | -45625 | $\underline{1}$ |
| $1 \frac{3}{4}$ | $\cdot 25729$ | $\cdot 30729$ | -35729 | -40729 | -45729 |  |
| 2 | $\cdot 25833$ | -30833 | $\cdot 35833$ | -40833 | -45833 | 2 |
| $2 \frac{1}{4}$ | - 25938 | $\cdot 30938$ | -35938 | -40938 | -45938 | 21 $\frac{1}{4}$ |
| $2 \frac{1}{2}$ | $\cdot 26042$ | $\cdot 31042$ | $\cdot 36042$ | $\cdot 41042$ | -46042 | $2 \frac{1}{2}$ |
| $2 \frac{3}{4}$ | -26146 | $\cdot 31146$ | $\cdot 36146$ | -41146 | -46146 | $2 \frac{3}{4}$ |
|  | -26250 | $\cdot 31250$ | -36250 | 41250 | -46250 | 3 |
| $3{ }^{\frac{1}{1}}$ | $\cdot 26354$ | $\cdot 31354$ | $\cdot 36354$ | -41354 | . 46354 | ${ }^{3} \frac{1}{4}$ |
| $3{ }^{\frac{1}{2}}$ | -26458 | $\cdot 31458$ | - 36458 | -41458 | -46458 | $3{ }^{\frac{1}{2}}$ |
| $3{ }^{\frac{3}{4}}$ | -26563 | -31563 | -36563 | $\cdot 41563$ | $\cdot 46563$ | $3 \frac{3}{4}$ |
| 4 | - 26667 | $\cdot 31667$ | -36667 | -41667 | -46667 | 4 |
| 4 ${ }^{\frac{1}{4}}$ | -26771 | -31771 | -36771 | -41771 | -46771 | 4 ${ }^{\frac{1}{4}}$ |
| 4 ${ }^{\frac{1}{2}}$ | $\cdot 26875$ | $\cdot 31875$ | $\cdot 36875$ | -41875 | -46875 | 43 |
| $4{ }^{\frac{3}{4}}$ | -26979 | $\cdot 31979$ | -36979 | $\cdot 41979$ | -46979 | $4{ }^{\frac{3}{4}}$ |
| 5 | $\cdot 27083$ | $\cdot 32083$ | $\cdot 37083$ | -42083 | -47083 | 5 |
| 5 | $\cdot 27188$ | $\cdot 32188$ | $\cdot 37188$ | -42188 | -47188 | $5{ }^{1}$ |
| $5{ }^{\frac{1}{2}}$ | -27292 | $\cdot 32292$ | $\cdot 37292$ | $\cdot 42292$ | -47292 | 5 $\frac{1}{2}$ |
| $5{ }^{\frac{8}{4}}$ | -27396 | $\cdot 32396$ | $\cdot 37396$ | $\cdot 42396$ | - 47396 | 53 |
| 6 | -27500 | -32500 | -37500 | -42500 | -47500 | 6 |
| $6 \frac{1}{4}$ | $\cdot 27604$ | $\cdot 32604$ | $\cdot 37604$ | -42604 | -47604 | $6 \frac{1}{4}$ |
| $6 \frac{1}{2}$ | -27708 | $\cdot 32708$ | $\cdot 37708$ | -42708 | -47708 | $6 \frac{1}{2}$ |
| $6 \frac{3}{4}$ | $\cdot 27813$ | $\cdot 32813$ | $\cdot 37813$ | -42813 | -47813 | 6 $\frac{1}{4}$ |
| 7 | $\cdot 27917$ | -32917 | -37917 | -42917 | -47917. | 7 |
| $7{ }^{\frac{1}{4}}$ | -28021 | -33021 | $\cdot 3802 \mathrm{I}$ | -43021 | -48021 | $7 \frac{1}{4}$ |
| $77^{\frac{1}{2}}$ | -28125 | $\cdot 33125$ | $\cdot 38125$ | -43125 | $\cdot 48125$ | $7{ }^{\frac{1}{2}}$ |
| $7{ }^{\frac{3}{4}}$ | $\cdot 28229$ | -33229 | $\cdot 38229$ | -43229 | -48229 | $7{ }^{\frac{3}{4}}$ |
| 8 | -28333 | -33333 | $\cdot 38333$ | -43333 | 48333 | 8 |
| $8 \frac{1}{4}$ | -28438 | - 33438 | -38438 | -43438 | -48438 | $8 \frac{1}{2}$ |
| $8 \frac{1}{2}$ | -28542 | $\cdot 33542$ | $\cdot 38542$ | -43542 | -48542 | $8 \frac{1}{3}$ |
| $8 \frac{3}{4}$ | $\cdot 28646$ | $\cdot 33646$ | $\cdot 38646$ | - 43646 | 48646 | 89 |
| 9 | $\cdot 28750^{\circ}$ | -33750 | $\cdot 38750$ | -43750 | -48750 | 9 |
| 94 | -28854 | - 33854 | $\cdot 38854$ | -43854 | -48854 | 9 ${ }^{\frac{1}{2}}$ |
| $9{ }^{\frac{1}{3}}$ | - 28958 | $\cdot 33958$ | $\cdot 38958$ | -43958 | -48958 | $9 \frac{1}{3}$ |
| $9{ }^{\frac{3}{4}}$ | -29063 | $\cdot 34063$ | $\cdot 39063$ | ${ }^{4} 44063$ | -49063 | $9{ }^{\frac{3}{4}}$ |
| 10 | -29167 | $\cdot 34167$ | -39167 | -44167 | -49167. | 10 |
| 10눈 | -2927I | -34271 | -3927 | -44271 | -4927 ${ }^{\text {c }}$ | 10, ${ }^{\frac{1}{4}}$ |
| 102 | -29375 | $\cdot 34375$ | - 39375 | $\cdot 44375$ | '49375' | $10 \frac{1}{3}$ |
| 103 ${ }^{\frac{3}{4}}$ | -29479 | -34479 | -39479 | $\cdot 44479$ | -49479 | $10 \frac{3}{4}$ |
| II | -29583' | $\cdot 34583$ | . 39588 | -44583' | - $494983^{\prime}$ | II |
| ${ }_{15}{ }^{1}$ | -29688 | $\cdot 34688$ | - 39688 | -44688' | -49688 | $11{ }^{1} \frac{1}{4}$ |
| 117 | -29792' | $\cdot 34792$ | - 39792 | -44792' | -49792 | $\underline{15}$ |
| 15 ${ }^{\frac{3}{4}}$ | -29896 | $\cdot 34896$ | - 39896 | -44896 | -49896 | 15 ${ }^{8}$ |

For explanation see pp. 21-23

THE DECIMAL CORRESPONDING TO EVERY FARTHING IN THE $£$

| Pence | 10. | 11. | 12\%. | 13 . | $14 s$ | Pence |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | -50000 | -55000 | -60000 | -65000 | '70000 | 0 |
| $0^{\frac{1}{4}}$ | $\cdot 50104$ | $\cdot 55104$ | -60104 | -65104 | 770104 | $0^{\frac{1}{4}}$ |
| $0 \frac{1}{2}$ | -50208 | -55208 | -60208 | -65208 | $\cdot 70208$ | O $\frac{1}{2}$ |
| $0 \frac{8}{4}$ | .50313 | $\cdot 55313$ | -60313 | -65313 | -70313 | $0 \frac{8}{4}$ |
| 1 | '50417 | -55417 | $\cdot 60417$ | -65417 | 70417 | 1 |
| ${ }^{1} \frac{1}{4}$ | -50521 | -55521 | -6052I | -6552I | $\cdot 70521$ | ${ }^{1} \frac{1}{4}$ |
| $1 \frac{1}{2}$ | -50625 | -55625 | $\cdot 60625$ | $\cdot 65625$ | $\cdot 70625$ | I $\frac{1}{2}$ |
| 1 \% ${ }^{\frac{3}{4}}$ | -50729 | 55729 | $\cdot 60729$ | -65729 | $\cdot 70729$ | ${ }^{\frac{3}{4}}$ |
| 2 | -50833 | -55833 | -60833 | . 65833 | $\cdot 70833$ | 2 |
| $2 \frac{1}{4}$ | -50938 | -55938 | -60938 | . 65938 | $\cdot 70938$ | $2 \frac{1}{4}$ |
| $2 \frac{1}{2}$ | $\cdot 51042$ | ${ }^{56042}$ | . 61042 | -66042 | $\cdot 71042$ | $2 \frac{1}{2}$ |
| $2{ }^{\frac{8}{4}}$ | $\cdot 51146$ | '56146 | 61146 | -66146 | $\cdot 71146$ | $2 \frac{3}{4}$ |
| 3 | $\cdot 51250$ | $\cdot 56250$ | . 61250 | . 66250 | $\cdot 71250$ | 3 |
| $3 \frac{1}{4}$ | $\cdot 51354$ | -56354 | -61354 | - 66354 | $\cdot 71354$ | 3 ${ }^{\frac{3}{2}}$ |
| $3 \frac{1}{2}$ | -51458 | -56458 | -61458 | - 66458 | $\cdot 71458$ | $3^{\frac{1}{2}}$ |
| $3^{\frac{3}{4}}$ | $\cdot 51563$ | $\cdot 56563$ | . 61563 | -66563 | 71563 | $3{ }^{\frac{3}{4}}$ |
| 4 | $\cdot 51667$ | -56667 | -61667 | -66667 | $\cdot 71667$ | 4 |
| $4 \frac{3}{4}$ | -51771 | -5677I | -6177I | -66771 | 7177 I | $4^{\frac{1}{4}}$ |
| 4 $\frac{1}{2}$ | -51875 | - 56875 | . 61875 | . 66875 | $\checkmark 71875$ | 4 ${ }^{\frac{1}{2}}$ |
| 4 ${ }^{\frac{8}{4}}$ | -51979 | $\cdot 56979$ | $\cdot 61979$ | $\cdot 66979$ | 71979 | $4{ }^{\frac{3}{4}}$ |
| 5 | $\cdot 52083$ | $\cdot 57083$ | . 62083 | .67083 | 72083 |  |
| 5 | ${ }^{5} 52188$ | -57188 | . 62188 | -67188 | $\checkmark 72188$ | 5 ${ }^{\frac{1}{1}}$ |
| 5 5 | -52292 | . 57292 | . 622292 | . 67292 | .72292 .72396 | $5^{\frac{1}{2}}$ |
| $5 \frac{8}{4}$ | $\cdot 52396$ | -57396 | '62396 | -7396 | $\cdot 72396$ | 5每 |
| 6 | -52500 | -57500 | . 62500 | $\cdot 67500$ | $\cdot 72500$ | 6 |
| $6 \frac{1}{4}$ | -52604 | -57604 | -62604 | $\cdot 67604$ | $\cdot 72604$ | 61 |
| $6 \frac{1}{2}$ | $\cdot 52708$ | $\cdot 57708$ | $\cdot 62708$ | -67708 | $\cdot 72708$ | $6 \frac{1}{2}$ |
| 6若 | $\cdot 52813$ | $\cdot 57813$ | $\cdot 62813$ | $\cdot 67813$ | $\cdot 72813$ | $6 \frac{3}{4}$ |
| 7 | -52917 | -57917 | $\cdot 62917$ | -67917 | 72917 | 7 |
| 7 ${ }^{\frac{1}{1}}$ | -5302I | -58021 | $\cdot 63021$ | -68021 | ${ }^{7} 73021$ | $7{ }^{7}$ |
| $7 \frac{1}{2}$ | -53125 | $\cdot 58125$ | $\cdot 63125$ | -68125 | $\cdot 73125$ | $7{ }^{7 \frac{1}{2}}$ |
| $7{ }^{\frac{1}{4}}$ | -53229 | '58229 | -63229 | -68229 | -73229 | $7{ }^{\frac{3}{4}}$ |
| 8 | -53333 | -58333 | -63333 | -68333 | $\cdot 73333$ | 8 |
| $8 \frac{1}{4}$ | -53438 | -58438 | $\cdot 63438$ | -68438 | -73438 | $8 \frac{1}{4}$ |
| $8 \frac{1}{2}$ | - 53542 | $\cdot 58542$ | -63542 | - 68542 | $\cdot 73542$ | $8 \frac{1}{2}$ |
| $8 \frac{8}{4}$ | -53646 | -58646 | - 63646 | -68646 | $\cdot 73646$ | 84 $\frac{3}{4}$ |
| 9 | -53750 |  |  |  | $\cdot 73750$ |  |
| $9{ }^{9}$ | -53854 | -58854 | . 63854 | . 688854 | -73854 | $9{ }^{9}$ |
| $9^{9}$ | - 53958 | -58958 | . 63958 | -68958 | $\cdot 73958$ | $9{ }^{3}$ |
| $9{ }^{\text {a }}$ | -54063 | -59063 | $\cdot 64063$ | -69063 | 74063 | 94 |
| 10 | -54167 | -59167 | -64167 | -69167 | 74167 | 10 |
| 10 ${ }^{\frac{1}{4}}$ | $\cdot 54271$ | $\cdot 59271$ | -64271 | -69271 | $\cdot 7427$ I | $10 \frac{1}{4}$ |
| $1{ }^{10}$ | . 54375 | -59375 | -64375 | -69375 | $\cdot 74375$ | $10^{\frac{1}{2}}$ |
| 10 $\frac{3}{4}$ | -54479 | -59479 | -64479 | -69479 | $\cdot 74479$ | $10 \frac{3}{4}$ |
| 11 | -54583 | -59583 | $\cdot 64583$ | -69583 | $\cdot 74583$ | 11 |
| 112 $\frac{1}{4}$ | -54688 | -59688 | -64688 | -69688 | $\cdot 74688$ | $1{ }^{1} \frac{1}{4}$ |
| $\underline{11} \frac{1}{2}$ | -54792 | -59792 | $\cdot 64792$ | -69792 | 74792 | $\mathrm{II}^{\frac{1}{3}}$ |
| $11 \frac{3}{4}$ | . 54896 | -59896 | $\cdot 64896$ | $\cdot 69896$ | -74896 | 113 |

## THE DECIMAL CORRESPONDING TO EVERY FARTHING IN THE \&

| Pence | 15 s | $16 s$ | 17 s | $18 s$ | $19 s$ | Pence |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | -75000 | . 80000 | . 85000 | -90000 | -95000 | 0 |
| $0 \frac{1}{4}$ | $\cdot 75104$ | . 80104 | . 85104 | -90104 | ${ }^{9} 95104$ | $0 \frac{1}{4}$ |
| $0 \frac{1}{2}$ | -75208 | -80208 | . 85208 | -90208 | -95208 | O2 |
| $0 \frac{3}{4}$ | $\cdot 75313$ | .80313 | -85313 | -90313 | -95313 | 0 $\frac{8}{4}$ |
| I | -75417 | -80417 | .85417 | -90417 | -95417 | 1 |
| $1 \frac{1}{4}$ | $\cdot 75521$ | -8052I | -8552I | '90521 | '9552 | I $\frac{1}{4}$ |
| $1{ }^{2}$ | $\cdot 75625$ | -80625 | -85625 | -90625 | -95625 | $1 \frac{1}{2}$ |
| I $\frac{3}{4}$ | -75729 | . 80729 | -85729 | -90729 | -95729 | 1 $\frac{3}{4}$ |
| 2 | $\cdot 75833$ | . 80833 | . 85833 | -90833 | -95833 | 2 |
| $2 \frac{1}{4}$ | $\cdot 75938$ | -80938 | . 85938 | -90938 | $\cdot 95938$ | $2 \frac{1}{4}$ |
| $2 \frac{1}{2}$ | $\cdot 76042$ | .81042 | . 86042 | '91042 | -96042 | 23 |
| $2 \frac{3}{4}$ | $\cdot 76146$ | -8II46 | .86I46 | '91146 | -96146 | $2 \frac{3}{4}$ |
| 3 | $\cdot 76250$ | . 81250 | . 86250 | '91250 | -96250 | 3 |
| $3 \frac{1}{4}$ | $\cdot 76354$ | .81354 | . 86354 | .91354 | -96354 | 31 |
| $3 \frac{1}{2}$ | '76458 | -81458 | -86458 | -91458 | '96458 | $3 \frac{1}{2}$ |
| $3 \frac{18}{4}$ | -76563 | .81563 | .86563 | $\cdot 91563$ | $\cdot 96563$ | $3 \frac{3}{4}$ |
| 4 | 76667 | .81667 | . 86667 | '91667 | -96667 | 4 |
| $4 \frac{1}{4}$ | 7677 I | .81771 | .86771 | -91771 | -96771 | $4 \frac{1}{4}$ |
| $4 \frac{1}{2}$ | $\cdot 76875$ | -81875 | . 86875 | $\cdot 91875$ | '96875 | $4 \frac{1}{2}$ |
| $4{ }^{\frac{3}{4}}$ | $\cdot 76979$ | -81979 | -86979 | -91979 | $\cdot 96979$ | 4 ${ }^{\frac{3}{4}}$ |
|  | $\cdot 77083$ | .82083 | .87083 | $\cdot 92083$ | -97083 |  |
| $5 \frac{1}{4}$ | -77188 | . 82188 | -87188 | $\cdot 92188$ | $\cdot 97188$ | $5 \frac{1}{4}$ |
| $5 \frac{1}{2}$ | -77292 | . 82292 | -87292 | -92292 | -97292 | $5 \frac{1}{2}$ |
| $5 \frac{8}{4}$ | -77396 | . 82396 | -87396 | '92396 | '97396 | $5 \frac{3}{4}$ |
| 6 | -77500 | . 82500 | -87500 | -92500 | '97500 | 6 |
| $6 \frac{1}{4}$ | -77604 | -82604 | -87604 | -92604 | -97604 | $6 \frac{1}{4}$ |
| $6 \frac{1}{2}$ | -77708 | -82708 | -87708 | -92708 | -97708 | $6 \frac{1}{2}$ |
| $6 \frac{3}{4}$ | $\cdot 77813$ | -82813 | -87813 | -92813 | -97813 | $6 \frac{3}{4}$ |
|  | -77917 | -82917 | -87917 | -92917 | -97917 |  |
| $7 \frac{1}{4}$ | -78021 | .83021 | -88021 | -9302 | -98021 | $7 \frac{1}{4}$ |
| $7 \frac{1}{2}$ | $\cdot 78125$ | .83125 | .88125 | . 93125 | -98125 | $7 \frac{1}{2}$ |
| $7 \frac{3}{4}$ | $\cdot 78229$ | .83229 | -88229 | '93229 | -98229 | $7 \frac{8}{4}$ |
| 8 | $\cdot 78333$ | -83333 | . 88333 | '93333 | -98333 | 8 |
| 84 | 78438 | -83438 | -88438 | -93438 | -98438 | $8 \frac{1}{4}$ |
| $8{ }^{\frac{1}{2}}$ | $\cdot 78542$ | -83542 | . 885442 | '93542 | -98542 | $8 \frac{1}{2}$ |
| $8 \frac{3}{4}$ | $\cdot 78646$ | -83646 | -88646 | '93646 | -98646 | 89 |
| 9 | $\cdot 78750$ | . 83750 | . 88750 | '93750 |  |  |
| $9 \frac{1}{4}$ | $-78854$ | . 83854 | . 88854 | -93854 | -98854 | $9 \frac{1}{4}$ |
| $9 \frac{1}{2}$ | $\cdot 78958$ | . 83958 | . 88958 | '93958 | -98958 | $9 \frac{1}{2}$ |
| $9{ }^{4}$ | $\cdot 79063$ | -84063 | -89063 | '94063 | $\cdot 99063$ | 94 |
| 10 | -79167 | -84167 | -89167 | '94167 | -99167 | 10 |
| 107 | $\cdot 79271$ | -84271 | .89271 | -94271 | . 99271 | 101 ${ }^{1}$ |
| $10 \frac{1}{2}$ | $\cdot 79375$ | -84375 | . 89375 | '94375 | -99375 | 10, ${ }^{\frac{1}{2}}$ |
| 103 ${ }^{3}$ | $\cdot 79479$ | -84479 | -89479 | '94479 | -99479 | 104 |
| II | '79583 | . 84583 |  | $94583$ | $99583$ |  |
| II $\frac{1}{4}$ | -79688 | -84688 | . 89688 | '94688 | -99688 | 119 |
| II $\frac{1}{2}$ | -79792 | .84792 | . 89792 | '94792 | -99792 | 112 |
| II $\frac{8}{4}$ | -79896 | -84896 | -89896 | '94896 | -99896 | 11 缶 |

For explanation see pp. 21-23

# MORTALITY TABLES 

## SHOWING THE <br> EXPECTATION OF LIFE

AND THE
NUMBERS SURVIVING EACH YEAR

ACCORDING TO VARIOUS MORTALITY TABLES

THE EXPECTATION, OR AVERAGE DURATION, OF LIFE

| $\begin{aligned} & \text { Com- } \\ & \text { pleted } \\ & \text { Agc } \end{aligned}$ | $\left.\begin{array}{\|c\|} \text { Nortli. } \\ \text { ampton } \\ \text { Experience } \end{array} \right\rvert\, \begin{gathered} 1780 \\ 1780 \end{gathered}$ | Carlisle 1815 | $\left\{\left.\begin{array}{c} \text { Equitable } \\ \text { Society's } \\ \text { Experiynce } \\ -\overline{1834} \end{array} \right\rvert\,\right.$ | $\left\lvert\, \begin{gathered} \text { seventeen } \\ \text { Oftitecs." } \\ \text { Experience } \\ 1843 \\ 1843 \end{gathered}\right.$ | $\left\lvert\, \begin{gathered} \text { English } \\ \text { Experience } \\ \text { No. } 3 \text { (Males) } \\ \overline{1864} \end{gathered}\right.$ | $\left\lvert\, \begin{gathered} \text { Actuaries' Hm. } \\ \begin{array}{c} \text { Acualthy Males } \\ \text { Hxperience } \end{array} \\ \mathbf{1 8 6 9} \end{gathered}\right.$ | $\begin{gathered} \text { Com- } \\ \text { pleted } \\ \text { Age } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 5 | $\begin{aligned} & \text { Years } \\ & 25^{\prime} .18 \\ & 40.84 \end{aligned}$ | $\begin{aligned} & \text { Years } \\ & 38 \cdot 72 \\ & 5 \mathrm{I} \cdot 25 \end{aligned}$ | Years ... | Years $\ldots$ | Years 39.91 49.7 | Years $\ldots$ | 5 |
| 10 | 39.78 | $48 \cdot 82$ | $48 \cdot 83$ | 48.36 | 47.05 | 50.291 | 10 |
| II | $39 \cdot 14$ | 48.04 | $48 \cdot 02$ | $47 \cdot 68$ | $46 \cdot 31$ | 49.536 | II |
| 12 | 38.49 | $47 \cdot 27$ | $47 \cdot 20$ | $47^{\circ} \mathrm{OI}$ | $45 \cdot 54$ | 48.733 | 12 |
| 13 | 37.83 | $46 \cdot 51$ | $46 \cdot 40$ | $46 \cdot 33$ | 44.76 | $47 \cdot 893$ | 13 |
| 14 | 37-17 | 45.75 | $45 \cdot 60$ | $45 \cdot 64$ | 43.97 | 47.032 | 14 |
| 15 | $36 \cdot 51$ | 45 '00 | 44.81 | 44.96 | 43.18 | $46 \cdot 161$ | 15 |
| 16 | $35 \cdot 85$ | $44 \cdot 27$ | $44^{\circ} \mathrm{O}$ | $44 \cdot 27$ | 42.40 | $45 \cdot 292$ | 16 |
| 17 | 35.20 | 43.57 | $43 \cdot 27$ | 43.58 | 41.64 | 44.438 | 17 |
| 18 | $34 \cdot 58$ | $42 \cdot 87$ | $42 \cdot 52$ | $42 \cdot 88$ | $40 \cdot 90$ | $43 \cdot 609$ | 18 |
| 19 | 33.99 | $42 \cdot 17$ | 4178 | 42'19 | 40•17 | 42.817 | 19 |
| 20 | 33.43 | 41*46 | 41 -06 | 41*49 | 39.48 | 42.061 | 20 |
| 21 | $32 \cdot 90$ | 40'75 | $40 \cdot 33$ | $40 \cdot 79$ | $38 \cdot 80$ | $41 \cdot 326$ | 21 |
| 22 | $32 \cdot 39$ | $40 \cdot 04$ | 39.60 | 40'09 | $38 \cdot 13$ | $40 \cdot 603$ | 22 |
| 23 | 31.88 | 39.31 | 38.88 | 39.39 | 37.46 | 39.879 | 23 |
| 24 | 31.36 | $38 \cdot 59$ | $38 \cdot 16$ | 38.68 | $36 \cdot 79$ | $39 \cdot 147$ | 24 |
| 25 | $30 \cdot 85$ | 37.86 | 37.44 | 37.98 | 36.12 | 38.405 | 25 |
| 26 | $30 \cdot 33$ | $37 \cdot 14$ | $36 \cdot 73$ | 37.27 | 35.44 | $37 \cdot 658$ | 26 |
| 27 | 29.82 | 36.4 I | $36 \cdot 02$ | 36.56 | 34.77 | $36 \cdot 908$ | 27 |
| 28 | 29.30 | $35 \cdot 69$ | 35.33 | 35.86 | 34.10 | $36 \cdot 162$ | 28 |
| 29 | 28.79 | 35.00 | 34.65 | 35.15 | 33.43 | 35.419 | 29 |
| 30 | 28.27 | 34.34 | 33.98 | 34.43 | $32 \cdot 76$ | 34.681 | 30 |
| 3 I | 27.76 | 33.68 | 33.30 | 33.72 | 32.09 | 33.946 | 31 |
| 32 | 27.24 | 33.03 | 32.64 | 33.01 | 31.42 | 33.213 | 32 |
| 33 | 26.72 | 32.36 | 31.98 | 32.30 | $30 \cdot 74$ | 32.48 I | 33 |
| 34 | 26.20 | 31.68 | $31 \cdot 32$ | 31.58 | 30.07 | 3 I 748 | 34 |
| 35 | 25.68 | 31.00 | $30 \cdot 66$ | $30 \cdot 87$ | 29.40 | 31.016 | 35 |
| 36 | 25.16 | $30 \cdot 32$ | $30 \cdot 01$ | $30 \cdot 15$ | 28.73 | $30 \cdot 286$ | 36 |
| 37 | 24.64 | 29.64 | 29.35 | 29.44 | 28.06 | 29.560 | 37 |
| 38 | 24.12 | 28.96 | 28.70 | 28.72 | 27.39 | 28.838 | 38 |
| 39 | 23.60 | $28 \cdot 28$ | 28.05 | 28.00 | 26.72 | 28.118 | 39 |
| 40 | 23.08 | 27.61 | 27.40 | 27.28 | 26.06 | 27.399 | 40 |
| 41 | 22.56 | $26 \cdot 97$ | $26 \cdot 74$ | $26 \cdot 56$ | 25.39 | 26.679 | 4 I |
| 42 | 22.04 | 26.34 | $26 \cdot 07$ | 25.84 | 24.73 | 25.956 | 42 |
| 43. | 21.54 | 25.71 | 25.40 | $25 \cdot 12$ | 24.07 | 25.233 | 43 |
| 44 | 21.03 | 25.09 | 24.75 | 24.40 | 23.41 | 24.511 | 44 |
| 45 | 20.52 | 24.46 23.82 | 24.10 | 23.69 22.97 | 22.76 | 23.792 23.979 |  |
| 46 | 20.02 19.51 | $23 \cdot 82$ $23 \cdot 17$ | 23.44 22.78 | 22.97 | 22.11 21.46 | 23.079 22.375 | 46 |
| 47 | 19.51 19.00 | $23 \cdot 17$ 22.50 | 22.78 22.12 | $22 \cdot 27$ $2 \mathrm{r} \cdot 56$ | 21.46 20.82 | 22.375 21.679 | 47 |
| 48 | 19.00 18.49 | 22.50 21.85 | 22.12 21.47 | 21.56 20.87 | 20.82 $20 \cdot 17$ | 21.679 20.989 | 48 49 |

For explanation see pp. 23-25

| THE EXPECTATION, OR AVERAGE DURATION, OF LIFE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Com- | $\left\lvert\, \begin{gathered} \text { North- } \\ \text { gmpton } \\ \text { Experience } \end{gathered}\right.$ | Carlisle Experience | Equitable society's Experience | ' Seventeen Offices' Experience | English Experience No. 3 (Males) | $\left(\begin{array}{c} \text { Actuaries' HM. } \\ \text { (Healthyy Males) } \\ \text { Experience } \end{array}\right.$ | Com- |
| Age | 1780 | 1815 | 1834 | 1843 | I864 | 1869 | Age |
|  | Years | Years | Years | Years | Years | Year |  |
| 50 | 17.99 | 2 I II | 20.83 | $20 \cdot 18$ | 19.54 | $20 \cdot 306$ | 50 |
| 51 | 17.50 | $20 \cdot 39$ | 20.20 | 19.50 | 18.90 | 19.627 | 51 |
| 52 | 17.02 | 19.68 | 19.59 | 18.82 | 18.28 | 18.951 | 52 |
| 53 | 16.54 | 18.97 | 19.00 | $18 \cdot 16$ | 17.67 | $18 \cdot 281$ | 53 |
| 54 | 16.06 | 18.28 | 18.43 | 17.50 | 17.06 | 17.618 | 54 |
| 55 | 15.58 | 17.58 | 17.85 | 16.86 | 16.45 | 16.962 | 55 |
| 56 | 15.10 | 16.89 | 17.28 | 16.22 | 15.86 | 16.316 | 56 |
| 57 | 14.63 | 16.21 | 16.71 | 15.59 | 15.26 | 15.679 | 57 |
| 58 | 14.15 | 15.55 | 16.15 | 14.97 | 14.68 | 15.052 | 58 |
| 59 | 13.68 | 14.92 | 15.60 | 14.37 | 14.10 | 14.435 | 59 |
| 60 | 13.21 | 14.34 | 15.06 | 13.77 | 13.53 | 13.830 | 60 |
| 61 | 12.75 | 13.82 | 14.51 | ${ }^{13} 3.18$ | 12.96 | 13.237 | 61 |
| 62 | 12.28 | 13.31 | 13.96 | 12.61 | 12.41 | 12.659 | 62 |
| 63 | 11.81 | 12.81 | 13.42 | 12.05 | 11.87 | 12.095 | 63 |
| 64 | 11.35 | 12.30 | 12.88 | II 51 | 11.34 | II-547 | 64 |
| 65 | 10.88 | I 1 79 | 12.35 | 10.97 | 10.82 | 11.012 | 65 |
| 66 | 10.42 | I 1 27 | I 1.83 | 10.46 | $10 \cdot 32$ | $10 \cdot 489$ | 66 |
| 67 | $9 \cdot 96$ | 10.75 | 11.32 | 9.96 | $9 \cdot 83$ | $9 \cdot 977$ | 67 |
| 68 | $9 \cdot 50$ | 10.23 | 10.82 | $9 \cdot 47$ | $9 \cdot 36$ | 9.475 | 68 |
| 69 | 9.05 | 970 | 10.32 | $9 \cdot 0$ | $8 \cdot 90$ | 8.980 | 69 |
| 70 | $8 \cdot 60$ | 9•18 | $9 \cdot 84$ | $8 \times 54$ | $8 \cdot 45$ | $8 \cdot 495$ | 70 |
| 71 | $8 \cdot 17$ | $8 \cdot 65$ | $9 \cdot 36$ | $8 \cdot 10$ | 8.03 | $8 \cdot 026$ | 71 |
| 72 | $7{ }^{7} 74$ | $8 \cdot 16$ | $8 \cdot 88$ | $7 \cdot 67$ | $7 \cdot 62$ | 7.575 | 72 |
| 73 | $7 \cdot 33$ | 772 | $8 \cdot 42$ | 726 | 7.22 | $7 \cdot 148$ | 73 |
| 74 | $6 \cdot 92$ | 7.33 | 797 | $6 \cdot 86$ | $6 \cdot 85$ | $6 \cdot 749$ | 74 |
| 75 | $6 \cdot 54$ | 7.01 | $7 \cdot 52$ | $6 \cdot 48$ | $6 \cdot 49$ | $6 \cdot 376$ | 75 |
| 76 | $6 \cdot 18$ | $6 \cdot 69$ | 7.08 | $6 \cdot 11$ | $6 \cdot 15$ | $6 \cdot 017$ | 76 |
| 77 | 5.83 | $6 \cdot 40$ | $6 \cdot 6$ | $5 \cdot 76$ | $5 \cdot 82$ | $5 \cdot 674$ | 77 |
| 78 | $5 \cdot 48$ | $6 \cdot 12$ | $6 \cdot 20$ | $5 \cdot 42$ | $5 \cdot 51$ | $5 \cdot 344$ | 78 |
| 79 | $5 \cdot 11$ | $5 \cdot 80$ | $5 \% 8$ | $5 \cdot 09$ | $5 \cdot 21$ | 5.025 | 79 |
| 80 | 475 | $5 \cdot 5 \mathrm{I}$ | $5 \cdot 38$ | 4788 | 4.93 | 4.719 | 80 |
| $8 \mathrm{8I}$ | 4.41 | 5.21 | $5 \cdot 0$ | 4.48 | 4.66 | 4.433 | 81 |
| 82 | 4.09 | 4.93 | 4.63 | $4 \cdot 18$ | 4.41 | 4.171 | 82 |
| 83 | 3.80 | $4 \cdot 6$ | 430 | 3.90 | 4.17 | 3.930 | 83 |
| 84 | $3 \cdot 58$ | 439 | 4.00 | 3.63 | 3.95 | 3.713 | 84 |
| 85 | $3 \cdot 37$ | $4 \cdot 12$ | 373 | $3 \cdot 36$ | 3.73 | 3.511 | 85 |
| 86 | $3 \cdot 19$ | 3'90 | $3 \cdot 50$ | 3.10 2.8 | 3.53 | $3 \cdot 310$ | 86 |
| 87 | 3.01 2.86 | 3.71 3.59 | 3.31 3.11 | 2.84 2.59 | 3.34 3.16 | 3.101 2.884 | 87 |
| 888. | 2.86 2.66 | 3.59 3.47 | 3.11 2.91 | 2.59 2.35 | 3.16 3.00 | 2.884 2.634 | 88 89 |
| 90 | 2.41 | $3 \cdot 28$ | $2 \cdot 65$ | $2 \cdot 11$ | $2 \cdot 84$ | $2 \cdot 357$ | 90 |
| 91 | $2 \cdot 09$ | $3 \cdot 26$ | $2 \cdot 36$ | I.89 | $2 \cdot 69$ | 2.077 | 91 |
| 92 | 1•75 | $3 \cdot 37$ | $2 \cdot 03$ | 1.67 | $2 \cdot 55$ | $1 \cdot 795$ | 92 |
| 93 | I 37 | 3.48 |  | 147 | 2.41 | 1.496 | 93 |
| 94 | 1.05 | $3 \cdot 53$ | $1 \cdot 31$ | $1 \cdot 28$ | 2.29 | $1 \cdot 204$ | 94 |
| 95 | $\cdot 75$ | 3.53 | $\begin{array}{r}1.05 \\ \hline 75\end{array}$ | I.12 | 2.17 2.06 | .930 |  |
| 96 | -50 | 3.46 | $\cdot 75$ | . 99 | 2.06 | . 680 | 96 |
| 97 | $\ldots$ | 3.28 3.07 | -50 | $\cdot 89$ | 1.95 1.85 | ${ }^{5} 500$ | 97 |
| 98 | $\cdots$ | 3.07 2.77 | $\cdots$ | $\cdot 75$ | I 85 I 76 | ... | 98 |
| 99 | $\ldots$ | $2 \cdot 77$ | $\cdots$ | '50 | 176 | ... | 99 |


| ENGLISH LIFE TABLE, No. 3 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { Age at } \\ \text { Beginning } \\ \text { of Year } \end{gathered}$ | $\begin{gathered} \text { Number Living } \\ \text { at } \\ \text { Beginning of Year } \end{gathered}$ | $\begin{aligned} & \text { Number } \\ & \text { Dying during } \\ & \text { the Year } \end{aligned}$ | Number Living at Beginning of Year |  | $\begin{aligned} & \text { Age at } \\ & \text { Beginning } \\ & \text { of Year } \end{aligned}$ |
|  |  |  | Males | Females |  |
| 0 | 1,000,000 | 149,493 | 511,745 | 488,255 | 0 |
| 1 | 850,507 | 53,680 | 428,026 | 422,481 | 1 |
| 2 | 796,827 | 28,238 | 400,505 | 396,322 | 2 |
| 3 | 768,589 | 18,456 | 386,290 | 382,299 | 3 |
| 4 | 750,133 | 13,315 | 377,077 | 373,056 | 4 |
| 5 | 736,818 | 9,899 | 370,358 | 366,460 | 5 |
| 6 | 726,919 | 7,768 | 365,325 | 361,594 | 6 |
| 7 | 719,151 | 6,559 | 361, 372 | 357,779 | 7 |
| 8 | 712,592 | 5,458 | 358,062 | 354,530 | 8 |
| 9 | 707, 134 | 4,625 | 355,328 | 351,806 | 9 |
| 10 | 702,509 | 4,028 | 353,031 | 349,478 | 10 |
| 11 | 698,481 | 3,637 | 351,048 | 347,433 | 11 |
| 12 | 694,844 | 3,43I | 349,272 | 345,572 | 12 |
| 13 | 691,413 | 3,382 | 347,606 | 343,807 | 13 |
| 14 | 688,031 | 3,468 | 345,969 | 342,062 | 14 |
| 15 | 684,563 | 3,669 | 344,290 | 340,273 | 15 |
| 16 | 680,894 | 3,957 | 342,509 | 338,385 | 16 |
| 17 | 676,937 | 4,317 | 340,581 | 336,356 | 17 |
| 18 | 672,620 | 4,720 | 338,469 | 334, 151 | 18 |
| 19 | 667,900 | 5,150 | 336,149 | 331,751 | 19 |
| 20 | 662,750 | 5,583 | 333,608 | 329, 142 | 20 |
| 21 | 657,167 | 5,668 | 330,844 | 326,323 | 21 |
| 22 | 651,499 | 5,748 | 328,043 | 323,456 | 22 |
| 23 | 645,75I | 5,820 | 325,207 | 320,544 | 23 |
| 24 | 639,93I | 5,886 | 322,339 | 317,592 | 24 |
| 25 | 634,045 | 5,950 | 319,442 | 314,603 | 25 |
| 26 | 628,095 | 6,009 | 316,516 | 311,579 | 26 |
| 27 | 622,086 | 6,065 | 313,562 | 308,524 | 27 |
| 28 | 616,02I | 6,12I | 310,581 | 305,440 | 28 |
| 29 | 609,900 | 6,176 | 307,572 | 302,328 | 29 |
| 30 | 603,724 | 6,23I | 304,534 | 299,190 | 30 |
| $3 \mathrm{3I}$ | 597,493 | 6,287 | 301,466 | 296,027 | 31 |
| 32 | 591,206 | 6,343 | 298,366 | 292,840 | 32 |
| 33 | 584,863 | 6,404 | 295,232 | 289,631 | 33 |
| 34 | 578,459 | 6,466 | 292,06I | 286,398 | 34 |
|  |  |  | 288,850 |  |  |
| 36 | 565,460 | 6,601 | 285,596 | 279,864 | 36 |
| 37 | 558,859 | 6,678 | 282,296 | 276,563 | 37 |
| 38 39 | 552,181 | 6,756 | 278,944 | 273,237 | 38 |
| 39 | 545,425 | 6,841 | 275,538 | 269,887 | 39 |
| 40 | 538,584 | 6,931 | 272,073 | 266,51 1 | 40 |
| 4 I | 531,653 | 7,027 | 268,544 | 263,109 | 4 I |
| 42 | 524,626 | 7,127 | 264,948 | 259,678 | 42 |
| 43 | 517,499 | 7,236 | 261,280 | 256,219 | 43 |
| 44 | 510,263 | 7,348 | 257,534 | 252,729 | 44 |
| 45 | 502,915 | 7,467 | 253,708 | 249,207 | 45 |
| 46 | 495,448 | 7,592 | 249,796 | 245,652 | 46 |
| 47 | 487,856 | 7,722 | 245,795 | 242,06I | 47 |
| 48 | 480, 134 | 7,857 | 241,700 | 238,434 | 48 |
| 49 | 472,277 | 7,997 | 237,508 | 234,769 | 49 |

For explanation see pp. 23-25

## MORTALITY TABLES

ENGLISH LIFE TABLE, No. 3

| $\left\|\begin{array}{c} \text { Age at } \\ \text { Beginning } \\ \text { of Year } \end{array}\right\|$ | $\begin{gathered} \text { Number Living } \\ \text { at } \\ \text { Beginning of Year } \end{gathered}$ | $\begin{aligned} & \text { Number } \\ & \text { Dying during } \\ & \text { the Year } \end{aligned}$ | Number Living at Beginningof Year |  | Age at of Year |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Males | Females |  |
| 50 | 464,280 | 8,141 | 233,216 | 231,064 | 50 |
| 51 | 456,139 | 8,414 | 228,821 | 227,318 | 51 |
| 52 | 447,725 | 8,590 | 224, 195 | 223,530 | 52 |
| 53 | 439, 135 | 8,761 | 219,437 | 219,698 | 53 |
| 54 | 430,374 | 9,259 | 214,552 | 215,822 | 54 |
| 55 | 421,115 | 9,583 | 209,539 | 211,576 | 55 |
| 56 | 411,532 | 9,909 | 204,395 | 207, I37 | 56 |
| 57 | 401,623 | 10,245 | 199,114 | 202,509 | 57 |
| 58 | - 391,378 | 10,593 | 193,686 | 197,692 | 58 |
| 59 | 380,785 | 10;958 | 188,102 | 192,683 | 59 |
| 60 | 369,827 | 11,338 | 182,350 | 187,477 | 60 |
| 61 | 358,489 | 11,737 | 176,421 | 182,068 | 61 |
| 62 | 346,752 | 12,149 | 170,303 | 176,449 | 62 |
| 63 | 334,603 | 12,572 | 163,989 | 170,614 | 63 |
| 64 | $322,03 \mathrm{I}$ | 13,002 | 157,474 | 164,557 | 64 |
| 65 | 309,029 | 13,430 | 150,754 | 158,275 | 65 |
| 66 | 295,599 | 13,846 | 143,833 | 151,766 | 66 |
| 67 | 281,753 | 14,244 | 136,718 | 145,035 | 67 |
| 68 | 267,509 | 14,607 | 129,42r | 138,088 | 68 |
| 69 | 252,902 | 14,925 | 121,963 | 130,939 | 69 |
| 70 | 237,977 | 15,184 | 114,370 | 123,607 | 70 |
| 71 | 222,793 | 15,369 | 106,675 | 116,118 | 71 |
| 72 | 207,424 | 15,468 | 98,919 | 108,505 | 72 |
| 73 | 191,956 | 15,469 | 91,149 | 100,807 | 73 |
| 74 | 176,487 | 15,363 | 83,416 | 93,071 | 74 |
| 75 | 161, 124 | 15,136 | 75,777 | 85,347 | 75 |
| 76 | 145,988 | 14,789 | 68,294 | 77,694 | 76 |
| 77 | 131,199 | 14,319 | 61,026 | 70,173 | 77 |
| 78 | 116,880 | 13,726 | 54,036 | 62,844 | 78 |
| 79 | 103, I54 | 13,021 | $47,38 \mathrm{I}$ | 55,773 | 79 |
| 80 | 90,133 | 12,214 | 41,115 | 49,018 | 80 |
| 81 | 77,919 | 11,320 | 35,283 | 42,636 | 81 |
| 82 | 66,599 | 10,358 | 29,922 | 36,677 | 82 |
| 83 | 56,241 | 9,352. | 25,060 | 31,181 | 83 |
| 84 | 46,889 | 8,324. | 20,71 ${ }^{\text {r }}$ | 26,178 | 84 |
| 85 | 38,565 | 7,300 | 16,877 | 21,688 | 85 |
| 86 | 31,265 | 6,298 | 13,549 | 17,716 | 86 |
| 87 | 24,967 | 5,346. | 10,709 | 14,258 | 87 |
| 88 | 19,621 | 4,459. | 8,325 | 11,296 | 88 |
| 89 | 15,162 | 3,653 | 6,360 | 8,802 | 89 |
| 90 | 11,509 | 2,933. | 4,770 | 6,739 | 90 |
| 9 x | 8,576 | 2,310 | 3,510 | 5,066 | 91 |
| 92 | 6,266 | 1,781 | 2,531 | 3,735 | 92 |
| 93 | 4,485 | 1,343 | 1,787 | 2,698 | 93 |
| 94 | 3,142 | 989 | 1,234 | 1,908 | 94 |
| 95 | 2,153 | 713 | 833 | 1,320 | 95 |
| 96 | 1,440 | 500 | 548 | 892 | 96 |
| 97 | 940 | 342 | 352 | 588 | 97 |
| 98 | 598 | 228 | 220 | 378 | 98 |
| 99 | .. | 370 | ... | ... | 99 |

MORTALITY TABLES

|  | INSTITUT | F ACTUARIES MORTALITY TABLE <br> Healithy Males (Hm.) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\underset{\text { Agegin- }}{\text { A }}$ | Number Living at Beginning of Year | NumberDyingduringtheYear | Probable Number out of every 100 <br> Alive at the Beginning of a Year |  | $\begin{aligned} & \text { Ageat at } \\ & \text { Begin- } \\ & \text { ning } \\ & \text { of } \end{aligned}$ |
| $\begin{gathered} \text { ning } \\ \text { of } \\ \text { Year } \end{gathered}$ |  |  | who will Survive the Year | $\begin{aligned} & \text { who will,Dle } \\ & \text { during the Year } \end{aligned}$ |  |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 10 | 100,000 | 490 | 99.5100 | -4900 | 10 |
| II | 99,510 | 397 | 99.6010 | 3990 | 11 |
| 12 | 99, 113 | 329 | 99.6681 | -3319 | 12 |
| 13 | 98,784 | 288 | 99-7085 | -2915 | 13 |
| 14 | 98,496 | 272 | 99.7238 | $\cdot 2762$ | 14 |
| 15 | 98,224 | 282 | 99.7129 | -2871 | 15 |
| 16 | 97,942 | 318 | 99.6753 | -3247 | 16 |
| 17 | 97,624 | 379 | 99.6118 | $\cdot 3882$ | 17 |
| 18 | 97,245 | 466 | $99 \cdot 5208$ | -4792 | I8 |
| 19 | 96,779 | 556 | $99 \cdot 4255$ | -5745 | 19 |
| 20 | 96,223 | 609 | 99.3671 | '6329 | 20 |
| 21 | 95,614 | 643 | 99.3275 | $\cdot 6725$ | 21 |
| 22 | 94,971 | 650 | 99.3156 | -6844 | 22 |
| 23 | 94,321 | 638 | 99.3236 | $\cdot 6764$ | 23 |
| 24 | 93,683 | 622 | 99.3361 | -6639 | 24 |
| 25 | 93,061 | 617 | 99.3370 | -6630 | 25 |
| 26 | 92,444 | 618 | 99.3315 | -6685 | 26 |
| 27 | 91,826 | 634 | $99 \cdot 3096$ | -6904 | 27 |
| 28 | 91,192 | 654 | 99.2828 | $\cdot 7172$ | 28 |
| 29 | 90,538 | -673 | 99.2567 | $\cdot 7433$ | 29 |
| 30 | 89,865 | 694 | 99.2277 | -7723 | 30 |
| 31 | 89,171 | 706 | 99.2083 | -7917 | 3 I |
| 32 | 88,465 | 717 | 99'1895 | .8105 | 32 |
| 33 | 87,748 | 727 | 99.1715 | -8285 | 33 |
| 34 | 87,02I | 740 | 99'1496 | -8504 | 34 |
|  | $86,28 \mathrm{I}$ | 757 | 99'1226 | . 8774 |  |
| 36 | 85,524 | 779 | 99.0891 | -9109 | 36 |
| 37 | 84,745 | 802 | 99.0536 | $\cdot 9464$ | 37 |
| 38 | 83,943 | 82 I | 99.0220 | .9780 | 38 |
| 39 | 83,122 | 838 | 98.9918 | $1 \cdot 0082$ | 39 |
| 40 | 82,284 | 848 | 98.9694 | 1.0306 | 40 |
| 4 I | 81,436 | 854 | 98.9513 | 1.0487 | 41 |
| 42 | 80,582 | 865 | 98.9266 | 1.0734 | 42 |
| 43 | 79,717 | 887 | 98.8873 | $1 \cdot 1127$ | 43 |
| 44 | 78,830 | 9 It | 98.8444 | 1'1556 | 44 |
| 45 | 77,919 | 950 | 98.7808 | I. 2192 | 45 |
| 46 | 76,969 | 996 | 98.7060 | I-2940 | 46 |
| 47 | 75,973 | 1,041 | 98.6298 | 1.3702 | 47 |
| 48 | 74,932 | 1,082 | 98.5560 | 1.4440 | 48 |
| 49 | 73,850 | 1, 124 | 98.4780 | 1.5220 | 49 |
| 50 | 72,726 | 1,160 | 98.4050 | 1.5950 | 50 |
| 51 | 71,566 | 1,193 | 98.3330 | 1.6670 | 51 |
| 52 | 70,373 | 1,235 | 98.2451 | 1.7549 | 52 |
| 53 | 69,138 67,852 | 1,286 | 98.1400 | I.8600 | 53 |
| 54 | 67,852 | 1,339 | 98.0266 | 1-9734 | 54 |

For explanation see pp. 23-25


## MORTALITY TABLES

| CARLISLE TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Age at Beginning of Year | Number Living at Beginning of Year | Number Dying during the Year | Age at Beginning of Year of Yea | Number Living at Beginning of Year | $\begin{aligned} & \text { Number Dying } \\ & \text { during the } \\ & \text { Year } \end{aligned}$ |
| 0 | 10,000 | 1,539 | 50 | 4,397 | 59 |
| 1 | 8,46I | 682 | 51 | 4,338 | 62 |
| 2 | 7,779 | 505 | 52 | 4,276 | 65 |
| 3 | 7,274 | 276 | 53 | 4,211 | 68 |
| 4 | 6,998 | 201 | 54 | 4,143 | 70 |
| 5 | 6,797 | 121 | 55 | 4,073 | 73 |
| 6 | 6,676 | 82 | 56 | 4,000 | 76 |
| 7 | 6,594 | 58 | 57 | 3,924 | 82 |
| 8 | 6,536 | 43 | 58 | 3,842 | 93 |
| 9 | 6,493 | 33 | 59 | 3,749 | 106 |
| 10 | 6,460 | 29 | 60 | 3,643 | 122 |
| 11 | 6,431 | 3 I | 61 | 3,52I | 126 |
| 12 | 6,400 | 32 | 62 | 3,395 | 127 |
| 13 | 6,368 | 33 | 63 | 3,268 | 125 |
| 14 | 6,335 | 35 | 64 | 3,143 | 125 |
| 15 | 6,300 | 39 | 65 | 3,018 | 124 |
| 16 | 6,26I | 42 | 66 | 2,894 | 123 |
| 17 | 6,219 | 43 | 67 | 2,771 | 123 |
| 18 | 6,176 | 43 | 68 | 2,648 | 123 |
| 19 | 6, 133 | 43 | 69 | 2,525 | 124 |
| 20 | 6,090 | 43 | 70 | 2,40I | 124 |
| 21 | 6,047 | 42 | 71 | 2,277 | 134 |
| 22 | 6,005 | 42 | 72 | 2,143 | 146 |
| 23 | 5,963 | 42 | 73 | 1,997 | 156 |
| 24 | 5,92I | 42 | 74 | I,84I | 166 |
| 25 | 5,879 | 43 | 75 | 1,675 | 160 |
| 26 | 5,836 | 43 | 76 | 1,515 | 156 |
| 27 | 5,793 | 45 | 77 | 1,359 | 146 |
| 28 | 5,748 | 50 | 78 | 1,213 | 132 |
| 29 | 5,698 | 56 | 79 | I,08I. | 128 |
| 30 | 5,642 | 57 | 80 | 953 | 116 |
| 31 | 5,585 | 57 | $8 \mathrm{8I}$ | 837 | 112 |
| 32 | 5,528 | 56 | 82 | 725 | 102 |
| 33 | 5,472 | 55 | 83 | 623 | 94 |
| 34 | 5,417 | 55 | 84 | 529 | 84 |
| 35 | 5,362 | 55 | 85 | 445 | 78 |
| 36 | 5,307 | 56 | 86 | 367 | 71 |
| 37 | 5,251 | 57 | 87 | 296 | 64 |
| 38 | 5,194 | 58 | 88 | 232 | 51 |
| 39 | 5,136 | 61 | 89 | 181 | 39. |
| 40 | 5,075 | 60 | 00 | 142 | 37 |
| 41 | 5,009 | 69 | 91 | 105 | 30 |
| 42 | 4,940 | 7 I | 92 | 75 | 21 |
| 43 | 4,869 | 71 | 93 | 54 | 14 |
| 44 | 4,798 | 71 | 94 | 40 | 10 |
| 45 | 4,727 | 70 | 95 | 30 | 7 |
| 46 | 4,657 | 69 | 96 | 23 | 5 |
| 47 | 4,588 | 67 | 97 | 18. | 4 |
| 48 | $4,52 \mathrm{I}$ 4,458 | 63 | 98 | 14. | 3 |
| 49 | 4,458 | 61 | 99 | 11 | 2 |

For explanation see pp. 23-25

## TABLES

COMBINING

## MORTALITY OF SINGLE LIVES <br> AND

INTEREST

| Value of an annuity on a single life accordina to thenorthampton table of mortality |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Age | $3 \%$ | 4\% | $5 \%$ | $6 \%$ | Age |
| 1 | 16.021 | 13.465 | ${ }_{11}{ }^{5} 63$ | ${ }^{1} \cdot 107$ | 1 |
| 2 | 18.599 | 15.633 | 13.420 | 11.724 | 2 |
| 3 | 19.575 | 16.462 | 14.135 | 12.348 | 3 |
| 4 | ${ }^{20.210}$ | 17.010 17.248 | 14.613 14.827 | 12.769 | 4 |
| 5 | 20.473 | 17.248 | 14.827 | 12.962 | 5 |
| 6 | $20 \cdot 727$ | $17 \cdot 482$ | 15.041 | 13.156 | 6 |
| 8 | 20.853 | 17.611 | 15.166 | 13.275 | 7 |
| 8 | 20.885 | 17.662 | 15.226 | 13.337 | 8 |
| 9 | 20.812 | 17.625 | 15.210 | 13.335 | 9 |
| 10 | 20.663 | 17.523 | 15.139 | ${ }^{13} 288$ | \% |
| 11 | 20.480 | 17.393 | 15.043 | 13.212 | 11 |
| 12 | 20.283 | 17251 | 14.937 | 13.130 | 12 |
| 13 | ${ }^{20.8081}$ | 17.103 | 14.826 | 13.044 | 13 |
| 14 | 19.872 | 16.950 | 14.710 | 12.953 | 14 |
| 15 | 19.657 | 16791 | 14.588 | 12.857 | 15 |
| 16 | 19.435 | 16.625 | 14.460 | 12.755 | 16 |
| 17 | 19.218 | 16.462 | 14.334 | 12.655 | 17 |
| 18 | $19{ }^{\text {O2, }} 3$ | 16.309 | 14.217 | 12.562 | 18 |
| 19 | 18.820 | $16 \cdot 167$ | 14.108 | 12.477 | 19 |
| 20 | 18.638 | 16.033 | 14.007 | 12.398 | 20 |
| 21 | 18.470 | 15.912 | 13.917 | 12.329 | 21 |
| 22 | 18.311 | 15.797 | 13.833 | 12.265 | 22 |
| 23 | 18.148 | 15.680 | 13.746 | ${ }^{12} 2.200$ | 23 |
| 24 | 17.883 | 15.568 | 13.658 | 12.132 | 24 |
| 25 | 17.814 | 15.438 | 13.567 | 12.063 | 25 |
| 26 | 17.642 | 15.312 | 13.473 | 11992 | 26 |
| 27 28 28 | 17.467 17.289 | 15.184 15.053 | 15.377 <br> 13.278 <br> 1 | 11.917 | $\begin{array}{r}27 \\ 28 \\ \hline\end{array}$ |
| $\begin{array}{r}28 \\ 20 \\ \hline\end{array}$ |  | 15.053 14.918 | 13.278 13.177 | 11.84 I | 28 |
| 29 30 | $17 \% 107$ 16.922 | 14.918 14.781 | 13.177 13.072 | 11.763 11.682 | 29 30 |
| 3 I | 16.732 | 14.639 | 12.965 | 11.598 | 3 I |
| 32 | 16.540 | 14.495 | 12.854 | 11.512 | 32 |
| 33 | 16.343 | 14.347 | ${ }^{12} 7440$ | 11.423 | 33 |
| 34 | 16.142 | 14.195 | 12.623 | 11.331 | 34 |
| 35 | 15.938 | 14.039 | $12 \cdot 502$ | 11.236 | 35 |
| 36 | 15.729 | 13.880 | 12.377 | 11.137 | 36 |
| 37 | 15.515 | 13.716 | 12.249 | 11.3035 | 37 |
| 38 | 15.298 | 113.548 | ${ }^{12} 2116$ | ${ }^{10.929}$ | ${ }^{38}$ |
| 39 40 | 15.075 14.848 | 13.375 13.197 | ${ }^{11} 1.979$ | 10.819 | 39 |
|  | 14.620 | 13.018 | 1183 | 10.705 | 40 |
| 42 | 14.391 | 12.838 | 11.695 11.551 | 10.589 | 4 I |
| 43 | $14 \cdot 162$ | 12.657 | 11.407 | 10.356 | 43 |
| 44 | 13.929 | 12.472 | 11.258 | 10.235 | 44 |
| 45 | 13.692 | 12.283 | 11.105 | $10 \cdot 110$ | 45 |

For explanation see pp. 25-27

VALUE OF AN ANNUITY ON A SINGLE LIFE ACCORDING TO THE NORTHAMPTON TABLE OF MORTALITY

| Age | $3 \%$ | $4 \%$ | $5 \%$ | 6\% | Age |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 46 | 13.450 | 12.089 | 10.947 | 9.980 | 46 |
| 47 | 13.203 | 11.890 | 10.784 | $9 \cdot 846$ | 47 |
| 48 | 12.951 | 11.685 | 10.616 | $9 \cdot 707$ | 48 |
| 49 | 12.693 | II 475 | 10.443 | $9 \cdot 563$ | 49 |
| 50 | 12.436 | I I $\cdot 264$ | 10.269 | 9.417 | 50 |
| 51 | $12 \cdot 183$ | 11.057 | 10.097 | $9 \cdot 273$ | 51 |
| 52 | II $933^{\circ}$ | 10.849 | 9.925 | 9.129 | 52 |
| 53 | I I 674 | 10.637 | $9 \cdot 748$ | 8-980 | 53 |
| 54 | 11.414 | 10.42 I | $9 \cdot 567$ | $8 \cdot 827$ | 54 |
| 55 | II•I50 | 10.201 | $9 \cdot 382$ | $8 \cdot 670$ | 55 |
| 56 | 10.882 | 9'977 | 9•193 | $8 \cdot 509$ | 56 |
| 57 | 10.6II | $9 \cdot 749$ | $8 \cdot 999$ | $8 \cdot 343$ | 57 |
| 58 | 10. 337 | 9.516 | $8 \cdot 801$ | 8•173 | 58 |
| 59 | 10'058 | 9.280 | $8 \cdot 599$ | 7.999 | 59 |
| 60 | 9777 | $9^{\circ} 039$ | 8-392 | $7 \cdot 820$ | 60 |
| 61 | 9.493 | $8 \cdot 795$ | 8-181 | $7 \cdot 637$ | 61 |
| 62 | $9 \cdot 205$ | $8 \cdot 547$ | $7 \cdot 966$ | $7 \cdot 449$ | 62 |
| 63 | $8 \cdot 910$ | $8 \cdot 291$ | $7 \cdot 742$ | $7 \cdot 253$ | 63 |
| 64 | $8 \cdot 6 \mathrm{II}$ | $8 \cdot 030$ | 7.514 | 7.052 | 64 |
| 65 | $8 \cdot 304$ | $7 \cdot 761$ | $7 \cdot 276$ | $6 \cdot 841$ | 65 |
| 66 | 7.994 | 7*488 | 7.034 | 6.625 | 66 |
| 67 | $7 \cdot 682$ | $7 \cdot 211$ | $6 \cdot 787$ | $6 \cdot 405$ | 67 |
| 68 | $7 \cdot 367$ | 6.930 | $6 \cdot 536$ | $6 \cdot 179$ | 68 |
| 69 | 7.051 | $6 \cdot 647$ | $6 \cdot 28$ I | 5.949 | 69 |
| 70 | $6 \cdot 734$ | 6.361 | $6 \cdot 023$ | $5 \cdot 716$ | 70 |
| 71 | $6 \cdot 418$ | $6 \cdot 076$ | 5•764 | 5.479 | 71 |
| 72 | $6 \cdot 103$ | $5 \cdot 790$ | $5 \cdot 504$ | $5 \cdot 241$ | 72 |
| 73 | $5 \cdot 794$ | $5 \cdot 507$ | $5 \cdot 245$ | $5 \cdot 004$ | 73 |
| 74 | $5 \cdot 491$ | $5 \cdot 230$ | 4.990 | 4.769 | 74 |
| 75 | 5•199 | 4 '962 | 4'744 | $4 \cdot 542$ | 75 |
| 76 | 4.925 | 4\%710 | 4.5II | 43326 | 76 |
| 77 | $4 \cdot 652$ | 4.457 | 4.277 | $4 \cdot 109$ | 77 |
| 78 | 4.372 | $4 \cdot 197$ | 4.035 | $3 \cdot 884$ | 78 |
| 79 | 4.077 | 3.921 | 3.776 | $3 \cdot 641$ | 79 |
| 80 | 3.781 | $3 \cdot 643$ | 3.515 | 3'394 | 80 |
| 81 | 3.499 | $3 \cdot 377$ | 3.263 | $3 \cdot 156$ | 81 |
| 82 | 3.229 | $3 \cdot 122$ | 3.020 | $2 \cdot 926$ | 82 |
| 83 | $2 \cdot 982$ | $2 \cdot 887$ | $2 \cdot 797$ | $2 \cdot 713$ | 83 |
| 84 | $2 \cdot 793$ | $2 \cdot 708$ | 2.627 | 2.551 | 84 |
| 85 | $2 \cdot 620$ | $2 \cdot 543$ | 2.471 | $2 \cdot 402$ | 85 |
| 86 | 2.462 | $2 \cdot 393$ | 2.328 | $2 \cdot 266$ | 86 |
| 87 | $2 \cdot 312$ | 2.25 I | $2 \cdot 193$ | $2 \cdot 138$ | 87 |
| 88 | 2.185 | $2 \cdot 131$ | 2.080 | $2 \cdot 031$ | 88 |
| 89 | $2 \cdot \mathrm{OI} 3$ | I 967 | I 9224 | I 888 | 89 |
| 90 | I'794 | 1758 | I'723 | I 689 | 90 |

VAIUE OF AN ANNOITY ON A SINGLE LIFE ACCORDING TO THE CARLISLE TABLE OF MORTALITY

| Age | $3 \%$ | $4 \%$ | $5 \%$ | $6 \%$ | $7 \%$ | $8 \%$ | Age |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 20.085 | $16 \cdot 556$ | 13.995 | 12.078 | $10 \cdot 605$ | 9.439 | 1 |
| 2 | 21.501 | 17728 | 14.983 | 12.925 | 11.342 | 10.088 | 2 |
| 3 | 22.683 | 18.717 | 15.824 | 13.652 | $1 \mathrm{I} \times 978$ | 10.65 t | 3 |
| 4 | 23.285 | 19.233 | $16 \cdot 271$ | 14.042 | 12.322 | 10.957 | 4 |
| 5 | 23.693 | 19.594 | $16 \cdot 590$ | 14.325 | 12.574 | I-184 | 5 |
| 6 | 23.846 | 19.747 | $16 \cdot 735$ | 14.460 | 12.698 | 11-298 | 6 |
| 7 | 23.867 | 19.792. | $16 \cdot 790$ | 14.518 | 12.756 | 11-354 | 7 |
| 8 | 23.801 | 19766 | $16 \cdot 786$ | 14.526 | 12.770 | 11.37 I | 8 |
| 9 | 23.677 | 19.693 | $16 \cdot 742$ | 14.500 | 12.754 | $1 \mathrm{I} \cdot 362$ | 9 |
| 10 | 23.512 | 19.585 | 16.669 | 14.448 | 12.717 | 11.334 | 10 |
| 11 | 23.327 | 19.460 | 16.58 I | 14.384 | 12.669 | 11.296 | 11 |
| 12 | 23.143 | $19 \% 336$ | 16.494 | 14.321 | 12.621 | 11.259 | 12 |
| 13 | 22.957 | 19.210 | 16.406 | $14 \cdot 257$ | 12.572 | 11.221 | 13 |
| 14 | 22.769 | 19.082 | $16 \cdot 316$ | 14.191 | 12.522 | 11.182 | 14 |
| 15 | 22.582 | 18.956 | $16 \cdot 227$ | 14.126 | 12.473 | 11.144 | 15 |
| 16 | 22.404 | 18.837 | $16 \cdot 144$ | 14.067 | 12.429 | 11.111 | 16 |
| 17 | 22.232 | 18.723 | $16 \cdot 066$ | 14.012 | $12 \cdot 389$ | II 1.081 | 17 |
| 18 | 22.058 | $18 \cdot 608$ | 15.987 | 13.956 | 12.348 | 11.051 | 18 |
| 19 | 21.879 | 18.488 | 15.904 | 13.897 | 12.305 | 11.019 | 19 |
| 20 | 21.694 | $18 \cdot 363$ | 15.817 | 13.835 | 12.259 | 10.985 | 20 |
| 21 | 21-504 | 18.233 | 15.726 | 13.769 | 12.210 | 10.948 | 21 |
| 22 | $21 \cdot 304$ | 18.095 | 15.628 | $13 \cdot 697$ | $12 \cdot 156$ | 10.906 | 22 |
| 23 | 21.098 | 17.951 | 15.525 | 13.621 | 12.098 | 10.861 | 23 |
| 24 | 20.885 | 17.801 | 15.417 | 13.541 | 12.037 | 10.813 | 24 |
| 25 | 20.665 | 17.645 | 15.303 | 13.456 | 11.972 | 10.762 | 25 |
| 26 | 20.442 | 17.486 | $15 \cdot 187$ | 13.368 | 11.904 | 10.709 | 26 |
| 27 | 20.212 | 17.320 | 15.065 | 13.275 | 11.832 | 10.652 | 27 |
| 28 | 19.981 | $17 \cdot 154$ | 14.942 | 13.182 | 11759 | $10 \cdot 594$ | 28 |
| 29 | 19761 | 16.997 | 14.827 | 13.096 | 11693 | $10 \cdot 542$ | 29 |
| 30 | 19.556 | 16.852 | $14 \times 723$ | 13.020 | 11.636 | 10.498 | 30 |
| 31 | 19.348 | $16 \cdot 705$ | 14.617 | 12.942 | 11.578 | 10.454 | 31 |
| 32 | 19'134 | $16 \cdot 552$ | 14.506 | 12.860 | 11.516 | 10.407 | 32 |
| 33 | 18.910 | 16.390 | 14.387 | 12.771 | 11.448 | 10.355 | 33 |
| 34 | 18.675 | $16 \cdot 219$ | 14.260 | 12.675 | 11.374 | $10 \cdot 297$ | 34 |
| 35 | 18.433 | 16.041 | 14.127 | 12.573 | 11.295 | 10.235 | 35 |
| 36 | $18 \cdot 183$ | 15.856 | 13.987 | 12.465 | 11.211 | $10 \cdot 168$ | 36 |
| 37 | 17.928 | $15 \cdot 666$ | 13.843 | 12.354 | 11.124 | 10.098 | 37 |
| 38 | 17.669 | 15.47 I | 13.695 | 12.239 | 11.033 | 10.026 | 38 |
| 39 | 17.405 | 15.272 | 13.542 | 12.120 | $10 \cdot 939$ | 9.950 | 39 |
| 40 | 17.143 | 15.074 | 13.390 | 12.002 | 10.845 | 9.875 | 40 |
| 41 | 16.890 | 14.883 | 13.245 | 11.890 | 10.757 | 9.805 | 4 I |
| 42 | $16 \cdot 640$ | 14.694 | $13 \cdot 101$ | 11.779 | 10.671 | $9 \cdot 737$ | 42 |
| 43 | 16.389 16.130 | 14.505 | 12.957 12.85 | 11.668 | 10.585 | 9.669 | 43 |
| 44 | 16.130 15.863 | 14.308 | 12.806 | 11.551 | 10.494 | $9 \cdot 597$ | 44 |
| 45 | 15.863 | $14 \cdot 104$ | 12.648 | 11.428 | $10 \cdot 397$ | $9 \cdot 520$ | 45 |
| 46 | 15.585 | 13.889 | 12.480 | II 296 | $10 \cdot 292$ | $9 \cdot 436$ | 46 |
| 47 | 15.294 | 13.662 | 12.301 | II•154 | $10 \cdot 178$ | $9 \cdot 344$ | 47 |
| 48 | 14.986 | 13.419 | $12 \cdot 107$ | 10.998 | 10.052 | $9 \cdot 241$ | 48 |
| 49 | 14.654 | $13 \cdot 153$ | II 892 | 10.823 | $9 \cdot 908$ | $9 \cdot 121$ | 49 |
| 50 | 14.303 | 12.869 | 11.660 | 10.631 | $9 \cdot 749$ | 8.987 | 50 |

For explanation see pp. 25-27

VALUE OF AN ANNUITY ON A SINGLE LIFE ACCORDINO TO THE CARLISLE TABLE OF MORTALITY

| Age | $3 \%$ | $4 \%$ | $5 \%$ | $6 \%$ | $7 \%$ | $8 \%$ | Age |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 51 | 13.932 | 12.566 | 11.410 | 10.422 | 9-573 | 8.838 | 51 |
| 52 | I 3.558 | $12 \cdot 258$ | II•154 | $10 \cdot 208$ | $9 \cdot 392$ | 8.684 | 52 |
| 53 | $13 \cdot 180$ | 11.945 | 10.892 | 9.988 | 9.205 | $8 \cdot 523$ | 53 |
| 54 | $12 \cdot 798$ | 11.627 | 10.624 | $9 \cdot 761$ | 9.011 | 8.356 | 54 |
| 55 | 12.408 | 11.300 | $10 \cdot 347$ | $9 \cdot 524$ | 8.807 | 8.179 | 55 |
| 56 | 12.014 | 10.966 | 10.063 | 9.280 | 8.595 | 7.995 | 56 |
| 57 | 11.614 | 10.625 | $9 \cdot 771$ | $9{ }^{9} 027$ | $8 \cdot 375$ | $7 \cdot 802$ | 57 |
| 58 | II. 218 | 10.286 | $9 \cdot 478$ | $8 \cdot 772$ | $8 \cdot 153$ | $7 \cdot 606$ | 58 |
| 59 | $10 \cdot 84 \mathrm{I}$ | 9.963 | $9 \cdot 199$ | $8 \cdot 529$ | 7.940 | $7 \cdot 418$ | 59 |
| 60 | 10.491 | 9.663 | 8.940 | 8.304 | 7.743 | $7 \cdot 245$ | 60 |
| 6 I | $10 \cdot 180$ | $9 \cdot 398$ | $8 \cdot 712$ | $8 \cdot \mathrm{I} 08$ | 7.572 | 7.095 | 6r |
| 62 | 9.875 | $9 \cdot 137$ | $8 \cdot 487$ | 7.913 | $7 \cdot 403$ | $6 \cdot 947$ | 62 |
| 63 | 9.567 | 8.872 | $8 \cdot 258$ | 7.714 | $7 \cdot 229$ | 6.795 | 63 |
| 64 | $9 \cdot 246$ | $8 \cdot 593$ | $8 \cdot 16$ | 7.502 | 7.042 | 6.630 | 64 |
| 65 | $8 \cdot 917$ | $8 \cdot 307$ | $7 \cdot 765$ | $7 \cdot 281$ | $6 \cdot 847$ | $6 \cdot 457$ | 65 |
| 66 | $8 \cdot 578$ | $8 \cdot 010$ | $7 \cdot 503$ | 7.049 | $6 \cdot 64 \mathrm{I}$ | 6.272 | 66 |
| 67 | $8 \cdot 228$ | 7.700 | $7 \cdot 227$ | 6.803 | $6 \cdot 421$ | $6 \cdot 075$ | 67 |
| 68 | 7.869 | $7 \cdot 380$ | 6.94 I | $6 \cdot 546$ | $6 \cdot 189$ | 5.866 | 68 |
| 69 | $7 \cdot 499$ | 7.049 | 6.643 | $6 \cdot 277$ | 5.945 | 5.643 | 69 |
| 70 | $7 \cdot 123$ | 6709 | $6 \cdot 336$ | 5.998 | 5.690 | 5.410 | 70 |
| 71 | 6.737 | $6 \cdot 358$ | $6 \cdot 015$ | 5.704 | $5 \cdot 420$ | 5.160 | 71 |
| 72 | $6 \cdot 373$ | 6.026 | 5711 | 5.424 | $5 \cdot 162$ | 4.922 | 72 |
| 73 | 6.044 | $5 \cdot 725$ | 5.435 | $5 \cdot 170$ | 4.927 | $4 \cdot 704$ | 73 |
| 74 | 5.752 | 5.458 | $5 \cdot 190$ | 4.944 | $4 \cdot 719$ | $4 \cdot 511$ | 74 |
| 75 | $5 \cdot 512$ | 5.239 | 4.989 | 4.760 | $4 \cdot 549$ | 4.355 | 75 |
| 76 | $5 \cdot 277$ | 5.024 | 4.792 | 4.579 | 4.382 | 4.200 | 76 |
| 77 | 5.059 | $4 \cdot 825$ | 4.609 | 4.410 | 4.227 | 4.056 | 77 |
| 78 | 4.838 | 4.622 | 4.422 | $4 \cdot 238$ | 4.067 | 3.908 | 78 |
| 79 | 4.592 | 4.394 | 4210 | 4.040 | 3.883 | 3.736 | 79 |
| 80 | 4.365 | 4.183 | 4.015 | $3 \cdot 858$ | 3.713 | 3.577 | 80 |
| 81 | 4*119 | 3.953 | $3 \cdot 799$ | 3.656 | $3 \cdot 523$ | 3.398 | 81 |
| 82 | $3 \cdot 898$ | $3 \cdot 746$ | 3.606 | 3.474 | 3.352 | 3.237 | 82 |
| 83 | 3.672 | 3.534 | $3 \cdot 406$ | $3 \cdot 286$ | 3.174 | 3.069 | 83 |
| 84 | 3.454 | $3 \cdot 329$ | 3.211 | $3 \cdot 102$ | 2.999 | $2 \cdot 903$ | 84 |
| 85 | 3.229 | 3-115 | 3.009 | 2.909 | 2.815 | $2 \cdot 727$ | 85 |
| 86 | 3.033 | 2.928 | 2.830 | 2.739 | 2.652 | $2 \cdot 571$ | 86 |
| 87 | 2.873 | 2.776 | $2 \cdot 685$ | 2.599 | $2 \cdot 519$ | 2.440 | 87 |
| 88 | 2.776 | 2.683 | $2 \cdot 597$ | 2.515 | 2.439 | $2 \cdot 366$ | 88 |
| 89 | 2.665 | $2 \cdot 577$ | 2.495 | 2.417 | $2 \cdot 344$ | $2 \cdot 276$ | 89 |
| 90 | 2.499 | $2 \cdot 416$ | $2 \cdot 339$ | $2 \cdot 266$ | 2•198 | 2.133 | 90 |
| 9I | $2 \cdot 48 \mathrm{I}$ | $2 \cdot 398$ | $2 \cdot 321$ | $2 \cdot 248$ | $2 \cdot 180$ | $2 \cdot 115$ | 91 |
| 92 | $2 \cdot 577$ | 2492 | 2.412 | $2 \cdot 337$ | $2 \cdot 266$ | $2 \cdot 198$ | 92 |
| 93 | 2.687 | 2.600 | 2.518 | 2.440 | $2 \cdot 367$ | $2 \cdot 297$ | 93 |
| 94 | 2.736 | 2.650 | $2 \cdot 569$ | 2.492 | 2.419 | $2 \cdot 350$ | 94 |
| 95 | 2.757 | 2.674 | $2 \cdot 596$ | $2 \cdot 522$ | $2 \cdot 451$ | $2 \cdot 383$ | 95 |
| 96 | $2 \cdot 704$ | $2 \cdot 628$ | $2 \cdot 555$ | $2 \cdot 486$ | $2 \cdot 420$ | $2 \cdot 358$ | 96 |
| 97 | $2 \cdot 559$ | 2.492 | $2 \cdot 428$ | $2 \cdot 368$ | $2 \cdot 309$ | $2 \cdot 253$ | 97 |
| 98 | $2 \cdot 388$ | $2 \cdot 332$ | 2.278 | $2 \cdot 227$ | 2.177 | 2-129 | 98 |
| 99 | $2 \cdot 131$ | 2.087 | 2.045 | $2 \cdot 004$ | I 964 | I.926 | 99 |
| 100 | I 683 | 1.653 | I 624 | I 596 | I 569 | I 543 | 100 |

\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|l|}{VALUE OF AN ANNUITY ON A SINGLE LIFE ACCORDING TO THE INSTITUTE OF ACTUARIES HEALTHY MALES TABLE.} <br>
\hline Age \& 21 \% \& 3\% \& $3 \frac{1}{2} \%$ \& $4 \%$ \& $4 \frac{1}{2} \%$ \& $5 \%$ \& Age <br>
\hline 10 \& 26.732 \& 24.148 \& 21.954 \& 20.077 \& 18.459 \& 17.057 \& 10 <br>
\hline 11 \& $26 \cdot 535$ \& 23.995 \& 21.834 \& 19.982 \& $18 \cdot 385$ \& 16.998 \& ${ }_{1}$ <br>
\hline 12 \& 26.307 \& 23.814 \& 21.689 \& 19.865 \& 18.289 \& 16.919 \& 12 <br>
\hline 13 \& $26 \cdot 055$ \& $23 \cdot 610$ \& 21.523 \& 19.728 \& $18 \cdot 176$ \& 16.824 \& 13 <br>
\hline 14 \& 25785 \& 23.390 \& 21 341 \& 19.578 \& 18.049 \& 16.717 \& 14 <br>
\hline 15 \& 25.502 \& 23.158 \& $21 \times 149$ \& 19.417 \& 17.914 \& 16.602 \& 15 <br>
\hline 16 \& 25.215 \& 22.922 \& 20.953 \& 19.252 \& 17.774 \& 16.482 \& 16 <br>
\hline 17 \& 24.930 \& 22.686 \& 20.757 \& 19.087 \& 17.634 \& 16.362 \& 27 <br>
\hline 18 \& $24 \cdot 653$ \& 22.458 \& $20 \cdot 567$ \& 18.928 \& 17.499 \& $16 \cdot 248$ \& 18 <br>
\hline 19 \& 24.390 \& $22 \cdot 243$ \& $20 \cdot 389$ \& 18.780 \& 17.375 \& $16 \cdot 142$ \& 29 <br>
\hline 20 \& 24.145 \& 22.043 \& 20.225 \& 18.644 \& 17.262 \& 16.047 \& 20 <br>
\hline 21 \& 23.906 \& 21.848 \& 20.066 \& $18 \cdot 513$ \& 17.153 \& 15.957 \& 21 <br>
\hline 22 \& 23.669 \& 21.656 \& 19.909 \& $18 \cdot 384$ \& 17.047 \& 15.868 \& 22 <br>
\hline 23 \& 23.428 \& 21.460 \& 19.748 \& 18.251 \& 16.937 \& 15.776 \& 23 <br>
\hline 24 \& 23•178 \& 21.254 \& $19 \cdot 578$ \& 18.110 \& 16.819 \& 15.678 \& 24 <br>
\hline 25 \& 22.916 \& 21.038 \& 19.399 \& 17.961 \& 16.694 \& \& 25 <br>
\hline 26 \& $22 \cdot 646$ \& 20.814 \& 19.212 \& 17.804 \& $16 \cdot 56 \mathrm{I}$ \& 15.460 \& 26 <br>
\hline 27 \& 22.368
22.086 \& $20 \cdot 582$ \& 19.018 \& 17.641
17.474 \& 16.423 \& 15.342 \& 27 <br>
\hline 28 \& 22.086 \& $20 \cdot 347$ \& 18.820 \& 17.474 \& 16.28I \& 15.221 \& 28 <br>
\hline 29 \& 21.802 \& 20. 109 \& $18 \cdot 620$ \& 17.304 \& ${ }^{16 \cdot 1} 37$ \& 15.097 \& 29 <br>
\hline 30 \& 21.515 \& 19.867 \& 18.416 \& 17.131 \& 15.989 \& 14.971 \& 30 <br>
\hline 31 \& 21.224 \& $19 \cdot 623$ \& $18 \cdot 209$ \& 16.955 \& 15.839 \& 14.842 \& 31 <br>
\hline 32 \& $20 \cdot 928$ \& 19.373 \& 17.996 \& 16.774 \& $15 \cdot 684$ \& 14.708 \& 32 <br>
\hline 33 \& $20 \cdot 627$ \& $19 \cdot 117$
18.855 \& 17778 \& ${ }^{16 \cdot 587}$ \& 15.523 \& 14.570 \& 33 <br>
\hline 34 \& 20.319 \& 18.855 \& 17.554 \& 16.395 \& 15.358 \& 14.426 \& 34 <br>
\hline \& 20.006 \& 18.587 \& 17.325 \& 16.197 \& 15.186 \& 14.277 \& <br>
\hline 36 \& $19 \cdot 687$ \& $18 \cdot 314$ \& 17.090 \& 15.994
15.786 \& 15.010 \& 14.124 \& 36 <br>
\hline 37 \& 19.365 \& 18.037

17 \& 16.850 \& ${ }_{15} 1586$ \& 14.830 \& 13.966 \& 37 <br>
\hline 38 \& 19.039 \& 17756 \& $16 \cdot 607$ \& 15.575 \& 14.645 \& 13.805 \& 38 <br>
\hline 39 \& 18.708 \& 17.469 \& 16.358 \& ${ }^{15} 358$ \& 14.455 \& 13.638 \& 39 <br>
\hline 40 \& 18.371 \& ${ }^{17} 1176$ \& ${ }^{16 \cdot 103}$ \& 15.135 \& 14.260 \& 13.466 \& 40 <br>
\hline 41 \& 18.026 \& 16.876 \& 15.840 \& 14.904 \& 14.056 \& 13.287 \& 41 <br>
\hline 42 \& 17.672 \& 16.566 \& I $5 \cdot 568$ \& 14.664 \& 13.845 \& 13.099 \& 42 <br>
\hline 43 \& 17.3 Ir \& 16.248 \& 15.288 \& 14.417 \& 13.625 \& 12.903 \& 43 <br>
\hline 44 \& 16.943 \& 15.924 \& $15^{\circ} 001$ \& $14 \cdot 162$ \& 13.398 \& 12\%701 \& 44 <br>
\hline 45 \& 16.570 \& 15.594 \& 14.707 \& 13.901 \& $13 \cdot 165$ \& 12.491 \& 45 <br>
\hline 46 \& $16 \cdot 194$ \& $15 \cdot 260$ \& 14.410 \& 13.635 \& 12.927 \& 12.278 \& 46 <br>
\hline 47 \& 15.816 \& 14.923 \& 14.110 \& 13.366 \& 12.686 \& 12.061 \& 47 <br>
\hline 48 \& 15.437 \& 14.585 \& 13.806 \& 13.094 \& 12.441 \& II 840 \& 48 <br>
\hline 49 \& 15.055 \& 14.242 \& 13.499 \& 12.817 \& 12.191 \& II 614 \& 49 <br>
\hline 50 \& 14.669 \& 13.896 \& $13 \cdot 187$ \& 12.536 \& 11.936 \& 11.383 \& 50 <br>
\hline 51 \& 14.280
13.885 \& 13.545 \& 12.870 \& 12.249 \& 11.676 \& 11.146 \& 51 <br>
\hline 52 \& 13.885 \& $13 \cdot 188$ \& 12.547 \& 11.955 \& 11.408 \& 10.902 \& 52 <br>
\hline 53 \& 13.486 \& 12.826 \& . 12.218 \& 11.655 \& II•134 \& 10.651 \& 53 <br>
\hline 54 \& 13.086 \& 12.462 \& If 888 \& 11.351 \& 10.856 \& 10.396 \& 54 <br>
\hline
\end{tabular}

For explanation see pp. 25-27.

VALUE OF AY ANNUITY ON A SINGLE LIFE ACCORDING TO THE INSTITUTE OF ACTUARIES HEALTHY MALES TABLE

| Age | 21 $\frac{1}{2} \%$ | 3\% | 3 $\frac{1}{2} \%$ | 4\% | $4 \frac{1}{2} \%$ | $5 \%$ | Age |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 55 | 12.683 | 12.094 | II 1549 | 11.043 | 10'573 | $10 \cdot 135$ | 55 |
| 56 | 12.279 | 11.724 | 11.210 | 10.731 | 10.286 | 9.871 | 56 |
| 57 | 11.875 | 11.353 | 10.868 | 10.417 10.100 | 9.996 | $9 \cdot 602$ | 57 |
| 58 | 11.471 | 10.981 | 10.525 | $10 \cdot 100$ | 9.702 | 9.330 | 58 |
| 59 | 11.067 | $10 \cdot 608$ | $10 \cdot 180$ | 9780 | $9 \cdot 405$ | 9.054 | 59 |
| 60 | 10.665 | $10 \cdot 236$ | 9.835 | 9.459 | $9 \cdot 107$ | $8 \cdot 776$ | 60 |
| 61 | 10.266 | 9.866 | $9 \cdot 490$ | $9 \cdot 138$ | $8 \cdot 808$ | $8 \cdot 497$ | 61 |
| 62 | 9.871 | $9 \cdot 498$ | 9•148 | 8.818 | $8 \cdot 509$ | 8.217 | 62 |
| 63 | $9 \cdot 48 \mathrm{I}$ | 9•134 | $8 \cdot 807$ | $8 \cdot 500$ | $8 \cdot 211$ | 7.938 | 63 |
| 64 | $9 \cdot 096$ | 8.774 | $8 \cdot 471$ | $8 \cdot 185$ | 7.914 | 7.659 | 64 |
| 65 | 8.716 | $8 \cdot 418$ | $8 \cdot 136$ | 7.870 | 7.619 | $7 \cdot 381$ | 65 |
| 66 | $8 \cdot 340$ | $8 \cdot 064$ | $7 \cdot 803$ | 7.557 | 7.323 | 7.102 | 66 |
| 67 | 7.966 | $7 \cdot 712$ | 7.47 I | 7.243 | 7.026 | 6.821 | 67 |
| 68 | 7.594 | $7 \cdot 360$ | $7 \cdot 139$ | 6.928 | $6 \cdot 728$ | $6 \cdot 538$ | 68 |
| 69 | 7.221 | $7 \cdot 007$ | 6.804 | $6 \cdot 610$ | $6 \cdot 426$ | 6.251 | 69 |
| 70 | $6 \cdot 852$ | $6 \cdot 657$ | 6.470 | $6 \cdot 293$ | $6 \cdot 124$ | $5 \cdot 963$ | 70 |
| 71 | 6.489 | $6 \cdot 311$ | $6 \cdot 141$ | 5.979 | $5 \cdot 824$ | $5 \cdot 676$ | 71 |
| 72 | 6.137 | 5.975 | 5.820 | 5.672 | 5.530 | $5 \cdot 395$ | 72 |
| 73 | 5.800 | 5.653 | 5.512 | $5 \cdot 377$ | 5.247 | 5.123 | 73 |
| 74 | 5.482 | $5 \cdot 348$ | 5.220 | 5.097 | 4.979 | 4.866 | 74 |
| 75 | $5 \cdot 183$ | $5 \cdot 061$ | 4.945 | 4.833 | $4 \cdot 725$ | $4 \cdot 622$ | 75 |
| 76 | 4.892 | 4.782 | 4.676 | 4.574 | 4.476 | $4 \cdot 382$ | 76 |
| 77 | 4.611 | 4.512 | 4.416 | 4.324 | 4.235 | 4.149 | 77 |
| 78 | 4.339 | 4.249 | 4 '162 | 4.079 | 3.998 | 3.92 I | 78 |
| 79 | 4.073 | 3.992 | 3.914 | 3.838 | $3 \cdot 765$ | $3 \cdot 695$ | 79 |
| 80 | 3.815 | 3.742 | 3.672 | 3.604 | 3.539 | 3.475 | 80 |
| 81 | 3.572 | $3 \cdot 507$ | 3.444 | $3 \cdot 382$ | 3.323 | 3.266 | 81 |
| 82 | 3.348 | 3.290 | 3.233 | 3.178 | 3.125 | 3.073 | 82 |
| 83 | $3 \cdot 142$ | 3.089 | 3.038 | 2.989 | 2.94 I | 2.894 | 83 |
| 84 | 2.955 | $2 \cdot 908$ | 2.862 | $2 \cdot 818$ | 2.774 | 2.732 | 84 |
| 85 | 2.781 | $2 \cdot 739$ | 2.698 | $2 \cdot 658$ | 2.619 | $2 \cdot 581$ | 85 |
| 86 | $2 \cdot 608$ | $2 \cdot 570$ | $2 \cdot 534$ | 2.498 | 2.464 | 2.430 | 86 |
| 87 | 2.425 | $2 \cdot 393$ | $2 \cdot 361$ | $2 \cdot 330$ | $2 \cdot 299$ | 2.270 | 87 |
| 88 | $2 \cdot 234$ | 2.206 | 2.178 | $2 \cdot 152$ | $2 \cdot 125$ | $2 \cdot 100$ | 88 |
| 89 | 2.010 | 1.987 | 1.964 | 1.942 | 1.920 | 1.898 | 89 |
| 90 | 1.758 | 1.740 | 1722 | 1 704 | $1 \cdot 686$ | 1.669 | 90 |
| 91 | 1.501 | 1.487 | 1 473 | I 459 | 1.446 | 1432 | 91 |
| 92 | $1 \cdot 239$ | 1.229 | 1.219 | $1 \cdot 208$ | 1-198 | 1-188 | 92 |
| 93 | '958 | '951 | '944 | '937 | -930 | '924 | 93 |
| 94 | 681 | $\cdot 677$ | $\cdot 673$ | -668 | -664 | $\cdot 660$ | 94 |
| 95 | -418 | 415 | $\cdot 413$ | -411 | $\cdot 408$ | -406 | 95 |
| 96 | $\cdot 179$ | -178 | '178 | -177 | -176 | -175 | 96 |
| 97 | -000 | -000 | -000 | -000 | -000 | , 00 | 97 |


| VALUE OF AN ANNUITY ON A SINGLE LIFE ACCORDING TO THE GOVERNMENT EXPERIENCE, 1883 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Males |  |  |  |  |  |  |
| Age | 21 $\%$ | 3\% | $3 \frac{1}{2} \%$ | 4\% | $5 \%$ | Age |
| 20 | 22.434 | 20.561 | 18.936 | $\ldots$ | $\ldots$ | 20 |
| 25 | 21.282 | 19.601 | $18 \cdot 130$ |  | ... | 25 |
| 30 | 20.079 | $18 \cdot 588$ | 17.271 | ... | $\ldots$ | 30 |
| 35 | 18.822 | 17.515 | 16.353 | ... 4 |  | 35 |
| 40 | 17.501 | $16 \cdot 376$ | 15.365 | 14.454 | 12.883 | 40 |
| 41 | 17.227 | $16 \cdot 138$ | 15.158 | 14.273 | 12.743 | 4 I |
| 42 | 16.950 | 15.897 | 14.947 | 14.088 | 12.599 | 42 |
| 43 | 16.670 | 15.653 | 14.733 | 13.899 | 12.451 | 43 |
| 44 | $16 \cdot 387$ | 15.404 | 14.514 | 13.707 | 12.300 | 44 |
| 45 | 16.099 | 15.152 | 14.292 | 13.510 | 12.145 | 45 |
| 46 | 15.807 | 14.895 | 14.065 | 13.309 | I I 988 | 46 |
| 47 | 15.511 | 14.633 | 13.833 | $13 \cdot 103$ | 11.822 | 47 |
| 48 | 15.209 | 14.365 | 13.595 | t2.891 | 11.653 | 48 |
| 49 | 14.900 | 14.091 | 13.351 | 12.673 | 11.477 | 49 |
| 50 | 14.588 | 13.813 | 13.103 | 12.450 | II 298 | 50 |
| 51 | 14.268 | 13.526 | 12.845 | 12.219 | 11.110 | 51 |
| 52 | $13.94{ }^{1}$ | 13.233 | 12.582 | II.982 | 10.916 | 52 |
| 53 | 13.608 | 12.933 | 12.311 | II 737 | $10 \cdot 714$ | 53 |
| 54 | 13.267 | $12 \cdot 625$ | 12.032 | 11.484 | $10 \cdot 506$ | 54 |
| 55 | 12.919 | 12.309 | 11.746 | II•224 | $10 \cdot 289$ | 55 |
| 56 | 12.563 | I 1.986 | 11.451 | 10.955 | $10 \cdot 063$ | 56 |
| 57 | 12.198 | 11.653 | II.146 | $10 \cdot 676$ | 9.828 | 57 |
| 58 | 11.823 | 11310 | 10.832 | $10 \cdot 387$ | $9 \cdot 583$ | 58 |
| 59 | 11.439 | 10.956 | $10 \cdot 506$ | 10.086 | 9.326 | 59 |
| 60 | 11.054 | $10 \cdot 601$ | 10.178 | 9.783 | 9.065 | 60 |
| 6 I | 10.678 | 10.254 | $9 \cdot 857$ | 9.485 | 8.808 | 6 x |
| 62 | 10.314 | 9.916 | $9 \cdot 543$ | 9.194 | $8 \cdot 556$ | 62 |
| 63 | 9.948 | 9.577 | 9.228 | 8.900 | $8 \cdot 300$ | 63 |
| 64 | $9 \cdot 586$ | 9:239 | 8.913 | $8 \cdot 605$ | 8.041 | 64 |
| 65 | 9.225 | 8.902 | $8 \cdot 597$ | $8 \cdot 309$ | 7\%781 | 65 |
| 66 | $8 \cdot 875$ | $8 \cdot 573$ | $8 \cdot 289$ | 8.020 | 7.525 | 66 |
| 67 | $8 \cdot 533$ | 8.252 | 7.987 | 7736 | $7 \cdot 273$ | 67 |
| 68 | 8.196 | 7.936 | $7 \cdot 689$ | 7.455 | 7.023 | 68 |
| 69 | 7.858 | 7.617 | 7.388 | 7.171 | $6 \cdot 768$ | 69 |
| 70 | 7.521 | $7 \cdot 299$ | 7.087 | 6.886 | $6 \cdot 512$ | 70 |
| 7 I | 7.191 | 6.986 | $6 \cdot 790$ | $6 \cdot 604$ | $6 \cdot 257$ | 71 |
| 72 | $6 \cdot 864$ | $6 \cdot 675$ | $6 \cdot 495$ | $6 \cdot 323$ | $6 \cdot 003$ | 72 |
| 73 | $6 \cdot 546$ | $6 \cdot 373$ | 6.208 | $6 \cdot 050$ | $5 \cdot 754$ | 73 |
| 74 | 6.245 | 6.086 | 5.934 | 5.788 | 5.515 | 74 |
| 75 | 5.955 | 5.809 | $5 \cdot 669$ | $5 \cdot 535$ | 5.283 | 75 |
| 76 | 5.672 | $5 \cdot 538$ | 5.410 | 5.286 | 5.054 | 76 |
|  | $5 \cdot 404$ | 5.281 | $5 \cdot 163$ | 5.050 | $4 \cdot 836$ | 77 |
| 78 | 5.145 | 5.033 | 4.925 | 4.821 | $4 \cdot 624$ | 78 |
| 79 | 4.891 | 4.788 4.553 | 4.689 | $4 \cdot 594$ | 4.413 | 79 |
| 80 | $4 \cdot 647$ | 4.553 | 4.463 | 4.376 | $4{ }^{210}$ | 80 |

For explanation see pp. 25-27

| VALUE OF AN ANNUITY ON A SINGLE LIFE ACCORDING TO THE GOVERNMENT EXPERIENCE, 1883 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Eemales |  |  |  |  |  |  |
| Age | 2 $\frac{1}{2} \%$ | 3\% | $3 \frac{1}{2} \%$ | 4\% | $5 \%$ | Age |
| 20 | 24.479 | 22.292 | $20 \cdot 409$ | ... | ... | 20 |
| 25 | 23.397 | 21.415 | 19.695 | ... | ... | 25 |
| 30 | $22 \cdot 223$ | 20.451 | 18.898 | ... | ... | 30 |
| 35 | 20.939 | 19.380 | 18.001 | . |  | 35 |
| 40 | 19.523 | $18 \cdot 180$ | 16.980 | 15'904 | $14^{\circ} 063$ | 40 |
| 4 I | 19.223 | 17.923 | $16 \cdot 758$ | 15.712 | 13.920 | 4 I |
| 42 | 18.915 | $17 \cdot 658$ | $16 \cdot 529$ | 15.514 | 13.769 | 42 |
| 43 | $18 \cdot 601$ | $17 \cdot 386$ | $16 \cdot 294$ | 15.310 | 13.613 | 43 |
| 44 | 18.279 | $17 \cdot 107$ | 16.051 | 15.098 | 13.45 I | 44 |
| 45 | 17.950 | 16.820 | 15.801 | 14.879 | 13.281 | 45 |
| 46 | 17.612 | 16.525 | 15.543 | 14.652 | $13 \cdot 105$ | 46 |
| 47 | 17.266 | 16.221 | 15.276 | 14.416 | 12.920 | 47 |
| 48 | 16.911 | 15.910 | 15.000 | 14.173 | 12.727 | 48 |
| 49 | $16 \cdot 552$ | 15.592 | 14.719 | 13.923 | 12.528 | 49 |
| 50 | 16.190 | 15.271 | 14.434 | 13.669 | $12 \cdot 325$ | 50 |
| 5 I | 15.831 | 14.952 | $14 \cdot 149$ | 13.415 | 12.121 | 5 I |
| 52 | 15.465 | 14.626 | 13.859 <br> 13 | 13.155 | 11.911 | 52 |
| 53 | $15 \% 91$ | 14.292 | 13.558 | 12.885 | $11 \cdot 692$ | 53 |
| 54 | 14.712 | 13.951 | 13.252 | 12.609 | 11.467 | 54 |
| 55 | 14.329 | 13.607 | 12.942 | 12.328 | II 236 | 55 |
| 56 | 13.936 | 13.252 | 12.620 | 12.036 | 10.994 | 56 |
| 57 | 13.538 | 12.891 | 12.292 | 11.738 | $10 \cdot 745$ | 57 |
| 58 | 13.138 | 12.527 | 11.960 | $\begin{array}{r}11.435 \\ \hline 1.18\end{array}$ | 10.492 | 58 |
| 59 | 12.735 | $12 \cdot 160$ | 11.625 | 11.128 10.818 | 10.233 | 59 |
| 60 | 12.333 | 11.791 | 11.287 | 10.818 | 9.971 | 60 |
| 6 x | 11.925 | 11417 | 10.943 | 10.500 | 9.700 | 61 |
| 62 | II•523 | 11.046 | $10 \cdot 601$ | $10 \cdot 185$ | 9.429 | 62 |
| 63 | $11 \cdot 120$ | $10 \cdot 674$ | 10.257 | 9.866 | 9.155 | 63 |
| 64 | $10 \cdot 713$ | $10 \cdot 297$ | 9.907 | 9.54 I | 8.873 | 64 |
| 65 | 10.296 | $9 \cdot 909$ | $9 \cdot 546$ | $9 \cdot 204$ | $8 \cdot 579$ | 65 |
| 66 | 9.880 | $9 \cdot 521$ | $9 \cdot 183$ | 8.865 | $8 \cdot 282$ | 66 |
| 67 | $9 \cdot 463$ | 9.131 | $8 \cdot 818$ | $8 \cdot 523$ | 7.980 | 67 |
| 68 | 9.052 | $8 \cdot 745$ | $8 \cdot 456$ | $8 \cdot 182$ | 7.678 | 68 |
| 69 | $8 \cdot 650$ | $8 \cdot 367$ | $8 \cdot 100$ | 7.847 | 7.379 | 69 |
| 70 | $8 \cdot 260$ | $8 \cdot 000$ | $7 \cdot 754$ | 7.520 | 7.087 | 70 |
| 7 x | 7.893 | $7 \cdot 654$ | 7.426 | 7.210 | $6 \cdot 809$ | 71 |
| 72 | 7.539 | 7.319 | 7.110 | 6.910 | $6 \cdot 539$ | 72 |
| 73 | ${ }_{7} \cdot 1.196$ | $6 \cdot 994$ | $6 \cdot 801$ | $6 \cdot 617$ | $6 \cdot 274$ | 73 |
| 74 | $6 \cdot 863$ | $6 \cdot 677$ | $6 \cdot 500$ | 6.331 | 6.014 | 74 |
| 75 | $6 \cdot 537$ | $6 \cdot 367$ | $6 \cdot 204$ | $6 \cdot 048$ | $5 \cdot 757$ | 75 |
| 76 | $6 \cdot 220$ | 6.064 | 5.915 | $5 \cdot 773$ | $5 \cdot 504$ | 76 |
| 77 | $5 \cdot 911$ | 5.769 | 5.633 | $5 \cdot 502$ | 5.256 | 77 |
| 78 | $5 \cdot 613$ | 5.483 | 5.359 | $5 \cdot 240$ | 5.015 | 78 |
| 79 | $5 \cdot 323$ | 5.205 4.037 | 5.092 4.834 | 4.983 4.735 | 4.777 4.547 | 79 80 |
| 80 | $5 \% 44$ | 4.937 | 4.834 | 4.735 | 4.547 | 80 |


| SINGLE PAYMENT TO SECURE \&1 AT DEATH ACCORDING TOTHE CARLISLE TABLE OF MORTALITY |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | $3 \%$ | $4 \%$ | $5 \%$ | $6 \%$ | $7 \%$ | $8 \%$ | Age |
| 0 | -4664r | 41224 | $\checkmark 37700$ | -3525 1 | -33421 | $\cdot 32015$ | 0 |
| 1 | $\cdot 38587$ | $\cdot 32483$ | $\cdot 28595$ | $\cdot 25974$ | - 24079 | - 22674 | 1 |
| 2 | $\cdot 34463$ | $\cdot 27976$ | $\cdot 23891$ | -21179 | -19258 | -17867 | 2 |
| 3 | -31021 | -24173 | -19886 | -17065 | - 15097 | -13696 | 3 |
| 4 | -29267 | -22187 | -17757 | -14857 | -12847 | - 11430 | 4 |
| 5 | -28079 | -20800 | -16238 | 'I3255 | -11198 | -09748 | 5 |
| 6 | $\cdot 27633$ | -20211 | -15548 | -12491 | -10387 | -08904 | 6 |
| 7 | $\cdot 27572$ | -20038 | -15286 | -12163 | -10007 | -08489 | 7 |
| 8 | $\cdot 27764$ | -20137 | . 15305 | -12117 | -09916 | . 08363 | 8 |
| 9 | $\cdot 28125$ | -20419 | -15514 | -12264 | -1002 I | -08430 | 9 |
| 10 | -28606 | -20833 | - 15862 | -12558 | -10263 | -08637 | 10 |
| 11 | - 29145 | -21313 | -1628I | -12921 | -10577 | -08919 | 11 |
| 12 | -2968I | -21789 | -16695 | '13277 | -10891 | -09193 | 12 |
| 13 | -30222 | -22272 | $\cdot 17114$ | -13640 | -11211 | -09474 | 13 |
| 14 | -30771 | $\cdot 22762$ | ${ }^{\text {' } 17543}$ | -14013 | -11538 | -09763 | 14 |
| 15 | $\cdot 31315$ | - 23249 | -17967 | -14381 | -11859 | -10045 | 15 |
| 16 | $\cdot 31833$ | -23706 | -18362 | -14715 | -12147 | -10289 | 16 |
| 17 | $\cdot 32334$ | -24150 | -18733 | - 15026 | -12408 | - I SII | 17 |
| 18 | -32841 | -24590 | -19110 | - 15343 | -12677 | -10733 | 18 |
| 19 | -33362 | -25052 | -19505 | - 15677 | -12958 | -10970 | 19 |
| 20 | -33901 | -25532 | -19919 | -16028 | -13259 | -11222 | 20 |
| 21 | - 34455 | -26031 | - 20352 | -16402 | -13579 | - I 1496 | 21 |
| 22 | $\cdot 35037$ | $\cdot 26562$ | $\cdot 20819$ | -16809 | -13933 | -11807 | 22 |
| 23 | $\cdot 35637$ | -27115 | $\cdot 21310$ | - 17240 | -14312 | -12141 | 23 |
| 24 | $\cdot 36252$ | -27690 | $\cdot 21824$ | -17692 | -1471 I | -12496 | 24 |
| 25 | -36808 | -28289 | - 22367 | -18174 | -15136 | -12874 | 25 |
| 26 | $\cdot 37548$ | -28901 | -22919 | -18672 | -15581 | - 13267 | 26 |
| 27 | - 38218 | $\cdot 29538$ | - 23500 | -19198 | -16052 | - 13689 | 27 |
| 28 | $\cdot 38890$ | $\cdot 30176$ | $\cdot 24086$ | -19725 | -16529 | - 14119 | 28 |
| 29 | -39531 | -30781 | -24633 | '202II | -16962 | :14504 | 29 |
| 30 | -40129 | -31338 | - 25129 | -20642 | -17335 | -14830 | 30 |
| 3 3 | -40734 | $\cdot 31903$ | $\cdot 25633$ | $\cdot 21083$ | -17714 | - 15155 | 3 I |
| 32 | $\cdot 41357$ | -32491 | $\cdot 26162$ | $\cdot 21547$ | -18120 | - 15504 | 32 |
| 33 | -42010 | - 33113 | $\cdot \cdot 26729$ | -22051 | -18564 | - 15889 | 33 |
| 34 | -42694 | '3377 | $\cdot 27333$ | -22594 | -19049 | -16319 | 34 |
| 35 | -43399 | - 34457 | $\cdot 27967$ | $\cdot 23172$ | -19565 | -16778 | 35 |
| 36 | -44117 | $\cdot 35170$ | -28633 | -23783 | -20115 | - 17274 | 36 |
| 37 | -44870 | -35901 | - 29319 | -24411 | $\cdot 20684$ | - 77793 | 37 |
| 38 39 | -45624 | - 36649 | $\cdot 30024$ | -25062 | -21279 | - 18326 | 38 |
| 39 | -46393 | - 37416 | -30752 | - 25736 | -21894 | -18889 | 39 |
| 40 | -47156 | -38178 | -31477 | -26404 | -22509 | -19444 | 40 |
| 4 I | -47893 | -38911 | - 32167 | -27038 | -23085 | -19963 | 4 I |
| 42 | -4862I | - 39636 | - 32852 | ${ }^{2} 27666$ | -23648 | -20467 | 42 |
| 43 | -49352 | -40364 | - 33538 | -28294 | . 24210 | -2097 I | 43 |
| 44 | -50108 | -41120 | - 34257 | -28957 | -24805 | $\cdot 21504$ | 44 |
| 45 | -50885 | ${ }^{-41905}$ | -35010 | -29653 | - 25440 | -22074 |  |
| 46 | $\cdot 51694$ | $\cdot 42734$ | -35810 | - 30400 | -26127 | -22696 | 46 |
| 47 | - 52542 | $\cdot 43607$ | $\cdot 36662$ | $\cdot 31204$ | $\cdot 26873$ | -23378 | 47 |
| 48 | - 534349 | -44542 | - 37586 | $\cdot 32087$ | -27697 | -24141 | 48 |
| 49 | -54406 | '45565 | -38610 | -33077 | -28639 | -25030 | 49 |

For explanation see pp. 27, 28

SINGLE PAYMENT TO SECURE f1 AT DEATH ACCORDING TO THE CARLISLE TABLE OF MORTALITY

| Age | $3 \%$ | $4 \%$ | $5 \%$ | $6 \%$ | $7 \%$ | $8 \%$ | Age |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 50 | -55429 | $\cdot 46658$ | -39714 | $\cdot 34164$ | -29679 | $\cdot 26022$ | 50 |
| 51 | $\cdot 56509$ | -47824 | -40905 | -35347 | -30831 | $\cdot 27126$ | 5 5 |
| 52 | - 57598 | -49003 | -42124 | $\cdot 36558$ | -32015 | -28267 | 52 |
| 53 | -58699 | -50211 | -43371 | $\cdot 37804$ | -33238 | -29459 | 53 |
| 54 | -59812 | $\cdot 51436$ | $\cdot 44648$ | $\cdot 39089$ | -34507 | -30696 | 54 |
| 55 | -60948 | -52694 | -45967 | -40431 | -35842 | -32007 | 55 |
| 56 | -62096 | -53977 | -47319 | $\cdot 41812$ | $\cdot 37229$ | -33370 | 56 |
| 57 | $\cdot 63260$ | $\cdot 55286$ | 48710 | $\cdot 43243$ | -38668 | 34800 | 57 |
| 58 | -64413 | -56591 | $\cdot 50105$ | -44687 | -40121 | $\cdot 36252$ | 58 |
| 59 | $\cdot 65512$ | -57833 | -51433 | $\cdot 46062$ | -41514 | -37644 | 59 |
| 60 | -66531 | -58987 | - 52667 | -47336 | -42803 | $\cdot 38926$ | 60 |
| 61 | $\cdot 67436$ | . 60007 | - 53752 | -48445 | $\cdot 43922$ | $\cdot 40036$ | 61 |
| 62 | . 68325 | .61012 | $\cdot 54824$ | -49549 | -45027 | -41133 | 62 |
| 63 | $\cdot 69222$ | $\cdot 62033$ | $\cdot 55914$ | -50676 | -46165 | '42259 | 63 |
| 64 | $\cdot 70157$ | .63103 | - 57067 | $\cdot 51875$ | -47389 | '43481 | 64 |
| 65 | '71112 | -64203 | $\cdot 58262$ | -53126 | $\cdot 48664$ | $\cdot 44763$ | 65 |
| 66 | 72103 | . 65347 | . 59510 | - 54440 | -50012 | -46133 | 66 |
| 67 | 73122 | $\cdot 66539$ | -60824 | $\cdot 55832$ | -51451 | -47593 | 67 |
| 68 | $\cdot 74168$ | $\cdot 67770$ | . 62186 | $\cdot{ }^{5} 57287$ | $\cdot 52969$ | -49141 | 68 |
| 69 | 75246 | $\cdot 69043$ | '63605 | - 58809 | -54565 | -50793 | 69 |
| 70 | 76340 | 70349 | -65067 | -60389 | -56234 | $\cdot 52519$ | 70 |
| 71 | 77465 | $\stackrel{71701}{ }$ | . 68595 | . 62053 | -58000 | - 54371 | 71 |
| 72 | '78525 | ${ }^{7} 72979$ | $\cdot 68043$ | . 63638 | . 59687 | -56134 | 72 |
| 73 | '79483 | ${ }^{7} 74136$ | $\cdot \cdot 69357$ | . 65675 | . 6122585 | -57748 | 73 |
| 74 | -80334 | 7516I | $\cdot 70524$ | $\cdot 66355$ | $\cdot 62586$ | -59178 | 74 |
|  | -81033 | $\cdot 76004$ | $\cdot 71481$ | $\cdot 67396$ | $\cdot 63698$ | 60333 |  |
| 76 | . 81717 | $\cdot 7683 \mathrm{I}$ | 772419 | -68421 | $\cdot 64791$ | -6148I | 76 |
| 77 | . 82352 | $\cdots 77597$ | 73291 .74181 | $\cdot 69377$ | $\cdot 65805$ | $\cdot 62548$ | 77 |
| 78 | . 823996 | 78378 $\cdot 79256$ | -74181 | $\cdot 70351$ .71472 | $\cdot 6685 \mathrm{I}$ | $\cdot 63645$ | 78 |
| 79 | . 83713 | '79256 | 75191 | 71472 | $\cdot 68055$ | $\cdot 64919$ | 79 |
| 80 | -84374 | . 80066 | 76119 | $\cdot 72502$ | -69167 | -66096 | 80 |
| 81 | -85090 | . 80950 | 77148 | $\cdot 73645$ | $\cdot 70410$ | $\cdot 67422$ | 81 |
| 82 | . 85734 | . 81745 | $\cdot 78067$ | $\cdot 74675$ | $\cdot 71529$ | -68615 | 82 |
| 83 | -86392 | -8256I | 779019 | $\cdot 75740$ | $\cdot 72693$ | $\cdot 69859$ | 83 |
| 84 | -87027 | .83352 | 779948 | ${ }^{7} 76781$ | '73838 | $\cdot 71089$ | 84 |
| 85 | . 87682 | -84173 | -80910 | ${ }^{7} 78874$ | $\cdot 75042$ | $\cdot 72393$ | 85 |
| 86 | -88253 | -84891 | . 81762 | $\cdot 78836$ | $\cdot 76108$ | $\cdot 73548$ | 86 |
| 87 | -88719 | $\cdot 85477$ | . 82452 | $\cdot 79628$ | ${ }^{7} 76978$ | $\cdot 74496$ | 87 |
| 88 | -89002 | $\cdot 85833$ | . 82870 | .80101 | $\cdot 77502$ | $\cdot 75067$ | 88 |
| 89 | -89325 | -86242 | -83357 | -80658 | -79078 | $\cdot 75733$ | 89 |
| 90 | - 89809 | -8686I | $\cdot 84103$ | .81513 | $\cdot 79196$ | $\cdot 76793$ | 90 |
| 91 | -8986I | .86929 | . 84186 | .81615 | $\cdot 78634$ | $\cdot 76926$ | 91 |
| 92 | . 89582 | . 86569 | . 83752 | .81111 | $\cdot \cdot 77973$ | $\cdot 76311$ | 92 |
| 93 | .8926I | .86156 .85962 | .83248 .83005 | . 80528 | -77633 -77512 | 775578 .75185 | 93 |
| 94 | .89118 | .85962 .85868 | .83005 .82876 | .80234 | $\cdot 77512$ $\cdot 77424$ | -75185 | 94 |
| 95 | .89057 | . 85868 | .82876 .83071 | -80064 | - 77424 $\cdot 77626$ | $\begin{array}{r}\text {-74941 } \\ \hline 75126\end{array}$ | 95 96 |
| 97 | . 89633 | . 86569 | . 83676 | $\cdot 80936$ | ${ }^{7} 78352$ | $\cdot 75904$ | 97 |
| 98 | -90132 | . 87184 | . 84391 | . 81734 | $\cdot 79216$ | $\cdot 76822$ | 98 |
| 99 | 90880 | $\cdot 88127$ | . 83500 | . 82996 | . 80609 | $\cdot 78326$ | 99 |
| 100 | $\cdot 92185$ | -89797 | -87505 | -85306 | -83193 | -8II63 | 100 |

## SINGLE PAYMENT TO SECURE $£ 1$ AT DEATH ACCORDING TO the institute of actuaries healthy males table

| Age | 2 $\frac{1}{2} \%$ | $3 \%$ | $3 \frac{1}{2} \%$ | 4\% | 4 $12 \%$ | $5 \%$ | Age |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10 | $\cdot 32361$ | - 26752 | -22378 | -18937 | ${ }^{\text {-16204 }}$ | -14015 | 10 |
| 11 | -32841 | $\cdot 27198$ | -22783 | -19299 | -16524 | -14296 | II |
| 12 | -33396 | - 27726 | -23274 | -19750 | -16937 | -14670 | 12 |
| 13 | $\cdot 34012$ | $\cdot 28320$ | . 23836 | -20276 | -17425 | -15122 | 13 |
| 14 | $\cdot 34672$ | $\cdot 28962$ | -24450 | $\cdot 20856$ | -17970 | -15632 | 14 |
| 15 | -35360 | -29637 | -25099 | -21473 | -18553 | -16182 | 15 |
| 16 | -36060 | -30326 | -25764 | -22109 | -19156 | -16752 | 16 |
| 17 | $\cdot 36757$ | 31011 | - 26427 | - 22742 | - 19758 | -17322 | 17 |
| 18 | -37433 | $\cdot 31677$ | -27069 | -23354 | -20337 | - 17889 | 18 |
| 19 | $\cdot 38072$ | -32302 | -27670 | -23924 | -20873 | -18371 | 19 |
| 20 | -38671 | -32886 | -28226 | - 24447 | -21361 | -18823 | 20 |
| 21 | -39254 | -33451 | -28763 | - 24950 | -21827 | -19254 | 21 |
| 22 | -39830 | 340II | -29294 | -25446 | $\cdot 22287$ | -19676 | 22 |
| 23 | -40418 | -34584 | -29839 | - 25957 | $\cdot 22761$ | -20113 | 23 |
| 24 | 41030 | -35183 | -30413 | -26499 | $\cdot 23267$ | -20582 | 24 |
| 25 | -41668 | -35812 | -31019 | - 27074 | - 23808 | -21087 | 25 |
| 26 | -42328 | -36465 | $\cdot 31652$ | -27678 | - 24378 | -21621 | 26 |
| 27 | -43005 | $\cdot 37139$ | -32307 | -28306 | -24973 | $\cdot 22182$ | 27 |
| 28 | -43691 | -37824 | -32975 | -28947 | '25583 | -22758 | 28 |
| 29 | -44385 | $\cdot 38518$ | -33653 | -29600 | -26205 | -23346 | 29 |
| 30 | -45086 | -39221 | -34343 | -30266 | -26840 | -23948 | 30 |
| 31 | -45794 | -39934 | -35044 | -30943 | '27488 | - 24563 | 3 I |
| 32 | -46516 | $\cdot 40662$ | - 35762 | - 31640 | $\cdot \cdot 28156$ | -25199 | 32 |
| 33 | -47251 | $\cdot 41407$ | -36499 | -32357 | $\cdot 28847$ | -25858 | 33 |
| 34 | $\cdot 48002$ | $\cdot 42170$ | -37256 | - 33097 | 29561 | $\cdot 26542$ | 34 |
| 35 | -48766 | -42950 | -38033 | $\cdot 33858$ | $\cdot 30299$ | $\cdot 27251$ | 35 |
| 36 | -49543 | '43745 | -38828 | $\cdot 34639$ | -31057 | -2798I | 36 |
| 37 | -50329 | -44553 | -39637 | - 35437 | -31834 | -28731 | 37 |
| 38 | - 51125 | -45372 | -40461 | $\cdot 36251$ | $\cdot 32629$ | -29501 | 38 |
| 39 | -51933 | $\cdot 46207$ | 41303 | -37086 | -33446 | -30294 | 39 |
| 40 | -52755 | -47060 | -42165 | - 37943 | -34289 | -31114 | 40 |
| 4 I | -53595 | -47935 | -43054 | -38831 | -35164 | -31969 | 41 |
| 42 | -54457 | $\cdot 48836$ | -43974 | -39752 | -36076 | - 32863 | 42 |
| 43 | -55340 | -49762 | -4492I | -40706 | -37023 | -33796 | 43 |
| 44 | -56236 | -50707 | -45892 | ${ }^{4} 12685$ | -37999 | - 34760 | 44 |
|  | -57147 | -51669 | -46884 | -42690 | -39004 |  | 45 |
| 46 | - 58064 | -52642 | -47889 | -43712 | -40028 | -36772 | 46 |
| 47 | - 58985 | -53621 | -48904 | -44745 | -41067 | - 37806 | 47 |
| 48 | - 59910 | -54608 | -49930 | -45792 | ${ }^{42122}$ | -38858 | 48 |
| 49 | -60842 | '55605 | -50970 | -46856 | -43197 | -39934 | 49 |
| 50 | ${ }^{6} 61782$ | -56613 | -52023 | -47938 | -44293 | -41033 | 50 |
| 51 | -62732 | $\cdot 57635$ | -53096 | '49043 | -45416 | ${ }^{4} 42162$ | 51 |
| 52 | -63695 | -58676 | -54191 | -50174 | $\cdot 46569$ | -43326 | 52 |
| 53 | -64667 | -59729 | -55303 | - 51327 | - 47748 | -44518 | 53 |
| 54 | $\cdot 65645$ | -60792 | -56428 | -52496 | -48947 | '45735 | 54 |

For explanation see pp. 27, 28

| SINGLE PAYMENT TO SECURE \&1 AT DEATH ACCORDING TO the INstitute of agtuaries healthy males table |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | 2 $\frac{1}{2}$ \% | $3 \%$ | 3 $\frac{1}{2}$ \% | $4 \%$ | 41 \% | $5 \%$ | Age |
| 55 | $\cdot 66627$ | -61863 | 57566 | ${ }^{-53682}$ | -50166 | $\cdot 46975$ | 55 |
| 56 | -67612 | -62939 | $\cdot 58712$ | -5488I | -51401 | - 48235 | 56 |
| 57 | -68597 | -64020 | -59866 | -56090 | -52651 | -49513 | 57 |
| 58 | -69583 | -65103 | $\cdot 61026$ | - 57309 | - 53915 | - 50809 | 58 |
| 59 | $\cdot 70568$ | -66190 | -62193 | -58539 | -55193 | -52122 | 59 |
| 60 | $\cdot 71548$ | -67274 | -63361 | -59773 | -56478 | -53446 | 60 |
| 61 | $\cdot 72522$ | $\cdot 68353$ | $\cdot 64526$ | $\cdot 61007$ | -57766 | $\cdot 54777$ | 61 |
| 62 | $\cdot 73485$ | -69424 | - 65685 | -62237 | -59053 | - 56109 | 62 |
| 63 | $\cdot 74437$ | 770484 | $\cdot 66835$ | -63461 | . 60337 | -5744 | 63 |
| 64 | $\cdot 75375$ | $\cdot 71532$ | -67974 | $\cdot 64675$ | -616I3 | - 58767 | 64 |
| 65 | $\cdot 76302$ | $\cdot 72569$ | -69104 | $\cdot 65883$ | - 62886 | -60092 | 65 |
| 66 | $\cdot 77220$ | :73600 | 70230 | $\cdot 67089$ | -64159 | -6142I | 66 |
| 67 | 778132 | '74626 | '71354 | -68297 | -65437 | . 62758 | 67 |
| 68 | -79039 | '75650 | 72478 | $\cdot 69507$ | -6672I | $\cdot 64105$ | 68 |
| 69 | $\cdot 79948$ | $\cdot 76678$ | 73610 | '70729 | .68021 | $\cdot 65473$ | 69 |
| 70 | -80849 | -77700 | -74738 | -71950 | . 69323 | -66845 | 70 |
| 71 | -81734 | $\cdot 78706$ | 75852 | 73159 | 70615 | 68210 | 71 |
| 72 | -82593 | -79685 | 76937 | $\cdot 74339$ | ${ }^{7} 71879$ | $\cdot 69549$ | 72 |
| 73 | . 83415 | -80623 | $\checkmark 77980$ | $\cdot 75475$ | ${ }^{7} 73098$ | $\cdot 70841$ | 73 |
| 74 | .84190 | -81510 | 78967 | $\cdot 7655 \mathrm{I}$ | $\cdot 74254$ | 72069 | 74 |
|  | -84919 | . 82345 | 79897 | '77567 | $\cdot 75347$ | -73231 | 75 |
| 76 | . 85628 | .83159 | . 80806 | ${ }^{7} 8565$ | $\cdot 76418$ | '74372 | 76 |
| 77 | . 86313 | . 83946 | -81686 | -79525 | '77459 | '75482 | 77 |
| 78 | -86978 | . 847 II | -82543 | -80466 | $\cdot 78476$ | 76569 | 78 |
| 79 | -87628 | .85461 | . 83384 | -81392 | '79479 | 77643 | 79 |
| 80 | -88256 | .86187 | -84200 | -82291 | -80455 | $\cdot 78690$ | 80 |
| 81 | -88850 | . 86874 | . 84974 | . 83145 | . 81383 | $\cdot 79686$ | 81 |
| 82 | -89394 | -87506 | . 85686 | -8393I | -82238 | . 80605 | 82 |
| 83 | -89899 | -88090 | . 86345 | -84659 | . 83031 | . 81458 | 83 |
| 84 | '90353 | -88617 | . 86940 | -85317 | - 83747 | . 82228 | 84 |
| 85 | $\cdot 90778$ | -89rio | .87496 | . 85932 | -84416 | -82948 |  |
| 86 | $\cdot 91200$ | -89601 | . 88850 | -86545 | -85084 | $\cdot 83667$ | 86 |
| 87 | '91645 | -90118 | . 88635 | -87194 | . 85792 | - 84430 | 87 |
| 88 | .92113 | '90663 | -89252 | - 87878 | -8654I | $\cdot 85239$ | - 88 |
| 89 | '92659 | . 91301 . | -89977 | . 88686 | $\cdot 87427$ | .86r98 | 89 |
| 90 | -93272 | -92020 | -90796 | . 89600 | -88432 | -87290 | 90 |
| 91 | -93899 | -92756 | '91637 | -90541 | - 89468 | -88417 | 91 |
| 92 | -94538 | '93508 | -92498 | -91507 | -90534 | -89579 | 92 |
| 93 | '95224 | 94317 | '93426 | -92549 | $\cdot 91687$ | -90840 | 93 |
| 94 | '95899 | 95116 | -94344 | '93583 | -92834 | '92096 | 94 |
|  | -96542 | '95878 | - 95222 | -94575 | -93934 | $\cdot 93304$ | 95 |
| 96 | -97124 | -96568 | .96018 | $\cdot 95475$ | $\cdot 94933$ | ${ }^{-94405}$ | 96 |
| 97 | '97561 | ${ }^{\prime} 97087$ | '96618 | '96154 | -95694 | '95238 | 97 |


| ANNUAL PAYMENT DURING LIFE TO SECURE \&1 AT DEATH ACCORDING TO THE <br> institute of actuaries healthy males table |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | $2 \frac{1}{2} \%$ | $3 \%$ | 31 \% | 4\% | 4 $\frac{1}{2}$ \% | $5 \%$ | Age |
| 10 | -OII67 | $\cdot 01064$ | -00975 | -00899 | -00833 | $\cdot 00776$ | 10 |
| 11 | - 01193 | -01088 | $\cdot 00998$ | $\cdot 00920$ | $\cdot 00852$ | -00794 | 11 |
| 12 | - 01233 | -01117 | -01026 | $\cdot 00947$ | -00878 | $\cdot 00819$ | 12 |
| 13 | $\bigcirc 01257$ | -01151 | -01058 | -00978 | $\cdot 00909$ | -00848 | 13 |
| 14 | -01295 | - 01188 | -01094 | -01014 | -00943 | -00882 | 14 |
| 15 | - 01334 | -01227 | - 01133 | -01052 | -0098I | $\cdot 00919$ | 15 |
| 16 | -01376 | - 1268 | - 01174 | $\cdot 01092$ | - 01020 | -00958 | 16 |
| 17 | -oisl 8 | -01309 | $\bigcirc 01215$ | -OII32 | -01060 | '00998 | 17 |
| 18 | -OI459 | - 01350 | -01255 | $\cdot 01172$ | -01099 | -01036 | 18 |
| 19 | -01499 | -01390 | -01294 | -01210 | -OII36 | -01072 | 19 |
| 20 | -01538 | -01427 | - 01330 | -01245 | -01170 | -01104 | 20 |
| 2 I | -15 576 | -OI 464 | -01365 | - 01279 | -01202 | . 1135 | 21 |
| 22 | -1615 | -01501 | - 1401 | -01313 | -01235 | -01166 | 22 |
| 23 | -01655 | -ois 50 | -01438 | -01348 | -01269 | - 01199 | 23 |
| 24 | '01697 | -01581 | -01478 | -01387 | -01306 | -01234 | 24 |
| 25 | '01742 | -01625 | -01521 | -01428 | - 01346 | -01272 | 25 |
| 26 | '01790 | -01672 | -01566 | -01472 | -01388 | - 01314 | 26 |
| 27 | -01840 | -01721 | -01614 | -01519 | -OI433 | - 01357 | 27 |
| 28 | '01893 | -01772 | $\bigcirc 01664$ | -01567 | -120 | -OI403 | 28 |
| 29 | -01947 | -01825 | -01715 | -01617 | - 01529 | - 01450 | 29 |
| 30 | -02003 | -or 880 | -01769 | -1669 | - 01580 | -OI499 | 30 |
| 3 x | -02061 | -01936 | -01824 | -01723 | -01632 | - 01550 | 3 L |
| 32 | -02121 | -19996 | - 01883 | -1780 | -01688 | -01604 | 32 |
| 33 | '02185 | -02058 | $\bigcirc 01944$ | -01840 | -01746 | -0166I | 33 |
| 34 | -02252 | -02124 | -02008 | -01903 | -01807 | -01721 | 34 |
| 35 | -02322 | $\cdot 02193$ | -02076 | -01969 | -01872 | -01784 | 35 |
| 36 | -02395 | -02265 | '02146 | -02038 | -01940 | -01850 | 36 |
| 37 | -0247 | -02340 | -02221 | -02111 | . 020211 | -01920 | 37 |
| 38 | . 02551 | -02419 | -02298 | $\cdot 02187$ | -02086 | - 01993 | 38 |
| 39 | -02635 | -02502 | -02380 | -02267 | -02164 | -02069 | 39 |
| 40 | -02723 | -02589 | -02465 | -02352 | -02247 | . 02151 | 40 |
| 41 | $\cdot 02817$ | -02682 | -02557 | -02442 | '02336 | -02238 | 41 |
| 42 | -02917 | -02780 | -02654 | -02538 | -02430 | -0233I | 42 |
| 43 | $\cdot 03022$ | -02885 | -02758 | $\bigcirc$ | -02532 | -02431 | 43 |
| 44 | '03134 | -02996 | -02868 | -02749 | -02639 | -02537 | 44 |
| 45 | -03253 | -03114 | -02985 | -02865 | -02754 | -02650 | 45 |
| 46 | -03377 | -03238 | -03108 | $\cdot 02987$ | -02874 | -02769 | 46 |
| 47 | -03508 | -03367 | -03237 | .03115 | -03001 | -02895 | 47 |
| 48 | -03645 | '03504 | -03372 | -03249 | -03134 | -03026 | 48 |
| 49 | -03790 | -03648 | -03515 | -03391 | -03275 | .03166 | 49 |
| 50 | -03943 | -03801 | -03667 | -03542 | -03424 | -03314 | 50 |
| 5 5 | -04106 | $\cdot 03963$ | -03828 | -03702 | -03583 | -03471 | 51 |
| 52 | -04279 | -04136 | -04000 | $\bigcirc 03873$ | -03753 | -03640 | 52 |
| 53 | -04464 | ${ }^{\text {- } 04320}$ | -04184 | -04056 | -03935 | -0382I | 53 |
| 54 | -04661 | -04516 | '04379 | '04250 | -04129 | ${ }^{\circ} \mathrm{O401} 3$ | 54 |

For explanation see pp. 27, 28

| ANNUAL PAYMENT DURING LIFE TO SECURE \&1 at DEATH ACCORDING TO THE INSTITUTE OF actuaries healthy males table |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | 212\% | $3 \%$ | 3 $\frac{1}{2} \%$ | $4 \%$ | $4 \frac{1}{2} \%$ | $5 \%$ | Age |
| 55 | .04870 .05092 | . 04725 | .04588 .04809 | .04458 .04678 | . 04335 | -04219 | 55 |
| 56 57 | -05092 <br> $\cdot$ | -04946 | -04809 | .04678 | .04555 | .04437 | 56 57 |
| 58 | -05580 | -05434 | -05295 | -05163 | -05038 | -4918 | 58 |
| 59 | $\bigcirc 05848$ | -05702 | -05563 | ${ }^{\circ} \mathrm{O} 43 \mathrm{I}$ | -05304 | ${ }^{\circ} \mathrm{O} 184$ | 59 |
| 60 | -06134 | -05987 | -05848 | '05715 | -05588 | $\cdot 05467$ | 60 |
| 61 | -06437 | -06291 | -06151 | -06018 | . 05890 | -05768 | 6I |
| 62 | $\cdot{ }^{\circ} \mathrm{0} 760$ | .06613 | -06473 | '06339 | -062II | -06087 | 62 |
| 63 | -07102 | -06956 | -06815 | -06680 | -06551 | $\cdot 06427$ | 63 |
| 64 | '07466 | -07319 | -07177 | -07042 | -06912 | $\cdot 06787$ | 64 |
| 65 | -07853 | -07705 | -07564 | -07427 | -07296 | -07170 | 65 |
| 66 | -08268 | .08120 | -07978 | -07841 | -07709 | $\cdot 07581$ | 66 |
| 67 | -08714 | -08566 | -08423 | -08286 | .08153 | -08025 | 67 |
| 68 | -09197 | -09049 | -08906 | $\cdot 08767$ | -08634 | $\cdot 08504$ | 68 |
| 69 | $\cdot 09725$ | -09576 | -09433 | -09294 | -09160 | -09030 | 69 |
| 70 | -10297 | -10148 | -10005 | -09866 | -09731 | -09601 | 70 |
| 71 | -10914 | -10766 | -10622 | -10483 | -10348 | -10218 | 71 |
| 72 | -II572 | -II425 | - 11281 | - III 142 | - 11007 | - 11876 | 72 |
| 73 | -12267 | -12119 | - 11976 | - 11836 | -11701 | - I 1569 | 73 |
| 74 | -12988 | - 12840 | -12696 | -12556 | -12420 | -12287 | 74 |
| 75 | -13734 | -13585 | -13440 | -13299 | -1316I | -13027 | 75 |
| 76 | -14532 | - I4382 | -14236 | -14094 | - 13954 | -13819 | 76 |
| 77 | - 53382 | - 15230 | -15083 | - 14939 | -I4798 | - 14660 | 77 |
| 78 | -16291 | -16138 | -15989 | -15843 | -15701 | -15561 | 78 |
| 79 | -17275 | -17121 | -16970 | -16823 | -16679 | -16538 | 79 |
| 80 | -18329 | -18174 | -18022 | -17873 | -17727 | $\cdot 17584$ | 80 |
| $8 \mathrm{8r}$ | -19435 | -19277 | -19123 | -18972 | -I8824 | -18679 | 81 |
| 82 | -20559 | - 20399 | - 20242 | -20089 | -19938 | -19790 | 82 |
| 83 | $\cdot 21707$ | $\cdot 21543$ | $\cdot 21383$ | -21225 | $\cdot 21071$ | -20920 | 83 |
| 84 | -22844 | $\cdot 22676$ | -22510 | -22348 | -22189 | $\cdot 22032$ | 84 |
|  | -24009 | $\cdot 23834$ | $\cdot 23662$ | -23493 | - 23327 | -23163 | 85 |
| 86 | - 25279 | $\cdot 25096$ | $\cdot 24916$ | - 24739 | $\cdot 24565$ | -24393 | 86 |
| 87 | $\cdot 26755$ | $\cdot 26563$ | -26373 | $\cdot 26187$ | $\cdot 26003$ | - 25823 | 87 |
| 88 | $\cdot 28485$ | - 28282 | $\cdot 2808 \mathrm{I}$ | $\cdot 27884$ | $\cdot 27689$ | -27498 | 88 |
| 89 | $\cdot 30786$ | $\cdot 30570$ | ${ }^{3} 30358$ | -30149 | -29943 | -29740 | 89 |
| 90 | -33813 | $\cdot 33585$ | $\cdot 33360$ | -33138 | -32919 | -32703 | 90 |
| 91 | $\cdot 37537$ | $\cdot 37294$ | $\cdot 37053$ | -36816 | -36582 | -36351 | 91 |
| 92 | - 42217 | -41954 | -41694 | -41438 | $\cdot 41185$ | $\cdot 40935$ | 92 |
| 93 | $\cdot 48624$ | -48338 | $\cdot 48055$ | $\cdot 47776$ | $\cdot 47499$ | -47226 | 93 |
| 94 | '57035 | -56719 | $\cdot 56405$ | $\cdot 56095$ | -55789 | '55486 | 94 |
|  | -68105 | -67748 | -67394 | . 67044 | -66696 | -66354 | 95 |
| 96 | -82364 | -81954 | -81546 | -81144 | -80742 | 80350 | 96 |
| 97 | '97561 | $\cdot 97087$ | '96618 | '96154 | '95694 | '95238 | 97 |

PRESENT VALUE OF REVERBION TO A PERPETUITY AT DEATH OF A PERSON OF AGE STATED. GOVERNMENT EXPERIENCE, 1883

MaLeS

| Age | $2 \frac{1}{2} \%$ | $3 \%$ | $3 \frac{1}{2} \%$ | $4 \%$ | $5 \%$ | Age |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 17.566 | 12.772 | 9.635 | . | ... | 20 |
| 25 | 18.718 | 13.732 | 10.441 | ... | ... | 25 |
| 30 | 19.921 | 14.745 | II 300 | ... | ... | 30 |
| 35 | 21.178 | I5.818 | 12:218 | ... | ... | 35 |
| 40 | 22.499 | 16.957 | $13 \cdot 206$ | $10 \cdot 546$ | 7'117 | 40 |
| 41 | $22 \cdot 773$ | 17.195 | 13.413 | $10 \cdot 727$ | $7 \cdot 257$ | 41 |
| 42 | 23.050 | 17.436 | 13.624 | 10.912 | $7 \cdot 401$ | 42 |
| 43 | 23.330 | 17.680 | 13.838 | II'IOI | $7 \cdot 549$ | 43 |
| 44 | $23 \cdot 613$ | 17.929 | 14.057 | 11.293 | 7700 | 44 |
| 45 | 23.901 | 18.I8I | 14.279 | 11.490 | 7.855 | 45 |
| 46 | 24.193 | 18.438 | 14.506 | 11.691 | $8 \cdot 014$ | 46 |
| 47 | 24.489 | $18 \cdot 700$ | 14.738 | 11.897 | 8-178 | 47 |
| 48 | 24791 | $18 \cdot 967$ | 14.976 | $12 \cdot 109$ | $8 \cdot 347$ | 48 |
| 49 | $25 \cdot 100$ | 19.242 | 15.220 | $12 \cdot 327$ | $8 \cdot 523$ | 49 |
| 50 | 25.412 | 19.520 | 15.468 | 12.550 | $8 \cdot 702$ | 50 |
| 51 | $25 \cdot 732$ | 19.807 | $15 \cdot 726$ | $12 \cdot 78 \mathrm{I}$ | $8 \cdot 890$ | 5I |
| 52 | $26 \cdot 059$ | 20.100 | 15.989 | 13.018 | 9.084 | 52 |
| 53 | $26 \cdot 392$ | 20.400 | 16.260 | 13.263 | $9 \cdot 286$ | 53 |
| 54 | $26 \cdot 733$ | 20.708 | $16 \cdot 539$ | 13.516 | $9 \cdot 494$ | 54 |
| 55 | 27.081 | 21.024 | 16.825 | 13.776 | $9 \cdot 711$ | 55 |
| 56 | 27.437 | 21.347 | 17.120 | 14.045 | 9.937 | 56 |
| 57 | 27.802 | 21.680 | 17.425 | 14.324 | $10 \cdot 172$ | 57 |
| 58 | 28.177 | $22 \cdot 023$ | 17.739 | 14.613 | 10.417 | 58 |
| 59 | $28 \cdot 561$ | 22.377 | 18.065 | 14.914 | 10.674 | 59 |
| 60 | $28 \cdot 946$ | 22.732 | $18 \cdot 393$ | $15 \cdot 217$ | 10.935 | 60 |
| $6 I$ | 29.322 | 23.079 | $18 \cdot 714$ | 15.515 | I I'192 | 6I |
| $62$ | 29.686 | 23.417 | $19 \cdot 028$ | 15.806 | I I 444 | 62 |
| 63 | 30.052 | 23.756 | 19.343 | 16.100 | II 1700 | 63 |
| 64 | 30.414 | 24.094 | 19.658 | 16.395 | I I 959 | 64 |
| 65 | 30.775 | 24.43I | 19.974 | 16.691 | 12:219 | 65 |
| 66 | 31.125 | 24.760 | $20 \cdot 282$ | 16.980 | 12.475 | 66 |
| 67 | 31.467 | 25.081 | $20 \cdot 584$ | 17.264 | 12727 | 67 |
| 68 | $3 \mathrm{I} \cdot 804$ | 25.397 | 20.882 | 17.545 | 12.977 | 68 |
| 69 | 32.142 | $25 \cdot 716$ | 21.183 | 17.829 | 13.232 | 69 |
| 70 | 32.479 | $26 \cdot 034$ | 21.484 | 18.114 | 13.488 | 70 |
| 71 | 32.809 | $26 \cdot 347$ | $21 \cdot 781$ | 18.396 | 13.743 | 71 |
| 72 | 33.136 | $26 \cdot 658$ | 22.076 | 18.677 | 13.997 | 72 |
| 73 | 33.454 33.755 | 26.960 | 22.363 | 18.950 | 14.246 | 73 |
| 74 | 33.755 34.045 | $27 \cdot 247$ 27.524 | 22.637 | 19.212 | 14.485 | 74 |
| 75 | 34.045 | 27.524 | $22 \cdot 902$ | 19.465 | 14.717 | 75 |
| 76 | 34.328 | 27.795 | $23 \cdot 161$ | 19.714 | 14.946 | 76 |
| 77 | 34.596 | 28.052 28.300 | 23.408 | 19.950 | $15 \cdot 164$ | 77 |
| 78 | 34.855 | $28 \cdot 300$ 28.545 | $23 \cdot 646$ 23.882 | $20 \cdot 179$ 20.406 | 15.376 15.587 | 78 |
| 79 80 | $35 \cdot 109$ 35.353 | $28 \cdot 545$ $28 \cdot 780$ | $23 \cdot 882$ | $20 \cdot 406$ $20 \cdot 624$ | 15.587 | 79 |
| 80 | $35 \cdot 353$ | $28 \cdot 780$ | $24 \times 108$ | $20 \cdot 624$ | 15790 | 80 |

For explanation see p. 28

## PRESENT VALUE OF REVERSION TO A PERPETUITY AT DEATH OF A PERSON OF AGE STATED. GOVERNMENT EXPERLENCE, 1883

FEMALES

| Age | 21 $\%$ | $3 \%$ | $3 \frac{1}{2} \%$ | $4 \%$ | $5 \%$ | Age |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | 15.521 | 11.041 | $8 \cdot 162$ | ... | $\cdots$ | 20 |
| 25 | 16.603 | 11.918 | $8 \cdot 876$ | ... | ... | 25 |
| 30 | 17.777 | 12.882 | $9 \cdot 673$ | ... | ... | 30 |
| 35 | 19.061 | 13.953 | 10.570 | $\cdots$ | $\ldots$ | 35 |
| 40 | $20 \cdot 477$ | 15.153 | 11.591 | $9 \cdot 096$ | 5.937 | 40 |
| 41 | 20.777 | 15.411 | 11813 | 9.288 | 6.080 | 41 |
| 42 | 21.085 | 15.676 | 12.042 | 9.486 | $6 \cdot 231$ | 42 |
| 43 | 21.399 | 15.947 | 12.277 | 9.690 | $6 \cdot 387$ | 43 |
| 44 | 21.721 | $16 \cdot 226$ | 12.520 | 9.902 | $6 \cdot 549$ | 44 |
| 45 | 22.050 | 16.513 | 12.770 | $10 \cdot 121$ | 6.719 | 45 |
| 46 | 22.388 | 16.808 | 13.028 | $10 \cdot 348$ | 6.895 | 46 |
| 47 | 22.734 | 17.112 | 13.295 | $10 \cdot 584$ | 7.080 | 47 |
| 48 | 23.089 | 17.423 | 13.571 | 10.827 | $7 \cdot 273$ | 48 |
| 49 | 23.448 | 17.741 | 13.852 | 11.077 | 7.472 | 49 |
| 50 | 23.810 | 18.063 | $14 \cdot 137$ | 11.331 | $7 \cdot 675$ | 50 |
| 51 | $24 \cdot 169$ | 18.382 | 14.422 | 11.585 | 7.879 | 51 |
| 52 | $24 \cdot 535$ | 18.707 | 14.712 | 11.845 | 8.089 | 52 |
| 53 | 24.909 | 19.04 I | 15.013 | 12.115 | $8 \cdot 308$ | 53 |
| 54 | $25 \cdot 288$ | 19.382 | 15.319 | 12.391 | 8.533 | 54 |
| 55 | 25.67 I | 19.726 | 15.629 | 12.672 | $8 \cdot 764$ | 55 |
| 56 | 26.064 | 20.081 | 15.951 | 12.964 | 9.006 | 56 |
| 57 | 26.462 | $20 \cdot 443$ | $16 \cdot 279$ | 13.262 | 9.255 | 57 |
| 58 | $26 \cdot 862$ | $20 \cdot 806$ | $16 \cdot 611$ | 13.565 | 9.508 | 58 |
| 59 60 | 27.265 27.667 | $21 \cdot 173$ 21.542 | 16.946 17.284 | 13.872 14.182 | 9767 10.029 | 59 60 |
| 61 | 28.075 | 21.916 | 17.628 | 14.500 | 10.300 | 61 |
| 62 | 28.477 | 22.287 | 17.970 | 14.815 | 10.571 | 62 |
| 63 | 28.880 | 22.659 | 18.314 | 15.134 | $10 \cdot 845$ | 63 |
| 64 | 29.287 | 23.036 | 18.664 | 15.459 | $1 \mathrm{I} \cdot 127$ | 64 |
| 65 | 29.704 | 23.424 | 19.025 | 15796 | 11.42 I | 65 |
| 66 | $30 \cdot 120$ | 23.812 | 19.388 | $16 \cdot 135$ | 11.718 | 66 |
| 67 | $30 \cdot 537$ | 24.202 | 19753 | 16.477 | 12.020 | 67 |
| 68 | 30.948 | 24.588 | 20.115 | 16.818 | 12.322 | 68 |
| 69 | 31.350 | 24.966 | 20.471 | 17.153 17.480 | 12.621 | 69 |
| 70 | 31.740 | 25.333 | 20.817 | 17.480 | 12.913 | 70 |
| 71 | $32 \cdot 107$ | 25.679 | $2 \mathrm{I} \cdot 145$ | 17.790 | 13.191 | 71 |
| 72 | 32.461 | $26 \cdot 014$ | 21.461 | 18.090 | 13.461 | 72 |
| 73 | 32.804 33.157 | $26 \cdot 339$ | 21.770 | $18 \cdot 383$ 18.669 | 13.726 13.986 | 73 |
| 74 | 33.137 | 26.655 | 22.071 | 18.669 18.952 | 13.986 14.243 | 74 |
| 75 | 33.463 | $26 \cdot 967$ | 22.367 | $18.95{ }^{2}$ | 14.243 | 75 |
| 76 | 33.780 | 27.269 | 22.656 | 19.227 | 14.496 | 76 |
| 77 | 34.089 34.89 | 27.564 27.850 | 22.938 23.212 | 19.498 19.760 | 14.744 14.985 | 77 |
| 78 | $34 \cdot 387$ | 27.850 | 23.212 | 19.760 | 14.985 | 78 |
| 79 | $34 \cdot 677$ $34 \cdot 956$ | $28 \cdot 128$ 28.396 | 23.479 23 | $20 \cdot 017$ 20.265 | 15.223 15.453 | 79 80 |


| Present Value of Reversion to a Perpetuity at Death of a Person of Age stated. <br> NORTHAMPTON TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Age | $3 \%$ | $4 \%$ | $5 \%$ | $6 \%$ | Age |
| 5 10 | 12.860 12.670 | 7752 | $5 \cdot 173$ 4.861 | 3.705 3.382 | 5 |
| 10 | 12.670 13.676 | 7.477 8.209 | 4.861 5.412 | 3.382 3.810 | 10 |
| 20 | 14.695 | 8.967 | 5.993 | 4.269 | 20 |
| 25 | 15.519 | $9 \cdot 562$ | 6.433 | 4.604 | 25 |
| 30 | 16.411 | 10.219 | 6.928 | 4.985 | 30 |
| 35 | 17.395 | 10.961 | 7.498 | 5.43 I | 35 |
| 40 | 18.485 | 11.803 | $8 \cdot 163$ | 5.962 | 40 |
| 45 | 19.64 I | 12.717 | 8.895 | $6 \cdot 557$ | 45 |
| 50 | 20.897 | 13.736 | 9.73 I | 7.250 | 50 |
| 55 | $22 \cdot 183$ | 14.799 | 10.618 | 7.997 |  |
| 60 | $23 \cdot 556$ | 15.961 | 11.608 | 8.847 | 60 |
| 65 | 25.029 | ${ }_{17} 7.239$ | $12 \cdot 724$ | 9.826 | 65 |
| 70 | $26 \cdot 599$ | 18.639 | 13.977 | 10.951 | 70 |
| 75 | 28.134 | 20.038 | 15.256 | 12.125 | 75 |
| 80 | 29.552 | 21.357 | 16.485 |  | 80 |
| 85 | 30.713 | 22.457 | 17.529 | 14.265 | 85 |
| 90 | 31.539 | 23.242 | 18.277 | 14.978 | 90 |
| 95 | 33.091 | 24.760 | 19.762 | $16 \cdot 431$ | 95 |
| CARLISLE TABLE |  |  |  |  |  |
| Age | $3 \%$ | $4 \%$ | $5 \%$ | $6 \%$ | Age |
| 5 10 | 9.640 9.821 | 5.406 | 3.410 3.331 | 2.342 | 5 |
| 10 | 9.821 10.751 | 5.415 6.044 | 3.33 I | 2.219 | 10 |
| 20 | II 639 | 6.637 | 4.183 | 2.541 2.832 | 15 20 |
| 25 | 12.668 | 7355 | $4 \cdot 697$ | 3.211 | 25 |
| 30 | 13.777 | $8 \cdot 148$ | $5 \cdot 277$ | 3.647 | 30 |
| 35 | 14.900 | $8 \cdot 959$ | 5.873 | 4.094 | 35 |
| 40 | 16.190 17.470 | 9.926 | 6.610 | $4 \cdot 665$ | 40 |
| 45 | 17.470 | 10.896 | 7.352 | 5.239 | 45 |
| 50 | 19.030 | 12.131 | 8.340 | 6.036 | 50 |
|  | 20.925 | 13.700 | 9.653 |  | 55 |
| 60 | 22.842 | 15.337 | 11.060 | $8 \cdot 363$ | 60 |
| 65 | 24.416 | 16.693 | 12.235 | $9 \cdot 386$ | 65 |
| 70 | 26.210 | 18.291 | 13.664 | $10 \cdot 669$ | 70 |
| 75 | 27.82 I | 19.761 | $15^{\circ} \mathrm{OII}$ | 1 I 907 | 75 |
| 80 | 28.968 | 20.817 | 15.985 | 12.809 | 80 |
| 85 | $30 \cdot 104$ | $2 \mathrm{~L} \cdot 885$ | 16.99 r | 13.758 | 85 |
| 90 | 30.834 | 22.584 | 17.661 | 14.401 | 90 |
| 95 | $30 \cdot 576$ | $22 \cdot 326$ | 17.404 | 14.145 | 95 |

For explanation see p. 28

## TABLES

COMBINING

# MORTALITY OF TWO AND THREE LIVES <br> AND 

INTEREST

PREMIUM CONVERSION TABLES

## MORTALITY TABLES-TWO LIVES

| Value of an Annuity for the Joint Continuance of Two Lives according to the NORTHAMPTON TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | 4\% | $5 \%$ | Ages | $3 \%$ | 4\% | $5 \%$ |
| 15 15 | 15.220 | 13.41 I | II 964 | 3545 | 10.622 | 9.706 | $8 \cdot 921$ |
| 1520 | 14.660 | 12.961 | 11.585 | 3550 | 9.912 | 9.110 | 8.415 |
| 1525 | 14.230 | 12.630 | II•324 | 3555 | 9.13 I | 8.448 | 7.849 |
| 1530 | 13.734 | 12.246 | 11.021 | 3560 | $8 \cdot 227$ | $7 \cdot 669$ | $7 \cdot 174$ |
| 1535 | $13 \cdot 151$ | 11.787 | 10.655 | 3565 | 7.177 | 6.747 | $6 \cdot 360$ |
| 1540 | 12.459 | 11.234 | $10 \cdot 205$ | 3570 | 5.971 | 5.663 | $5 \cdot 382$ |
| I5 45 | 11.687 | 10.607 | 9.690 | 3575 | $4 \cdot 720$ | 4.516 | 4.327 |
| 1550 | 10.799 | 9.872 | 9.076 | 3580 | 3.506 10.764 | 3.383 | 3.268 |
| 1555 | 9.851 | 9.077 | 8.403 | 4040 | 10.764 10.264 | 9.820 | 9.016 |
| 1560 | $8 \cdot 790$ | 8.170 | 7.622 | 4045 | $10 \cdot 236$ | $9 \cdot 381$ | $8 \cdot 643$ |
| 1565 | $7 \cdot 597$ | 7.127 | $6 \cdot 705$ | 4050 | $9 \cdot 590$ | 8.834 | $8 \cdot 177$ |
| 1570 | $6 \cdot 264$ | 5.933 | $5 \cdot 631$ | 4055 | 9.870 | $8 \cdot 221$ | $7 \cdot 651$ |
| 1575 | 4.911 | $4 \cdot 695$ | 4.495 | 4060 | 8.025 | 7.490 | 7.015 |
| 1580 | $3 \cdot 621$ | 3.492 | 3.372 | 4065 | $7{ }^{\circ} \mathrm{O} 0$ | 6.614 | 6.240 |
| 2020 | 14.133 | $12 \cdot 535$ | II 232 | 4070 | $5 \cdot 871$ | $5 \cdot 57 \mathrm{I}$ | $5 \cdot 298$ |
| 2025 | 13.741 | 12.229 | 10.989 | 4075 | $4 \cdot 656$ | 4.457 | 4.272 |
| 2030 | 13.286 | $1 \mathrm{I} \cdot 873$ | $10 \cdot 707$ | 4080 | 3.469 | 3.349 | 3.236 |
| 2035 | 12.744 | 11.445 | 10.363 | 4545 | $9 \cdot 776$ | 8.990 | 8.312 |
| 2040 | 12.096 | $10 \cdot 924$ | 9.937 | 4550 | $9 \cdot 204$ | $8 \cdot 503$ | $7 \cdot 89 \mathrm{I}$ |
| 2045 | 11.367 | $10 \cdot 330$ | $9 \cdot 448$ | 4555 | $8 \cdot 557$ | $7 \cdot 948$ | 74.11 |
| 2050 | 10.523 | $9 \cdot 630$ | 8.86I | 4560 | $7 \cdot 781$ | 7.274 | $6 \cdot 822$ |
| 2055 | 9.617 | 8.869 | $8 \cdot 216$ | 4565 | $6 \cdot 850$ | 6.453 | 6.094 |
| 2060 | $8 \cdot 597$ | 7.995 | $7 \cdot 463$ | 4570 | $5 \cdot 749$ | $5 \cdot 460$ | $5 \cdot 195$ |
| 2065 | 7.444 | 6.986 | $6 \cdot 576$ | 4575 | 4.580 | $4 \cdot 386$ | $4 \cdot 206$ |
| 2070 | $6 \cdot 149$ | $5 \cdot 826$ | 5.532 | 4580 | $3 \cdot 426$ | $3 \cdot 308$ | 3.197 |
| 2075 | 4.831 | 4.619 | $4 \cdot 424$ | 5050 | $8 \cdot 714$ | 8.08I | $7 \cdot 522$ |
| 2080 | $3 \cdot 569$ | 3.443 | 3.325 | 5055 | $8 \cdot 152$ | $7 \cdot 593$ | 7.098 |
| 2525 | 13.383 | I1.944 | ${ }^{10} 764$ | 5060 | 7.46 I | 6.989 | $6 \cdot 568$ |
| 2530 | 12.966 | 11.618 | 10-499 | 5065 | $6 \cdot 611$ | 6.236 | $5 \cdot 897$ |
| 2535 | 12.463 | 11.217 | 10•175 | 5070 | $5 \cdot 582$ | $5 \cdot 306$ | 5.054 |
| 2540 | 11.854 | 10'725 | 9.771 | 5075 | 4.472 | $4 \cdot 285$ | $4 \cdot 112$ |
| 2545 | II•164 | $10 \cdot 160$ | 9.304 | 5080 | 3.362 | 3.247 | 3.140 |
| 2550 | 10.356 | 9.488 | $8 \cdot 739$ | 5555 | 7.68 I | ${ }^{7 \cdot 1} 79$ | $6 \cdot 735$ |
| 2555 | 9.484 | $8 \cdot 754$ | $8 \cdot 116$ | 5560 | 7.088 | $6 \cdot 659$ | 6.272 |
| 2560 | $8 \cdot 495$ | $7 \cdot 906$ | $7 \cdot 383$ | 5565 | $6 \cdot 334$ | $5 \cdot 986$ | $5 \cdot 67 \mathrm{I}$ |
| 2565 | 7370 | $6 \cdot 920$ | $6 \cdot 515$ | 5570 | $5 \cdot 391$ | 5'132 | 4.893 |
| 2570 | 6.099 | $5 \cdot 780$ | 5.489 | 5575 | 4.350 | $4 \cdot 171$ | 4.006 |
| 2575 | 4.799 3.550 | 4.589 3 | 4.396 | 5580 | 3.291 6.606 | $3 \cdot 180$ 6.226 | 3.076 5.888 |
| 2580 | 3.550 | 3.425 | 3.308 | 6060 | $6 \cdot 606$ | $6 \cdot 226$ | $5 \cdot 888$ |
| 3030 | 12.589 | 11.353 | $10 \cdot 255$ | 6065 | $5 \cdot 970$ | $5 \cdot 658$ | 5.372 |
| 3035 | 12.131 | 10.948 | 9.954 | 6070 | 5'139 | 4.900 | 4.580 |
| 3040 | II 5688 | 10.490 | 9.576 | 6075 | 4.189 | 4.021 | 3.866 |
| 3045 | 10.923 | 9.959 | 9.135 | 6080 | $3 \cdot 197$ | 3.092 | 2.992 |
| 3050 | $10 \cdot 160$ | $9 \cdot 32 \mathrm{I}$ | $8 \cdot 596$ | 6565 | $5 \cdot 471$ | $5 \cdot 201$ | 4.960 |
| 3055 | 9329 | 8.619 | 7.999 | 6570 | $4{ }^{7} 78$ | 4.573 | $4 \cdot 378$ |
| 3060 | $8 \cdot 378$ | 7.802 | 7.292 | 6575 | 3.958 | 3.806 | $3 \cdot 665$ |
| 3065 | $7 \cdot 286$ | 6.844 | 6.447 | 6580 | 3.063 | 2.965 | $2 \cdot 873$ |
| 3070 | 6.043 | $5 \cdot 729$ | 5.442 | 7070 | 4.26 I | 4.087 | 3.930 |
| 3075 | 4.764 3 | 4.557 | $4 \cdot 365$ | 7075 | $3 \cdot 599$ | 3.47 I | 3.347 |
| 3080 | $3 \cdot 530$ | 3.406 | 3.290 | 7080 | 2.843 | $2 \cdot 757$ | $2 \cdot 675$ |
| 3535 | $11 \cdot 722$ | 10.612 | $9 \cdot 680$ | 7575 | $3 \cdot 114$ | 3.015 | 2.917 |
| 3540 | 11.213 | 10.196 | 9.33 I | 7580 | $2 \cdot 526$ | 2.448 | $2 \cdot 381$ |

For explanation see pp. 29-3I

MORTALITY TABLES-TWO LIVES

| Value of an Annuity for the Joint Continuance of Two Lives according to the CARLISLE TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | Ages | $3 \%$ | Ages | $3 \%$ | Ages | $3 \%$ |
| 5 | 19.815 | 1585 | $3 \cdot 149$ | 3540 | 14.048 |  | 6.019 |
| 510 | 19.873 | 1590 | 2.44 I | $35 \quad 45$ | 13.33I | 5575 | 4*813 |
| 515 | 19.288 | 1595 | 2.699 | $35 \quad 50$ | I2.313 | 5580 | 3.920 |
| 520 | 18.723 | 15100 | I $\cdot 663$ | 3555 | 10.919 | 5585 | 2.961 |
| 525 | 18.016 | $20 \quad 20$ | 17.992 | 3560 | 9.410 | 5590 | $2 \cdot 307$ |
| 530 | 17.218 | $20 \quad 25$ | 17.420 | 3565 | 8.140 | 5595 | 2.575 |
| 535 | 16.390 | $\begin{array}{ll}20 & 30\end{array}$ | 16.748 | 3570 | $6 \cdot 608$ | 55100 | I. 625 |
| 540 | 15.391 | 2035 | 16.031 | 3575 | $5 \cdot 179$ | 6060 | $7 \cdot 295$ |
| 545 | I4.38I | 2040 | 15.131 | 3580 | $4 \cdot 148$ | 6065 | $6 \cdot 589$ |
| $5 \quad 50$ | 13.092 | 2045 | 14.207 | 3585 | 3.095 | 6070 | 5.565 |
| 555 | 11.463 | $20 \quad 50$ | 12.995 | 3590 | 2.403 | 6075 | $4 \cdot 497$ |
| 560 | 9.773 | 2055 | 11.428 | 3595 | 2.663 | 6080 | 3.695 |
| 565 | $8 \cdot 372$ | 2060 | $9 \cdot 782$ | 35100 | 1.650 | 6085 | 2.812 |
| $\begin{array}{ll}5 & 70 \\ 5 & 75\end{array}$ | $6 \cdot 737$ | $\begin{array}{ll}20 & 65\end{array}$ | $8 \cdot 411$ | 4040 | 13.482 | 6090 | 2.199 |
| 575 | 5.244* | 2070 | 6.790 | $40 \quad 45$ | 12.869 | 6095 | 2.458 |
| 580 | $4 \cdot 175$ | 2075 | $5 \cdot 298$ | $40 \quad 50$ | II 955 | 60100 | 1-577 |
| 585 | $3 \cdot 102$ | $\begin{array}{ll}20 & 80 \\ \\ 20\end{array}$ | 4.225 | 4055 | $10 \cdot 658$ | 6565 | 6.047 |
| 590 | 2.405 | $\begin{array}{ll}20 & 85\end{array}$ | 3.143 | 4060 | $9 \cdot 224$ | 6570 | 5•193 |
| 595 | 2.658 | $20 \quad 90$ | 2.437 | 4065 | 8.006 | 6575 | 4.256 |
| 5100 | 1.637 | 2095 | 2.696 | $40 \quad 70$ | $6 \cdot 515$ | 6580 | $3 \cdot 542$ |
| 10 10 | 19.964 | 20100 | I 661 | 4075 | 5•II5 | 6585 | $2 \cdot 719$ |
| IO 15 | 19.409 | $25 \quad 25$ | 16.915 | 4080 | 4.102 | 6590 | 2.13I |
| IO 20 | 18.872 | 2530 | $16 \cdot 311$ | 4085 | 3.065 | 6595 | $2 \cdot 398$ |
| 10 25 | 18•189 | 2535 | 15.660 | $40 \quad 90$ | $2 \cdot 380$ | 65100 | I 555 |
| 10 30 | 17.410 | 2540 | 14.823 | 4095 | 2.639 | 7070 | 4.556 |
| 10 35 | 16.596 | 2545 | 13.954 | 40100 | 1.641 | 7075 | $3 \cdot 804$ |
| 10 40 | 15.605 | $25 \quad 50$ | $12 \cdot 793$ | 4545 | 12.37 I | $70 \quad 80$ | $3 \cdot 228$ |
| 1045 | I4.601 | $25 \quad 55$ | II 174 | $45 \quad 50$ | 11.580 | 7085 | $2 \cdot 522$ |
| $10 \quad 50$ | 13.309 | 2560 | 9.668 | 4555 | 10.400 | $70 \quad 90$ | I 987 |
| 10 55 | II•667 | 2565 | $8 \cdot 329$ | 4560 | $9 \cdot 063$ | 7095 | $2 \cdot 248$ |
| 1060 | 9.957 | 2570 | $6 \cdot 736$ | 4565 | 7.910 | 70100 | 1.513 |
| 10 65 | 8.537 | 2575 | $5 \cdot 263$ | $45 \quad 70$ | $6 \cdot 465$ | 7575 | 3.23 I |
| 10 70 | 6.874 | 2580 | 4.203 | 4575 | 5.089 | 7580 | $2 \cdot 790$ |
| 10 75 | $5 \cdot 353$ | 25 <br> 8 | 3.130 | 4580 | 4.087 | 7585 | 2.217 |
| 10 80 | 4.262 | 2590 | $2 \cdot 428$ | 4585 | 3.056 | 7590 | 1-758 |
| 10 85 | $3 \cdot 167$ | 2595 | 2.688 | 4590 | $2 \cdot 375$ | 7595 | I 9993 |
| 10 90 | 2.454 | 25100 | I 6660 | 4595 | 2.633 | 75100 | 1 3992 |
| 10 95 | $2 \cdot 714$ | $30 \quad 30$ | 15.78 .3 | 45100 | 1.637 | 8080 | 2459 |
| 10100 | 1.668 | $30 \quad 35$ | 15.209 | 5050 | 10.942 | 8085 | I 993 |
| 1515 | 18.908 | $30 \quad 40$ | 14*449 | 5055 | $9 \cdot 924$ | 8090 | I 588 |
| $15 \quad 20$ | 18.423 | $30 \quad 45$ | 13.649 | 5060 | $8 \cdot 729$ | 8095 | 1.806 |
| $15 \quad 25$ | 17793 | $30 \quad 50$ | 12.551 | 5065 | $7 \cdot 691$ | 80100 | I 316 |
| I5 30 | 17.064 | 3055 | 11.089 | 5070 | 6.338 | 8585 | - 657 |
| 1535 | $16 \cdot 295$ | 3060 | 9.529 | 5075 | 5.022 | 8590 | I 335 |
| 1540 | I5.348 | 3065 | 8.224 | 5080 | 4.054 | 8595 | 1-509 |
| 1545 | 14.382 | 3070 | 6.662 | 5085 | 3.040 | 85100 | 1.170 |
| $15 \quad 50$ | $13 \cdot 131$ | 3075 | $5 \cdot 213$ | 5090 | $2 \cdot 365$ | 9090 | I 0088 |
| 1555 | II 528 | 30 <br> 80 <br> 80 | $4 \cdot 168$ | 50.95 | 2.629 | 9095 | 1-217 |
| I5 60 | 9.852 | $\begin{array}{ll}30 & 85\end{array}$ | 3.107 | 50100 | I 639 | 90100 | '979 |
| 1565 | $8 \cdot 458$ | 3090 | 2.411 | $55 \quad 55$ | $9 \cdot 103$ | 9595 | I. 383 |
| 1570 | 6.818 | 3095 | 2.670 | 5560 | 8.098 | 95100 | $\mathrm{I} \cdot 072$ |
| 15.75 15 | $5 \cdot 314$ | 30100 | I651 | $55 \quad 65$ | 7-219 | 100100 | 991 |
| 1580 | $4 \cdot 235$ | $35 \quad 35$ | 14.720 |  |  |  |  |

For explanation see pp. 29-3I

| Value of an Annuity for the Joint Continuance of Two Lives according to the GOVERNMENT EXPERIENCE TABLE, 1883 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| TWO MALES |  |  |  | two females |  |  |  |
| Ages | 21 \% | $3 \%$ | 312 \% | Ages | 2 $\frac{1}{2} \%$ | $3 \%$ | 31 \% |
| 2020 | 17.438 | 16.239 | 15.174 | 2020 | 19.906 | 18.384 | 17.047 |
| 2025 | 16.847 | 15.726 | 14.727 | 2025 | 19.348 | 17.915 | 16.651 |
| 2030 | 16.186 | 15.151 | 14.224 | 2030 | 18.675 | 17.347 | 16.169 |
| 2035 | 15.445 | 14.505 | 13.658 | 2035 | 17.867 | 16.661 | $15 \cdot 584$ |
| 2040 | 14.617 | 13.778 | 13.018 | 2040 | 16.905 | 15.835 | 14.872 |
| 2045 | 13.687 | 12.957 | 12.289 | 2045 | 15.760 | 14.837 | 14.000 |
| 2050 | 12.632 | 12.014 | 11.444 | 2050 | 14.394 | ${ }^{1} 3.625$ | 12.922 |
| 2055 | 11.409 | 10.907 | 10.441 | 2055 | 12.856 | 12.241 | 11.673 |
| 2060 | ${ }^{9} \cdot 954$ | 9.569 | $9 \cdot 209$ | 2060 | 11.184 | 10.714 | 10.276 |
| 2065 | 8.204 | 7.931 | 7.673 | 2065 | 9.335 | $8 \cdot 998$ | 8.680 |
| 2070 | $6 \cdot 584$ | 6.399 | $6 \cdot 222$ | 2070 | $7 \cdot 503$ | 7.275 | 7.058 |
| 2075 | $5 \cdot 141$ | 5.021 | 4.905 | 2075 | 5.742 | $5 \cdot 598$ | 5.460 |
| 2080 | 3.833 | $3 \cdot 759$ | $3 \cdot 688$ | 2080 | $4 \cdot 263$ | 4-177 | 4.093 |
| 2085 | 2.786 | $2 \cdot 743$ | $2 \cdot 701$ | 2085 | $3 \cdot 002$ | 2.953 | 2.906 |
| 2090 | 1 1958 | 1.933 | 1.910 | 2090 | 2.041 | 2.015 | 1.990 |
| 2095 | 1•125 | 1-115 | 1-105 | 2095 | I 266 | $1{ }^{1} 255$ | I 243 |
| 2525 | $16 \cdot 32 \mathrm{I}$ | I5.265 | 14.322 | 2525 | 18.866 | 17.505 | 16.300 |
| 2530 | 15.724 | 14.743 | 13.862 | 2530 | $18 \cdot 271$ | 16.999 | 15.868 |
| 2535 | 15.046 | 14.149 | 13.339 | 2535 | 17.537 | 16.373 | 15.332 |
| 2540 | 14.277 | 13.472 | 12.741 | 2540 | 16.641 | 15.601 | 14.664 |
| 2545 | 13.403 | 12.697 | 12.052 | 2545 | 15.552 | 14.650 | 13.83 I |
| 2550 | I2.399 | $1 \mathrm{I} \cdot 799$ | $1 \mathrm{I} \cdot 247$ | 2550 | 14.233 | 13.479 | 12.789 |
| 2555 | 11.226 | 10.737 | 10.283 | 2555 | 12.735 | 12-129 | 11.570 |
| 2560 | 9.817 | $9 \cdot 441$ | 9.089 | 2560 | 11.096 | 10.631 | $10 \cdot 198$ |
| 2565 | 8-110 | 7.842 | 7.589 | 2565 | $9 \cdot 274$ | 8.940 | 8.625 |
| 2570 | $6 \cdot 522$ | $6 \cdot 340$ | 6.165 | 2570 | $7 \cdot 462$ | $7 \cdot 236$ | 7 7 021 |
| 2575 | $5 \cdot 102$ | 4.983 | 4.869 | 2575 | $5 \cdot 717$ | $5 \cdot 574$ | 5.437 |
| 2580 | $3 \cdot 809$ | 3.737 | 3.666 | 2580 | 4.248 | $5 \cdot 163$ | 4.080 |
| 2585 | $2 \cdot 773$ | $2 \cdot 730$ | 2.688 | 2585 | 2.994 | 2.945 | 2.899 |
| 2590 | 1.950 | 1.926 | $1 \cdot 903$ | 2590 | 2.037 | 2.011 | I.986 |
| 2595 | 1-122 | 1-112 | 1-102 | 2595 | I 266 | 1.253 | I. 241 |
| 3030 | 15.198 | 14.279 | I 3.451 | 3030 | 17.763 | $16 \cdot 564$ | 15.493 |
| 3035 | 14.593 | 13.745 | 12.977 | 3035 | $17 \cdot 121$ | 16.011 | 15.016 |
| 3040 | 13.893 | 13.126 | 12.428 | 3040 | 16.310 | 15.309 | 14.406 |
| 3045 | 13.083 | 12.406 | 11786 | 3045 | 15.297 | 14.422 | 13.627 |
| 3050 | 12.139 | 11.560 | 11.026 | 3050 | 14.042 | 13.306 | 12.631 |
| 3055 | 11.022 | 10.547 | $10 \cdot 106$ | 3055 | 12.595 | 12.000 | 11.451 |
| 3060 | $9 \cdot 665$ | $9 \cdot 298$ | 8.954 | 3060 | 10.996 | 10.538 | $10 \cdot 112$ |
| 3065 | 8.005 | $7 \cdot 743$ | 7.495 | 3065 | $9 \cdot 206$ | 8.876 | $8 \cdot 565$ |
| 3070 | $6 \cdot 452$ | $6 \cdot 273$ | 6.10I | 3070 | $7 \cdot 418$ | 7 -194 | 6.981 |
| 3075 | 5.058 | 4 '940 | 4.828 | 3075 | $5 \cdot 689$ | $5 \cdot 547$ | 5.412 |
| 3080 | 3.783 | $3 \cdot 711$ | 3.641 | 3080 | 4.232 | 4. 147 | 4.065 |
| 3085 | $2 \cdot 758$ | $2 \cdot 715$ | 2.674 | 3085 | 2.985 | 2.937 | 2.890 |
| 3090 3095 | 1.942 | 1.918 | 1.895 | 3090 | 2.032 | 2.006 | 1.981 |
| 3095 | 1-118 | 1-109 | 1.099 | 3095 | I 262 | 1.251 | I 239 |

For explanation see pp. 29-3I

| Value of an Annuity for the Joint Continuance of Two Lives according to the GOVERNMENT EXPERIENCE TABLE, 1883 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| TWO MALES |  |  |  | TWO Females |  |  |  |
| Ages | $2 \frac{1}{2} \%$ | 3\% | $3 \frac{1}{2} \%$ | Ages | 21 \% | 3\% | 3 $\frac{1}{2}$ |
| 3535 | 14.067 | 13.277 | 12.559 | 3535 | 16.582 | $15 \times 543$ | 14.608 |
| 3540 | 13.449 | $12 \cdot 727$ | 12.068 | 3540 | 15.878 | 14.929 | 14.071 |
| 3545 | $12 \cdot 718$ | 12.074 | 11.483 | 3545 | 14.965 | 14.127 | 13.363 |
| 3550 | 11.845 | I 1.290 | 10.777 | 3550 | 13.797 | 13.084 | 12.43 I |
| 3555 | 10.792 | 10.334 | 9.907 | 3555 | 12.420 | II.841 | 11.304 |
| 3560 | 9.494 | $9 \cdot 138$ | $8 \cdot 804$ | 3560 | 10.876 | $10 \cdot 427$ | $10 \cdot 008$ |
| 3565 | $7 \cdot 886$ | 7.630 | $7 \cdot 389$ | 3565 | $9 \cdot 127$ | 8.801 | $8 \cdot 495$ |
| 3570 | $6 \cdot 373$ | 6.197 | 6.029 | 3570 | $7 \cdot 368$ | 7-146 | 6.936 |
| 3575 | $5 \cdot 007$ | $4 \cdot 892$ | $4 \cdot 78 \mathrm{I}$ | 3575 | 5.659 | $5 \cdot 518$ | 5.383 |
| 3580 | 3.753 | 3.682 | 3.613 | 3580 | 4.214 | 4.130 | 4.048 |
| 3585 | $2 \cdot 740$ | $2 \cdot 698$ | $2 \cdot 657$ | 3585 | $2 \cdot 975$ | 2.927 | $2 \cdot 881$ |
| 3590 | $1 \cdot 932$ | I 909 | I 888 | 3590 | 2.027 | 2.001 | 1.976 |
| 3595 | I-1I4 | $1 \cdot 105$ | I 095 | 3595 | $1 \cdot 260$ | $1 \cdot 248$ | $1 \cdot 237$ |
| 4040 | 12.923 | 12.254 | 11.642 | 4040 | 15.296 | 14.418 | 13.619 |
| 4045 | 12.285 | 11.681 | 11.126 | 4045 | 14.510 | 13.721 | 13.001 |
| 4050 | I1-50r | 10.975 | 10.487 | 4050 | 13.459 | $12 \cdot 781$ | 12.156 |
| 4055 | $10 \cdot 529$ | 10.090 | 9.680 | 4055 | $12 \cdot 183$ | 11.623 | 11.105 |
| 4060 | $9 \cdot 301$ | $8 \cdot 957$ | 8.634 | 4060 | 10.716 | 10.279 | 9.871 |
| 4065 | 7.753 | 7.504 | 7.269 | 4065 | 9.025 | $8 \cdot 706$ | 8.406 6.880 |
| 4070 | $6 \cdot 284$ | 6.112 | 5 '948 | 4070 | $7 \cdot 306$ | 7.088 | 6.880 |
| 4075 | 4.951 | 4.837 | $4 \cdot 728$ | 4075 | 5.623 | $5 \cdot 484$ | $5 \cdot 351$ |
| 4080 | 3.718 | 3.648 | 3.58 I | 4080 | $4 \times 194$ | $4 \cdot 110$ | 4.029 |
| 4085 | $2 \cdot 720$ | 2.679 | 2.638 | 4085 | $2 \cdot 964$ | 2.917 | 2.871 |
| 4090 | $1 \cdot 921$ | $\underline{1} 898$ | I.875 | 4090 | $2 \cdot 021$ | 1.995 | 1.971 |
| 4095 | I'IIO | I•100 | 1.091 | 4095 | $1 \cdot 258$ | $1 \cdot 246$ | $1 \cdot 235$ |
| 4545 | 11753 | 11.200 | $10 \cdot 689$ | 4545 | 13.869 | $13 \cdot 149$ | 12.489 |
| 4550 | 11.079 | $10 \cdot 589$ | $10 \cdot 134$ | 4550 | 12.969 | 12.338 | 11.757 |
| 4555 | 10.210 | 97795 | 9.407 | 4555 | 11.830 | 11.302 | 10.812 |
| 4560 | 9.074 | 8.744 | 8.434 | 4560 | 10.477 | 10.059 | $9 \cdot 667$ |
| 4565 | 7.600 | 7.360 | 71132 | 4565 | 8.875 | $8 \cdot 565$ | $8 \cdot 274$ |
| 4570 | $6 \cdot 184$ | 6.016 | $5 \cdot 856$ | 4570 | $7 \cdot 217$ | 7.003 | 6.801 |
| 4575 | 4.887 | $4 \cdot 776$ | 4.669 | 4575 | 5.574 | 5437 | $5 \cdot 306$ |
| 4580 | $3 \cdot 680$ | 3.611 | 3.544 | 4580 | $4 \cdot 168$ | 4.085 | 4.005 |
| 4585 | $2 \cdot 698$ | 2.657 <br> .886 | 2.617 <br> r <br> 863 | 4585 | 2.951 | 2.904 | $2 \cdot 858$ |
| 4590 | 1.909 | I 888 | r.863 | 4590 | $2 \cdot 014$ | 1.989 | 1.964 |
| 4595 | 1-105 | I 095 | I 086 | 4595 | 1.255 | 1.243 | $1 \cdot 232$ |
| 5050 | $10 \cdot 532$ | 10.088 | $9 \cdot 675$ | 5050 | 12.245 | 11.680 | 11•157 |
| 5055 | 9.795 | 98412 | 9.053 | 5055 | 11.284 | 10.801 | 10'351 |
| 5060 | $8 \cdot 781$ | $8 \cdot 47 \mathrm{I}$ | $8 \cdot 179$ | 5060 | 10.092 | 9.701 | 9.335 |
| 5065 | 7\%4I | 7•181 | 6.963 | 5065 | $8 \cdot 622$ | $8 \cdot 328$ | 8.052 |
| 5070 | 6.064 | 5.902 | 5.747 | 5070 | 7.061 | $6 \cdot 856$ | $6 \cdot 660$ |
| 5075 | 4.813 | 4'705 | 4.601 | 5075 | 5.484 | $5 \cdot 351$ | 5.223 |
| 5080 | 3.636 | $3 \cdot 568$ | 3.503 | 5080 | $4 \cdot 119$ | 4.037 | 3.959 |
| 5085 | 2.672 | 2.632 | 2.592 | 5085 | $2 \cdot 926$ | 2.880 | 2.835 |
| 5090 | I 895 | I 872 | I 849 | 5090 | 2.003 | I 978 | I 995 |


| Value of an Annuity for the Joint Continuance of Two Lives according to the GOVERNMENT EXPERIENCE TABLE, 1883 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| TWO MALES |  |  |  | TWO FEMALES |  |  |  |
| Ages | 21 \% | $3 \%$ | 312\% | Ages | $2 \frac{1}{2} \%$ | 3\% | 312 $\%$ |
| 5095 | 1.099 | $\underline{1}$ | ${ }^{1} \cdot 080$ | 5095 | 1.250 | 1.239 | 1.228 |
| 5555 | $9 \cdot 212$ | $8 \cdot 873$ | $8 \cdot 555$ | 5555 | 10.523 | $10 \cdot 100$ | $9 \cdot 704$ |
| 5560 | $8 \cdot 36 \mathrm{I}$ | 8.080 | 7.814 | 5560 | 9.534 | $9 \cdot 182$ | $8 \cdot 852$ |
| 5565 | 7.138 | 6.925 | $6 \cdot 722$ | 5565 | 8.245 | 7.974 | $7 \cdot 718$ |
| 5570 | $5 \cdot 898$ | 5.744 | $5 \cdot 597$ | 5570 | 6.824 | 6.630 | $6 \cdot 446$ |
| 5575 | $4 \cdot 717$ | 4.612 | 4.512 | 5575 | $5 \cdot 343$ | $5 \cdot 216$ | 5.094 |
| 5580 | $3 \cdot 582$ | $3 \cdot 516$ | 3.453 | 5580 | 4.038 | 3.959 | $3 \cdot 883$ |
| 5585 | 2.642 | 2.603 | $2 \cdot 564$ | 5585 | 2.882 | 2.837 | $2 \cdot 793$ |
| 5590 | I•879 | I. 856 | I. 834 | 5590 | 1.979 | 1.954 | I 930 |
| 5595 | I 093 | I.083 | 1.074 | 5595 | I 239 | $1 \cdot 228$ | I 217 |
| 6060 | $7 \cdot 705$ | $7 \cdot 465$ | $7 \cdot 238$ | 6060 | $8 \cdot 771$ | 8.471 | 8.187 |
| 6065 | 6.685 | $6 \cdot 497$ | 6.319 | 6065 | 7.710 | 7.472 | 7.245 |
| 6070 | $5 \cdot 608$ | $5 \cdot 468$ | $5 \cdot 335$ | 6070 | $6 \cdot 481$ | $6 \cdot 306$ | $6 \cdot 138$ |
| 6075 | $4 \cdot 546$ | 4.429 | 4.356 | 6075 | $5 \cdot 143$ | 5.025 | 4.910 |
| 6080 | 3.491 | 3.428 | $3 \cdot 367$ | 6080 | 3.929 | 3*854 | $3 \cdot 781$ |
| 6085 | $2 \cdot 596$ | 2.558 | 2.520 | 6085 | $2 \cdot 826$ | $2 \cdot 783$ | 2.740 |
| 6090 | 1.857 | 1.835 | 1.813 | 6090 | I 952 | 1.928 | 1.904 |
| 6095 | 1.085 | I 0076 | 1.066 | 6095 | I 2229 | 1.217 | I 206 |
| 6565 | 5.911 | $5 \cdot 759$ | $5 \cdot 614$ | 6565 | 6.910 | $6 \cdot 713$ | $6 \cdot 526$ |
| 6570 | $5 \cdot 053$ | 4.936 | 4.825 | 6570 | $5 \cdot 927$ | 5\%77 | 5.633 |
| 6575 | 4•175 | 4.091 | 4.010 | 6575 | 4.793 | $4 \cdot 688$ | $4 \cdot 587$ |
| 6580 | $3 \cdot 262$ | 3.206 | $3 \cdot 152$ | 6580 | 3.722 | $3 \cdot 654$ | $3 \cdot 587$ |
| 6585 | 2.463 | 2.428 | $2 \cdot 394$ | 6585 | 2.713 | 2.673 | 2.633 |
| 6590 | 1.786 | $1 \cdot 765$ | I 745 | 6590 | I.893 | I. 870 | I. 847 |
| 6595 | I 0058 | I ${ }^{0} 049$ | 1.045 | 6595 | 1.203 | I-192 | I.18I |
| 7070 | 4.407 | 4.314 | 4.225 | 7070 | 5.206 | $5 \cdot 086$ | 4.97I |
| 7075 | 3.719 | 3.649 | 3.582 | 7075 | 4.313 | $4 \cdot 226$ | $4 \cdot 14 \mathrm{I}$ |
| 7080 | 2.963 | 2.915 | 2.869 | 7080 | 3.427 | $3 \cdot 367$ | 3.310 |
| 7085 | $2 \cdot 276$ | $2 \cdot 245$ | 2.215 | 7085 | 2.549 | 2.512 | 2.476 |
| 7090 | 1 676 | I 657 | I. 638 | 7090 | $1 \cdot 806$ | 1.785 | I.764 |
| 7095 | I Oil | I 002 | -994 | 7095 | I.165 | 1.154 | 1.144 |
| 7575 | 3.215 | $3 \cdot 161$ | $3 \cdot 108$ | 7575 | 3.67 I | $3 \cdot 604$ | 3.539 |
| 7580 | 2.625 | 2.586 | 2.548 | 7580 75 | 2.997 | 2.949 2.256 | 2.903 |
| 7585 | 2.063 | 2.036 | 2.010 1.518 | 7585 | 2.287 1.657 | 2.256 1.639 | 2.226 1.620 |
| 7590 | I.551 | 1.534 | 1.518 | 7590 | 1.657 | I.639 | I 1620 |
| 7595 | -958 | 950 | '942 | 7595 | I.094 | I. 084 | I.075 |
| 8080 | 2.199 | $2 \cdot 169$ | $2 \cdot 141$ | 8080 | $2 \cdot 523$ | $2 \cdot 486$ | 2.451 |
| 8085 | $1 \cdot 773$ | 1.752 | I.732 | 8085 | I.985 | I 960 | I 9336 |
| 8090 | I. 367 | I.353 | 1.340 | 8090 | I. 478 | I. 462 | I 444 |
| 8095 | $\cdot 872$ | -865 | -858 | 8095 | I ${ }^{\circ} \mathrm{OO} 4$ | -995 | '987 |
| 8585 | 1.469 | - 453 | 1.438 | 8585 | 1.617 | 1-599 | I-58I |
| 8590 | I•164 | I-153 | I 143 | 8590 | I 243 | 1.23I | I 219 |
| 8595 | 772 | $\cdot 766$ | $\cdot 760$ | 8595 | -877 | -870 | . 863 |
| 9090 | 949 | -941 | '932 | 9090 | $\cdot 988$ | -979 | 970 |
| 9095 | .655 | -651 | . 646 | 9095 | $\cdot 725$ | $\cdot 719$ | ${ }^{7} 714$ |
| 9595 | 485 | $\cdot 482$ | -478 | 9595 | -557 | -554 | $\cdot 550$ |

For explanation see pp. 29-3I

## MORTALITY TABLES--TWO LIVES

Value of an Annuity for the Joint Continuance of Two Lives according to the GOVERNMENT EXPERIENCE TABLE, 1883. MALE AND FEMALE

| Female the elder |  |  |  | MaLe the elder |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $2 \frac{1}{2} \%$ | $3 \%$ | 3 $\frac{1}{2} \%$ | Ages | 2 $\frac{1}{2} \%$ | $3 \%$ | 3 $\frac{1}{2}$ |
| $\begin{aligned} & \text { M. F. } \\ & 20 \quad 20 \end{aligned}$ | $18 \cdot 580$ | 17.235 | $16 \cdot 047$ | $\begin{aligned} & \text { F. } \mathrm{Xr} . \\ & 2020 \end{aligned}$ | 18.580 | 17.235 | 16.047 |
| 2025 | 18.124 | $16 \cdot 848$ | 15.717 | 2025 | 17.887 | 16.638 | 15.530 |
| 2030 | 17.568 | $16 \cdot 375$ | 15.313 | 2030 | 17 III | 15.971 | 14.952 |
| 2035 | 16.890 | 15.797 | 14.817 | 2035 | $16 \cdot 258$ | 15.229 | 14.304 |
| 2040 | 16.067 | 15.087 | 14.202 | 2040 | 15.311 | 14.402 | 13.579 |
| 2045 | 15.066 | 14.211 | 13.434 | 2045 | 14.263 | 13.479 | 12.763 |
| 2050 | 13.842 | I3. 122 | 12.463 | 2050 | 13.092 | 12.435 | 11.831 |
| 2055 | 12.436 | II.854 | II 316 | 2055 | 11.761 | 11.233 | 10.743 |
| 2060 | 10.880 | 10.431 | 10.012 | 2060 | $10 \cdot 207$ | 9.806 | 9.431 |
| 2065 | 9.129 | 8.803 | $8 \cdot 497$ | 2065 | $8 \cdot 373$ | 8.091 | 7.825 |
| 2070 | $7 \cdot 370$ | 7.149 | 6.938 | 2070 | $6 \cdot 694$ | 6.503 | $6 \cdot 321$ |
| 2075 | 5.662 | 5.52I | $5 \cdot 387$ | 2075 | $5 \cdot 209$ | $5 \cdot 086$ | 4.968 |
| 2080 | 4.218 | 4.133 | 4.051 | 2080 | 3.872 | 3.797 | 3.725 |
| 2085 | 2.977 | 2.929 | $2 \cdot 883$ | 2085 | 2.809 | $2 \cdot 765$ | $2 \cdot 722$ |
| 2090 | $2 \cdot 028$ | $2 \cdot 002$ | I 977 | 2090 | I 9669 | I 9945 | I 92 I |
| 2095 | I 261 | 1.249 | 1.238 | 2095 | I•129 | I.119 | I'IIO |
| 2525 | 17.497 | $16 \cdot 304$ | 15.342 | 2525 | 17.497 | $16 \cdot 304$ | 15.242 |
| 2530 | 17.014 | 15.890 | 14.886 | 2530 | 16.790 | 15.689 | 14.705 |
| 2535 | 16.411 | 15.372 | 14.439 | 2535 | 15.993 | 14.995 | 14.098 |
| 2540 | 15.659 | 14.721 | 13.873 | 2540 | 15.097 | 14.211 | 13.408 |
| 2545 | 14.726 | 13.903 | 13.154 | 2545 | 14.093 | 13.324 | 12.623 |
| 2550 | 13.566 | 12.870 | 12.232 | 2550 | 12.959 | 12.313 | 117719 |
| 2555 | 12.221 | 11.655 | 11.131 | 2555 | II 6659 | 11.139 | 10.655 |
| 2560 | 10.719 | 10.28 I | 9.871 | 2560 | 10.133 | 9.736 | $9 \cdot 365$ |
| 2565 | 9.016 | 8.697 | $8 \cdot 396$ | 2565 | $8 \cdot 322$ | 8.043 | $7 \cdot 779$ |
| 2570 | $7 \cdot 296$ | $7 \cdot 078$ | 6.87I | 2570 | $6 \cdot 660$ | $6 \cdot 47 \mathrm{I}$ | $6 \cdot 291$ |
| 2575 | $5 \cdot 616$ | 5477 | $5 \cdot 344$ | 2575 | 5.187 | 5.065 | $4 \cdot 948$ |
| 2580 | $4 \cdot 190$ | 4-106 | 4.025 | 2580 | 3.859 | 3.785 | 3.713 |
| 2585 | 2.962 | $2 \cdot 915$ | $2 \cdot 869$ | 2585 | 2.801 | $2 \cdot 758$ | ${ }^{2} \cdot 715$ |
| 2590 | 2.020 | $1 \cdot 995$ | 1970 | 2590 | $1 \cdot 965$ | 1.941 | I 918 |
| 2595 | 1.257 | 1. 246 | 1.234 | 2595 | I•128 | I•118 | I•108 |
| 3030 | $16 \cdot 383$ | 15.337 | 14.399 | 3030 | $16 \cdot 383$ | 15.337 | 14.399 |
| 3035 | 15.864 | 14.888 | 14.008 | 3035 | 15.660 | 14.704 | 13.842 |
| 3040 | $15 \cdot 197$ | 14.307 | 13.501 | 3040 | 14.833 | 13.976 | 13.199 |
| 3045 | 14.344 | 13.557 | 12.840 | 3045 | 13.887 | 13•139 | 12.456 |
| 3050 | 13.259 | 12.589 | I I 979 | 3050 | 12.802 | I2•169 | II.588 |
| 3055 | II 1988 | II 433 | 10.925 | 3055 | I1.542 | II ${ }^{\circ} 3^{\circ}$ | 10.555 |
| 3060 | $10 \cdot 539$ | 10•112 | 9.714 | 3060 | 10.049 | $9 \cdot 658$ | 9.292 |
| 3065 | 8.889 | $8 \cdot 577$ | $8 \cdot 283$ | 3065 | $8 \cdot 266$ | 7.990 | 7729 |
| 3070 | $7 \cdot 212$ | 6.998 | $6 \cdot 794$ | 3070 | $6 \cdot 623$ | 6.435 | $6 \cdot 257$ |
| 3075 | $5 \cdot 564$ | $5 \cdot 427$ | $5 \cdot 296$ | 3075 | $5 \cdot 164$ | 5.043 | 4.926 |
| 3080 | 4.160 | 4.077 | 3.996 | 3080 | 3.845 | 3.771 | $3 \cdot 700$ |
| 3085 | 2.945 | $2 \cdot 898$ | 2.853 | 3085 | $2 \cdot 793$ | $2 \cdot 750$ | $2 \cdot 708$ |
| 3090 | 2.011 | 1.986 | $\mathrm{I} \cdot 96 \mathrm{I}$ | 3090 | I.961 | I 9337 | 1.913 |
| 3095 | $1 \cdot 253$ | I 242 | I 23 I | 3095 | 1-126 | I•II6 | 1•106 |

For explanation see pp. 29-31

Valne of an Annaity for the Joint Continuance of Two Lives according to the GOVERNMENT EXPERIENCE TABLE, 1883. MALE AND FEMALE

| FEMALE THE ELDER |  |  |  | MALE THE ELDER |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $2 \frac{1}{2} \%$ | $3 \%$ | $3 \frac{1}{2} \%$ | Ages | $2 \frac{1}{2} \%$ | $3 \%$ | 3 $\frac{1}{2} \%$ |
| $\mathrm{M} . \mathrm{F}$ | 15.229 | 14.327 | 13.51 I |  | 15.229 |  |  |
| 3535 | 14.659 | 13.827 | 13.071 | 3535 | 14.488 | 13.671 | 12.928 |
| 3545 | 13.904 | 13.159 | 12.479 | 3545 | 13.621 | 12.901 | 12.242 |
| 3550 | 12.909 | 12.269 | 11.680 | 3550 | $12 \cdot 603$ | 11989 | 11.423 |
| 3555 | 11-711 | II•183 | 10.694 | 3555 | 11.399 | 10.898 | 10.433 |
| 3560 | 10.338 | $9 \cdot 924$ | $9 \cdot 537$ | 3560 | 9.950 | $9 \cdot 566$ | $9 \cdot 206$ |
| 3565 | $8 \cdot 747$ | 8.443 | $8 \cdot 156$ | 3565 | $8 \cdot 201$ | 7.929 | $7 \cdot 671$ |
| 3570 | $7 \cdot 117$ | $6 \cdot 907$ | $6 \cdot 708$ | 3570 | $6 \cdot 582$ | $6 \cdot 396$ | 6.219 |
| 3575 | $5 \cdot 505$ | $5 \cdot 370$ | $5 \cdot 241$ | 3575 | $5 \cdot 138$ | 5.018 | 4.902 |
| 3580 | $4 \cdot 125$ | 4.043 | 3.964 | 3580 | 3.830 | 3.757 | $3 \cdot 686$ |
| 3585 | 2.926 | 2.880 | 2.835 | 3585 | 2.784 | $2 \cdot 741$ | 2.699 |
| 3590 | $2 \cdot 001$ | 1.976 | I 955 | 3590 | 1 9956 | 1.932 | I 909 |
| 3595 | I 249 | $1 \cdot 237$ | $1 \cdot 226$ | 3595 | I-124 | 1-114 | 1•IO4 |
| 4040 | 14.022 | 13.258 | 12.562 | 4040 | 14.022 | 13.258 | $12 \cdot 562$ |
| 4045 | 13.379 | 12.687 | 12.052 | 4045 | 13.256 | $12 \cdot 574$ | 119949 |
| 4050 | 12.497 | II•893 | 11.337 | 4050 | 12.331 | 11.742 | II•199 |
| 4055 | 1 1.399 | 10.895 | $10 \cdot 427$ | 4055 | 11.205 | 10.721 | $10 \cdot 270$ |
| 4060 | $10 \cdot 109$ | 9710 | $9 \cdot 337$ | 4060 | 9.820 | $9 \cdot 445$ | 9.093 |
| 4065 | $8 \cdot 587$ | $8 \cdot 292$ | 8 8013 | 4065 | $8 \cdot 119$ | 7.852 | $7 \cdot 598$ |
| 4070 | 7 -10 | $6 \cdot 806$ | $6 \cdot 611$ | 4070 | $6 \cdot 53 \mathrm{I}$ | $6 \cdot 348$ | 6.174 |
| 4075 | 5.438 | $5 \cdot 306$ | 5.180 | 4075 | 5.108 | 4.989 | 4.875 |
| 4080 | 4.085 | 4004 | 3.926 | 4080 | 3.813 | 3.740 | 3.669 |
| 4085 | 2.904 | 2.858 | 2.814 | 4085 | 2.775 | 2.732 | 2.690 |
| 4090 | I 9.989 | I 965 | I 940 | 4090 | 1.951 | 1.927 | I 903 |
| 4095 | 17244 | $1 \cdot 232$ | I 22 I | 4095 | $1 \cdot 122$ | $1 \cdot 112$ | 1-102 |
| 4545 | 12.736 | $12 \cdot 108$ | 11.529 | 4545 | 12.736 | $12 \cdot 108$ | II•529 |
| 4550 | 119988 | 11.430 | 10.914 | 4550 | 11.932 | II.381 | 10.87 I |
| 4555 | 11.017 | 10.544 | $10 \cdot 103$ | 4555 | 10.918 | 10.458 | 10.028 |
| 4560 | $9 \cdot 837$ | $9 \cdot 457$ | $9 \cdot 101$ | 4560 | $9 \cdot 627$ | 9.265 | 8.926 |
| 4565 | 8.402 | 8-117 | 7.849 | 4565 | 7999 | 7739 | $7 \times 493$ |
| 4570 | 6.889 | $6 \cdot 691$ | $6 \cdot 502$ | 4570 | 6.460 | $6 \cdot 280$ | $6 \cdot 109$ |
| 4575 | $5 \cdot 363$ | $5 \cdot 234$ | $5 \cdot 110$ | 4575 | $5 \cdot 067$ | 4.950 | 4.837 |
| 4580 | 4.040 | 3.961 | 3.884 | 4580 | $3 \cdot 791$ | 3.718 | 3.649 |
| 4585 | $2 \cdot 879$ | 2.834 | $2 \cdot 790$ | 4585 | 2.763 | $2 \cdot 720$ | 2.679 |
| 4590 | I 976 | $1 \cdot 952$ | $1 \cdot 927$ | 4590 | I 945 | I.92I | 1.898 |
| 4595 | 1.238 | 1226 | I 215 | 4595 | 1-119 | I•10 | $1 \cdot 100$ |
| 5050 | 11.331 | 10.833 | 10.370 | 5050 | 11.331 | 10.833 | 10.370 |
| 5055 | 10.516 | 10.084 | $9 \cdot 68 \mathrm{I}$ | 5055 | 10.465 | 10.040 | 9.643 |
| 5060 | $9 \cdot 482$ | $9 \cdot 127$ | $8 \cdot 795$ | 5060 | 9.309 | 8.970 | $8 \cdot 651$ |
| 5065 | $8 \cdot 169$ | 7.899 | $7 \cdot 643$ | 5065 | 7795 | $7 \cdot 546$ | 7311 |
| 5070 | 6.744 | $6 \cdot 553$ | $6 \cdot 370$ | 5070 | 6.332 | 6.159 | 5.994 |
| 5075 | 5.276 | $5 \cdot 151$ | 5.030 | 5075 | 4.992 | 4.878 | $4 \cdot 768$ |
| 5080 | 3.990 | 3.9 I2 | 3.837 | 5080 | 3749 | 3.678 | 3.609 |
| 5085 | 2.851 | 2.806 | $2 \cdot 763$ | 5085 | $2 \cdot 740$ | 2.698 | 2.658 |
| 5090 | 1961 | $1 \cdot 937$ | 1.913 | 5090 | I 933 | 1910 | 1.887 |

For explanation see pp. 29-31

Valne of an Annuity for the Joint Continuance of Two Lives according to the GOVERNMENT EXPERIENCE TABLE, 1883. MALE AND FEMALE

| FEMALE THE ELDER |  |  |  | MALE THE ELDER |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $2 \frac{1}{2} \%$ | $3 \%$ | $3 \frac{1}{2} \%$ | Ages | $2 \frac{1}{2} \%$ | $3 \%$ | 3 $\frac{1}{2}$ \% |
| $\begin{gathered} \text { M. F. } \\ 5095 \end{gathered}$ | I 231 | I 220 | $1 \cdot 208$ | $\begin{aligned} & \text { F. M. M. } \\ & 50 \end{aligned}$ | I-116 | 1•106 | $1 \cdot 097$ |
| 5555 | 9.825 | 9.447 | 9.093 | 5555 | 9.825 | 9.447 | $9 \cdot 093$ |
| 5560 | 8.974 | $8 \cdot 656$ | $8 \cdot 356$ | 5560 | $8 \cdot 845$ | $8 \cdot 536$ | $8 \cdot 245$ |
| 5565 | 7.830 | $7 \cdot 582$ | 7346 | 5565 | $7 \cdot 487$ | $7 \cdot 256$ | 7.037 |
| 5570 | $6 \cdot 539$ | $6 \cdot 358$ | 6.186 | 5570 | $6 \cdot 138$ | 5.974 | $5 \cdot 817$ |
| 5575 | 5•16I | 5.040 | $4 \cdot 925$ | 5575 | 4.873 | 4.763 | $4 \cdot 658$ |
| 5580 | 3.927 | 3.851 | 37778 | 5580 | 3.679 | 3.610 | $3 \cdot 544$ |
| 5585 | 2.818 | $2 \cdot 774$ | 2.732 | 5585 | 2.700 | 2.659 | 2.619 |
| 5590 | 1.944 | I 920 | 1.896 | 5590 | 1.912 | I.888 | I.866 |
| 5595 | I 223 | I 212 | $1 \cdot 201$ | 5595 | 1.106 | I•097 | $1{ }^{1} 087$ |
| 6060 | 8.201 | 7934 | 7.681 | 6060 | 8.201 | 7.934 | $7 \cdot 68 \mathrm{I}$ |
| 6065 | $7 \cdot 279$ | 7.063 | 6.857 | 6065 | 7.049 | $6 \cdot 843$ | $6 \cdot 647$ |
| 6070 | 6.182 | 6.020 | 5.866 | 6070 | 5.858 | $5 \cdot 707$ | $5 \cdot 564$ |
| 6075 | 4.955 | $4 \cdot 844$ | 4.737 | 6075 | 4.706 3.586 | $4 \cdot 603$ | 4.504 3.457 |
| 6080 | 3.818 | $3 \cdot 747$ | 3.678 | 6080 | $3 \cdot 586$ | $3 \cdot 520$ | 3.457 |
| 6085 | $2 \cdot 766$ | $2 \cdot 724$ | $2 \cdot 683$ | 6085 | 2.651 | 2.611 | 2.572 |
| 6090 | I•920 | 1.897 | 1.874 | 6090 | 1.887 | $1 \cdot 864$ | I. 842 |
| 6095 | I 214 | 1.203 | I•192 | 6095 | $1 \cdot 098$ | $\underline{1}$ - 088 | $1{ }^{\circ} 079$ |
| 6565 | $6 \cdot 374$ | $6 \cdot 202$ | 6.038 | 6565 | $6 \cdot 374$ | $6 \cdot 202$ | 6.038 |
| 6570 | $5 \cdot 528$ | $5 \cdot 394$ | $5 \cdot 266$ | 6570 | 5.394 | $5 \cdot 264$ | $5 \cdot 140$ |
| 6575 | $4 \cdot 524$ | 4.428 | 4.336 | 6575 | 4.408 | 4.316 | $4 \cdot 228$ |
| 6580 | 3.554 | 3.491 | 3.429 | 6580 | 3.408 | 3.348 | 3.289 |
| 6585 | 2.619 | $2 \cdot 58 \mathrm{I}$ | 2.543 | 6585 | 2.549 | 2.511 | 2.475 |
| 6590 | I. 844 | I.822 | I. 800 | 6590 | I. 832 | 1.810 | 1.789 |
| 6595 | I•182 | I•171 | I•16I | 6595 | I 076 | 1.066 | I 057 |
| 7070 | 4.78 I | $4 \cdot 675$ | $4 \cdot 574$ | 7070 | 4.78 I | 4.675 | 4.574 |
| 7075 | 4.001 | 3.923 | $3 \cdot 848$ | 7075 | 3.995 | 3.918 | 3.843 |
| 7080 | 3.213 | $3 \cdot 159$ | $3 \cdot 107$ | 7080 | $3 \cdot 152$ | $3 \cdot 100$ | 3.049 |
| 7085 | 2.415 | $2 \cdot 381$ | $2 \cdot 348$ | 7085 | 2.399 | $2 \cdot 366$ | $2 \cdot 333$ |
| 7090 | 1.727 | 1.707 | $1 \cdot 688$ | 7090 | 1751 | 1•731 | 1.711 |
| 7095 | I.125 | 1•II5 | I•105 | 7095 | 1.044 | 1.035 | 1.027 |
| 7575 | 3.430 | 3.370 | 3.311 | 7575 | 3.430 | 3.370 | $3 \cdot 311$ |
| 7580 | 2.829 | $2 \cdot 785$ | 2.742 | 7580 | 2.774 | 2.731 | 2.690 |
| 7585 | 2.18I | $2 \cdot 152$ | 2.124 | 7585 | $2 \cdot 160$ | $2 \cdot 132$ | $2 \cdot 104$ |
| 7590 | I 595 | 1•577 | I.560 | 7590 | 1.610 | 1 592 | 1.575 |
| 7595 | 1.063 | I 054 | I. 045 |  | - 984 | . 976 | -968 |
| 8080 | 2.352 | $2 \cdot 320$ | 2.288 | 8080 | $2 \cdot 352$ | $2 \cdot 320$ | $2 \cdot 288$ |
| 8085 | I. 868 | + 848 | I.823 | 8085 | I 882 | - 859 | $\underline{1} 837$ |
| 8090 | I 402 | 1-388 | 1.373 | 8090 | I.440 | 1.425 | 1.410 |
| 8095 | $\cdot 962$ | '954 | '946 | 8095 | $\cdot 908$ | $\cdot 900$ | -893 |
| 8585 | I 540 | 1-524 | 1.507 | 8585 | I 540 | 1-524 | I 507 |
| 8590 | I-191 | 1-179 | I• 568 | 8590 | I. 215 | I 203 | I. 192 |
| 8595 | -846 | -839 | -832 | 8595 | $\cdot 799$ | $\cdot 793$ | $\cdot 787$ |
| 9090 | -968 | -960 | '951 | 9090 | -968 | $\cdot 960$ | -951 |
| 9095 | 712 | $\cdot 707$ | 702 | 9095 | $\cdot 666$ | -661 | $\cdot 657$ |
| 9595 | $\cdot 519$ | '515 | -512 | 9595 | -519 | $\cdot 515$ | '512 |

Vaine of an Annuity for the Joint Continuance of Two Lives according to the INSTITUTE OF ACTUARIES HEALTHY MALES TABLE

| Ages | $3 \%$ | $3 \frac{1}{2} \%$ | $4 \%$ | Ages | $3 \%$ | $3 \frac{1}{2} \%$ | $4 \%$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1010 | $21 \times 0079$ | 19.3289 | 17.8656 | 2060 | $9 \cdot 6503$ | $9 \cdot 2849$ | 8.9422 |
| 1015 | $20 \cdot 4046$ | 18.8209 | 17.4348 | 2065 | $8 \cdot 0149$ | $7 \cdot 7544$ | $7 \cdot 5079$ |
| 1020 | 19.6575 | $18 \cdot 1842$ | 16.8879 | 2070 | $6 \cdot 3944$ | 6.2197 | 6.0531 |
| 1025 | 18.9794 | 17.6168 | 16.4105 | 2075 | 4.8992 | 47883 | 4.6817 |
| 1030 | 18-1217 | 16.8869 | 15\%7863 | 2080 | $3 \cdot 6458$ | $3 \cdot 5784$ | 3.5132 |
| 1035 | 17.1325 | 16.0360 | 15.0513 | 2085 | $2 \cdot 6828$ | 2.6429 | 2.6042 |
| 1040 | 15.9913 | 15.0410 | 14.1806 | 2090 | 1.7153 | 1.6974 | I 6799 |
| 1045 | 14.6570 | 13.8586 | 13.1296 | 2095 | -4122 | -4099 | -4076 |
| 10.50 | 13.1800 | 12.5312 | II 9335 | 2525 | 17.5703 | 16.3949 | 15.3455 |
| 1055 | I I 5676 | 1110611 | 10.5905 | 2530 | 16.9261 | 15.8382 | I4.862 |
| 1060 | 9.8667 | 9.4891 | $9^{\prime} 135^{\circ}$ | 2535 | $16 \cdot 1390$ | 15.1537 | 14.2645 |
| 1065 | $8 \cdot 1707$ | $7 \cdot 9025$ | 7.6489 | 2540 | 15.1822 | 14.3135 | 13.5241 |
| 1070 | 6.4997 | $6 \cdot 3206$ | $6 \cdot 1498$ | 2545 | 14.0130 | 13.2723 | 12.5945 |
| 1075 | 4.9661 | $4 \cdot 8528$ | $4 \cdot 7440$ | 2550 | 12.6787 | 12.0695 | I 1 5075 |
| 1080 | $3 \cdot 6859$ | $3 \cdot 6173$ | $3 \cdot 5509$ | 2555 | 11-1886 | 10.7083 | 10.2615 |
| I0 85 | $2 \cdot 7056$ | $2 \cdot 6652$ | 2.6259 | 2560 | $9 \cdot 5902$ | 9.2291 | $8 \cdot 8904$ |
| 1090 | 1.7242 | 1'7062 | 1.6885 | 2565 | 7.9774 | 77191 | $7 \cdot 4748$ |
| 1095 | -4129 | -4107 | $\cdot 4084$ | 2570 | $6 \cdot 3726$ | 6•1990 | $6 \cdot 0334$ |
| 1515 | $19 \cdot 8661$ | $18 \cdot 3635$ | 17.0435 | 2575 | $4 \cdot 8875$ | 47771 | $4 \cdot 67$ IO |
| 1520 | 19.1866 | 177798 | 16.5386 | 2580 | $3 \cdot 6400$ | $3 \cdot 5728$ | $3 \cdot 5078$ |
| 1525 | $18 \cdot 5708$ | 17.2617 | 16.1006 | 2585 | $2 \cdot 6801$ | 2.6404 | $2 \cdot 6017$ |
| 1530 | 17.7738 | 16.58II | 15.5163 | 2590 | 17145 | 1.6967 | I.6792 |
| 1535 | 16.8405 | 15.7762 | 14.8192 | 2595 | -4121 | -4098 | -4075 |
| 1540 | 15.7501 | 14.8240 | 13.9848 | 3030 | $16 \cdot 3734$ | 15.3561 | 14.4399 |
| I5 45 | 14.4623 | 13.6816 | 12.9684 | 3035 | 15.6810 | 14.7501 | 13.9077 |
| 1550 | 13.0271 | 12.3908 | 11.8045 | 3040 | 14.8162 | 13.9872 | 13.2324 |
| 1555 | I I 4524 | 10.9544 | 10.4915 | 3045 | 13.7313 | I $3 \cdot 0182$ | $12 \cdot 3645$ |
| I5 60 | $9 \cdot 7844$ | 9.4122 | 9.0633 | 3050 | 12.4690 | 11.8779 | II 3320 |
| 1565 | 8-1160 | 7.8512 | $7 \cdot 6007$ | 3055 | 11.0378 | 10.5688 | 10.1322 |
| 1570 | $6 \cdot 4676$ | $6 \cdot 2903$ | $6 \cdot 1213$ | 3060 | $9 \cdot 4855$ | 9'1311 | 8'7984 |
|  | 4.9502 | $4 \cdot 8378$ | 4.7298 | 3065 | $7 \cdot 9071$ | $7 \cdot 6525$ | 7.4117 |
| 1580 | $3 \cdot 6801$ | 3.6118 | $3 \cdot 5459$ | 3070 | $6 \cdot 3275$ | $6 \cdot 1559$ | $5 \cdot 9922$ |
| 1585 | $2 \cdot 7055$ | $2 \cdot 6652$ | $2 \cdot 6260$ | 3075 | $4 \cdot 8598$ | 4.7503 | $4 \cdot 6452$ |
| 1590 | 17272 | I 7092 | I 6915 | 3080 | $3 \cdot 6234$ | $3 \cdot 5567$ | 3.4922 |
| 1595 | -4138 | -4115 | $\cdot 4093$ | 3085 | $2 \cdot 6705$ | 2.6310 | 2.5925 |
| 2020 | $18 \cdot 5817$ | 17.2554 | 16.0809 | 3090 | 1.7102 | 1.6925 | 1.6750 |
| 2025 | 18.0385 | 16•7952 | 15.6891 | 3095 | .4115 | -4092 | -4070 |
| 2030 | 17.3149 | $16 \cdot 1739$ | 15.1533 | 3535 | I5.0950 | 14.2329 | 13.4496 |
| 2035 | $16 \cdot 4510$ | $15 \cdot 4263$ | 14.5035 | 3540 | 14.3405 | 13.5632 | 12.8535 |
| 2040 | 15.4240 | 14.5274 | 13.7141 | 3545 | 13.3625 | 12.6859 | 12.0644 |
| 2045 | 14.1936 | 13.4344 | 12.7402 | 3550 | 12.1954 | I 1.6285 | 1 I'I04I |
| 2050 | $12 \cdot 8092$ | $12 \cdot 1880$ | I 1.6153 | 3555 | 10.8436 | $10 \cdot 3896$ | 9'9665 |
| 2055 | I I 2791 | 10'7916 | 10.3381 | 3560 | 9.3536 | 9.0080 | $8 \cdot 6833$ |

For explanation see pp. 29-3I

| Value of an Annuity for the Joint Continuance of Two Lives according to the INSTITUTE OF ACTUARIES HEALTHY MALES TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | 31 $\%$ | $4 \%$ | Ages | $3 \%$ | $3 \frac{1}{2} \%$ | $4 \%$ |
| 3565 | 7.8211 | 7.5714 | 73350 | 5570 | 5.6627 | $5 \cdot 5216$ | 5.3865 |
| 3570 | $6 \cdot 2742$ | $6 \cdot 1050$ | 5.9437 | 5575 | $4 \cdot 4616$ | $4 \cdot 3673$ | 4.2764 |
| 3575 | $4 \cdot 8279$ | 4.7197 | $4 \cdot 6157$ | 5580 | 3-3947 | 3.3349 | 3.2770 |
| 3580 | $3 \cdot 6051$ | 3.5389 | 3.4749 | 5585 | 2.5429 | 2.5063 | 2.4706 |
| 3585 | 2.6600 | 2.6207 | $2 \cdot 5825$ | 5590 | I. 6568 | 1.6398 | 1.6231 |
| 3590 | $1-7058$ | I-6881 | $1 \cdot 6707$ | 5595 | -4051 | 4029 | 4007 |
| 3595 | 4410 | 4087 | -4065 | 6060 | 7-1988 | $6 \cdot 9834$ | $6 \cdot 7787$ |
| 4040 | 13.7103 | 12.9996 | 12.3479 | 6065 | $6 \cdot 3213$ | $6 \cdot 1504$ | 5.9872 |
| 4045 | 12.8622 | 12.2343 | 11.6557 | 6070 | $5 \cdot 3013$ | 5•1755 | 5.0548 |
| 4050 | II-8177 | II 2841 | $10 \cdot 7894$ | 6075 | 4.2332 | 4.1469 | 4.0638 |
| 4055 | $10 \cdot 5734$ | $10 \cdot 1406$ | 9.7366 | 6080 | $3 \cdot 2576$ | 3.2018 | 3.1476 |
| 4060 | 9•1705 | $8 \cdot 8373$ | $8 \cdot 5241$ | 6085 | 2.4634 | $2 \cdot 4285$ | $2 \cdot 3945$ |
| 4065 | $7 \cdot 7034$ | 7.4605 | $7 \cdot 2304$ | 6090 | I 6224 | I 6059 | - 5897 |
| 4070 | $6 \cdot 2029$ | $6 \cdot 0372$ | $5 \cdot 8790$ | 6095 | 4010 | $\cdot 3987$ | - 3965 |
| 4075 | $4 \cdot 7868$ | 4.6802 | 4.5777 | 6565 | $5 \cdot 6519$ | 5.5115 | $5 \cdot 3771$ |
| 4080 | $3 \cdot 5821$ | $3 \cdot 5166$ | 3.4533 | 6570 | 4.8312 | $4 \cdot 7242$ | $4 \cdot 6213$ |
| 4085 | 2.6476 | $2 \cdot 6085$ | 2.5705 | 6575 | $3 \cdot 9266$ | $3 \cdot 8507$ | 3.7775 |
| 4090 | $1 \cdot 7005$ | I 68828 | 1.6655 | 6580 | 3.0687 | $3 \cdot 0181$ | 2.9690 |
| 4095 | 4103 | 4080 | 4058 | 6585 | $2 \cdot 3514$ | 2.3190 | $2 \cdot 2873$ |
| 4545 | 12.1619 | II 5979 | 11.0760 | 6590 | I-5719 | $1 \cdot 556 \mathrm{I}$ | I. 5406 |
| 4550 | 11. 2685 | $10 \cdot 7807$ | $10 \cdot 3270$ | 6595 | -3944 | -3922 | 3901 |
| 4555 | ${ }^{10} 1.1663$ | $9 \cdot 7638$ | $9 \cdot 3873$ | 7070 | 4.2226 | 4.1378 | 4.0560 |
| 4560 | $8 \cdot 8855$ | $8 \cdot 5709$ | $8 \cdot 2747$ | 7075 | $3 \cdot 5095$ | 3.4470 | $3 \cdot 3865$ |
| 4565 | $7 \cdot 5145$ | $7 \cdot 2821$ | 7.0618 | 7080 | 2.8014 | 2.7580 | 2.7159 |
| 4570 | 6.0851 | 5.9249 | 5.7719 | 7085 | 2.1880 | $2 \cdot 1591$ | 2.1309 |
| 4575 | 4.7171 | 4.6132 | 4.5132 | 7090 | 1 4989 | I. 4841 | 1.4696 |
| 4580 | 3.5425 | 3.4782 | 3.4160 | 7095 | $\cdot 3854$ | $\cdot 3833$ | $\cdot 3812$ |
| 4585 | $2 \cdot 6257$ | $2 \cdot 5872$ | $2 \cdot 5497$ | 7575 | $2 \cdot 9876$ | $2 \cdot 9395$ | 2.8928 |
| 4590 | I 6917 | I. 6742 | I 6570 | 7580 | 2.4424 | $2 \cdot 4077$ | 2.3739 |
| 4595 | 4094 | 4071 | 4049 | 7585 | I 9598 | I 9265 | 1.9028 |
| 5050 | $10 \cdot 5428$ | 10.1123 | 9.7103 | 7590 | I 3791 | I 3659 | 1 $353{ }^{\circ}$ |
| 5055 | 9.6109 | 9.2481 | 8.9078 | 7595 | $\cdot 3684$ | - 3663 | $\cdot 3643$ |
| 5060 | $8 \cdot 4864$ | $8 \cdot 1970$ | 7.9240 | 8080 | 2.0488 | $2 \cdot 0225$ | 1.9969 |
| 5065 | $7 \cdot 2447$ | $7 \cdot 0270$ | $6 \cdot 8204$ | 8085 | 1.6761 | I. 6569 | I 6388 I |
| 5070 | $5 \cdot 9148$ | $5 \cdot 7624$ | $5 \cdot 6167$ | 8090 | I-2319 | I. 2206 | I 2096 |
| 5075 | $4 \cdot 6152$ | 4.5152 | 4.4189 | 8095 | $\cdot 3467$ | $\cdot 3448$ | 3429 |
| 5080 | 3.4839 | 3.4214 | 3.3609 | 8585 | I.4025 | I. 3877 | 1.3732 |
| 5085 | 2.5929 | 2.5551 | $2 \cdot 5183$ | 8590 | I 0676 | I 0583 | 1.0491 |
| 5090 | ${ }^{1} \cdot 6776$ | ${ }^{1} 6603$ | 1.6433 | 8595 | $\cdot 3172$ | -3155 | -3138 |
| 5095 | 4076 | 4053 | 4031 | 9090 | 8693 | -8625 | -8557 |
| 5555 | $8 \cdot 8676$ | 8.5546 | $8 \cdot 2598$ | 9095 | . 2850 | -2835 | -2820 |
| 5560 5565 | 7.9310 6.8562 | 7.6749 6.659 | 7.4327 6.4713 | 9595 | -132I | -13I4 | -1308 |
| 5565 | $6 \cdot 8562$ | $6 \cdot 6590$ | $6 \cdot 4713$ |  |  |  |  |


| Ages | $3 \%$ | Ages | 3\% | Ages | $3 \%$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1515 | '5273 | 3055 | -6991 | 5075 | -8406 |
| 1520 | -5439 | 3060 | $\cdot 7269$ | 5080 | -8730 |
| 1525 | -5564 | 3065 | $\cdot 7587$ | 5085 | '9013 |
| 1530 | . 5708 | 3070 | $\cdot 7949$ | 5090 | -9218 |
| 1535 | -5878 | 3075 | . 8321 | 5095 | '9640 |
| 1540 | . 6080 | 3080 | -8681 | 5555 | 7471 |
| I5 45 | . 6305 | 3085 | -8986 | 5560 | 7644 |
| 1550 | . 6563 | 3090 | .9205 | 5565 | .7864 |
| 1555 | -6840 | 3095 | -9639 | 5570 | -8138 |
| 1560 | $\cdot 7149$ | 3535 | -6294 | 5575 | -8442 |
| 1565 | 7496 | 3540 | 6443 | 5580 | -8750 |
| 1570 | 7884 | 3545 | . 6615 | 5585 | 9025 |
| 1575 | -8278 | 3550 | -6822 | 5590 | -9224 |
| 1580 <br> 8 | . 8654 | 3555 | $\cdot 7049$ | 5595 | 9641 |
| I5 85 | 8970 | 3560 | -7312 | 6060 | $\cdot 7785$ |
| 2020 | -5592 | 3565 | 7618 | 6065 | '7970 |
| 2025 | . 5706 | 3570 | $\cdot 7970$ | 6070 | -8212 |
| 2030 | -5839 | 3575 | . 8334 | 6075 | -8489 |
| 2035 | . 5997 | 3580 | -8688 | 6080 | -8778 |
| 2040 | -6186 | 3585 | -8990 | 6085 | -9040 |
| 2045 | $\cdot 6398$ | 3590 | $\cdot 9207$ | 6090 | '9231 |
| 2050 | -6644 | 3595 | -9639 | 6095 | .9641 |
| 2055 | $\cdot 6908$ | 4040 | -6574 | 6565 | .8115 |
| 2060 2065 | $\cdot 7205$ | 4045 | -6727 | 6570 | .8316 |
| 2065 | 7541 | 4050 | -6915 | 6575 | -8556 |
| 2070 | -7918 | 4055 | $\cdot 7125$ | 6580 | .8817 |
| 2075 2080 | .8302 .8669 | 4060 4065 | .7371 | 6585 6590 | -906I |
| 2080 2085 | . 8669 | 4065 | $\cdot 7661$ | 6590 | . 9241 |
| 2085 | -8980 | 4070 | . 7999 | 6595 | . 9642 |
| 2090 | '9202 | 4075 | . 8353 | 7070 | -8468 |
| 2525 | . 581 II | 4080 | . 8698 | 7075 | -8660 |
| 2530 2535 | . 5932 | 4085 | . 8999 | 7080 7085 | -8881 |
| 2535 2540 | . 6079 | 4090 | . 9210 | 7085 | -9098 |
| 2540 2545 | . 6254 | 4095 4545 | -9640 | 7090 7095 | '9259 |
| 2545 | $\cdot 6457$ | 4545 | -686I | 7095 | -9643 |
| 2550 | . 6692 | 4550 | $\cdot 7028$ | 7575 | . 88802 |
| 2555 | $\cdot 6946$ | 4555 | $\cdot 7216$ | 7580 | -8973 |
| 2560 2565 | 7234 $\cdot 7562$ | 4560 4565 | $\cdot 7442$ | 7585 | .9154 |
| 2565 | $\cdot 7932$ | 4565 4570 | .8034 | 7590 7595 | -9645 |
| 2575 | .8311 | 4575 | -8375 | 8080 | -9091 |
| 2580 | .8675 | 4580 | -8711 | 8085 | 9230 |
| 2585 | -8983 | 4585 | -9003 | 8090 | 9330 |
| 2590 | -9204 | 4590 | . 9213 | 8095 | -9648 |
| 2595 | -9639 | 4595 | '9640 | 8585 | '9327 |
| 3030 | -6042 | 5050 | 7170 | 8590 | .9396 |
| 3035 | . 6175 | 5055 | $\cdot 7334$ | 8595 | -9654 |
| 3040 3045 | -6339 | 5060 5065 | $\bigcirc 7536$ | 9090 | .9436 |
| 3045 | $\cdot 6527$ | 5065 | $\cdot 7783$ | 9095 | '9657 |
| 3050 | -6749 | 5070 | .8083 | 9595 | -9691 |

For explanation see pp. 29-31
Single Payment to secure $\mathrm{E1}$ at the Death of either of Two Lives according to the
CARLISLE TABLE

| Ages | $3 \%$ | Ages | $3 \%$ | Ages | $3 \%$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1515 | $\cdot 4202$ | 3055 | -6479 | 5075 | . 8246 |
| 1520 | - 4343 | 3060 | -6933 | 5080 | . 8528 |
| 1525 | ${ }^{4} 4526$ | 3065 | 7313 | 5085 | $\cdot 8823$ |
| 1530 | -4739 | 3070 | $\cdot 7768$ | 5090 | -9020 |
| 1535 | -4963 | 3075 | . 8190 | 5095 | . 8943 |
| 1540 | -5238 | 3080 | .8495 | 5555 | $\cdot 7057$ |
| 1545 | -5520 | 3085 | . 8804 | 5560 | $\cdot 7350$ |
| 1550 | -5884 | 3090 | -9006 | 5565 | $\cdot 7606$ |
| 1555 | . 6351 | 3095 | -893I | 5570 | $\cdot 7956$ |
| 1560 | -6839 | 3535 | -5421 | 5575 | . 8307 |
| 1565 | $\cdot 7245$ | 3540 | -5617 | 5580 | . 8567 |
| 1570 | .7723 | 3545 | - 5826 | 5585 | . 8846 |
| 1575 | .8161 | 3550 | . 6122 | 5590 | -9037 |
| r5 80 | -8475 | 3555 | -6528 | 5595 | -8959 |
| I5 85 | -8792 | 3560 | -6968 | 6060 | $\cdot 7584$ |
| 2020 | -4468 | 3565 | $\cdot 7338$ | 6065 | 7790 |
| 2025 | -4635 | 3570 | $\cdot 7784$ | 6070 | . 8088 |
| 2030 | -4831 | 3575 | . 8200 | 6075 | . 8399 |
| 2035 | -5039 | 3580 | -8501 | 6080 | . 8632 |
| 2040 | -5302 | 3585 | -8807 | 6085 | -8890 |
| 2045 | -5571 | 3590 | -9009 | 6090 | -9068 |
| 2050 | -5924 | 3595 | . 8933 | 6095 | -8993 |
| 2055 | . 6380 | 4040 | $\cdot 5782$ | 6565 | -7948 |
| 2060 | $\cdot 6860$ | 4045 | -5961 | 6570 | .8196 |
| 2065 | $\cdot 7259$ | 4050 | $\cdot 6227$ | 6575 | -8469 |
| 2070 | 7731 | 4055 | -6604 | 6580 | . 8677 |
| 2075 | .8166 | 4060 | 7022 | 6585 | -8917 |
| 2080 | -8478 | 4065 | $\cdot 7377$ | 6590 | '9088 |
| 2085 | -8793 | 4070 | -7811 | 6595 | 9010 |
| 2090 | -8999 | 4075 | .8219 | 7070 | .8382 |
| 2525 | -4782 | 4080 | . 8514 | 7075 | -8601 |
| 2530 | 4958 | 4085 | . 8816 | 7080 | $\cdot 8769$ |
| 2535 | -5148 | 4090 | .9015 | 7085 | -8974 |
| 2540 | .5391 | 4095 | . 8940 | 7090 | -9130 |
| 2545 | -5644 | 4545 | . 6105 | 7095 | -9054 |
| 2550 | -5983 | 4550 | . 6336 |  |  |
| 2555 | . 6425 | 4555 | . 6680 | 7580 | . 8896 |
| 2560 | $\cdot 6893$ | 4560 | $\cdot 7069$ | 7585 | '9063 |
| 2565 | $\cdot 7283$ | 4565 | $\cdot 7405$ | 7590 | 9197 |
| 2570 | $\cdot 7747$ | 4570 | 7826 | 7595 | -9128 |
| 2575 | -8176 | 4575 | . 8226 | 8080 | -8992 |
| 2580 | . 8484 | 4580 45 | .8518 | 8085 | $\cdot 9128$ |
| 2585 | -8797 | 4585 | -8819 | 8090 | -9246 |
| 2590 2595 | -9002 | 4590 4595 | .9017 .8942 | 8095 8585 | $\cdot 9183$ .9226 |
| 3030 | -51II | 5050 | . 6522 | 8590 | '9320 |
| 3035 | -5279 | 5055 | -6818 | 8595 | -9269 |
| 3040 | -5500 | 5060 | 7166 | 9090 | -9392 |
| 3045 | . 5733 | 5065 | 77469 | 9095 | -9354 |
| 3050 | . 6053 | 5070 | 78863 | 9595 | '9306 |

For explanation see pp. 29-3I

| Single Payment to seoure \&1 at the Death of either of Two Lives according to the INSTITUTE OF ACTUARIES HEALTHY MALES TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | 3 $\frac{1}{2} \%$ | $4 \%$ | Ages | $3 \%$ | 3 $\frac{1}{2}$ \% | $4 \%$ |
| 1010 | -35900 | $\cdot 31256$ | -27439 | 2070 | $\cdot 78463$ | $\cdot 75586$ | $\cdot 72872$ |
| 1015 | $\cdot 37657$ | - 32974 | -29096 | 2075 | -82818 | . 80426 | $\cdot 78147$ |
| 10 20 | -39833 | - 35125 | $\cdot 31200$ | 2080 | -86469 | -84518 | . 82641 |
| 10 25 | -41808 | -37045 | $\cdot 33036$ | 2085 | -89273 | -87681 | .86138 |
| 1030 | -44306 | -39514 | $\cdot 35437$ | 2090 | -92091 | -90878 | -89693 |
| 1035 | -47187 | -42391 | $\cdot 38263$ | 2095 | '95887 | -95232 | '94586 |
| 1040 | -50511 | -45756 | -41612 | 2525 | -45912 | 41177 | $\cdot 37132$ |
| 1045 | -54397 | -49754 | $\cdot 45655$ | 2530 | -47788 | 43060 | -38991 |
| 10 50 | -58699 | -54243 | - 50255 | 2535 | -50081 | 45375 | 441290 |
| 1055 | -63396 | -59214 | -55421 | 2540 | -52868 | -48216 | -44137 |
| 1060 | -68350 | -64530 | -61019 | 2545 | -56273 | - 51737 | -47713 |
| 1065 | 73289 | $\cdot 69895$ | -66735 | 2550 | -60159 | $\cdot 55804$ | -51894 |
| 10 70 | $\cdot 78156$ | -75245 | $\cdot 72500$ | 2555 | -64499 | -60407 | -56686 |
| 1075 | $\cdot 82623$ | -80208 | $\cdot 77907$ | 2560 | $\cdot 69155$ | $\cdot 65409$ | -61960 |
| 1080 | -86352 | -84386 | -82496 | 2565 | .73852 | 70515 | $\cdot 67404$ |
| 10 85 | -89207 | -87606 | -86054 | 2570 | $\cdot 78527$ | $\cdot 75656$ | $\cdot 72948$ |
| 10 90 | -92065 | -90849 | -89659 | 2575 | -82852 | -80464 | '78188 |
| 1095 | -95885 | -95230 | ${ }^{9} 9458$ | 2580 | -86486 | -84537 | . 82662 |
| 15 15 | -39225 | - 34520 | -30601 | 2585 | -8928I | -87690 | -86147 |
| 1520 | -41205 | -36494 | -32543 | 2590 | -92094 | '90881 | -89695 |
| 1525 | -42998 | -38246 | - 34228 | 2595 | ${ }^{9} 95887$ | -95233 | '94586 |
| 1530 | -45319 | -40548 | - 36475 | 3030 | -49398 | - 44690 | - 40615 |
| 1535 | -48038 | -43270 | -39156 | 3035 | -51415 | -46739 | -42662 |
| 1540 | $\cdot 51214$ | -46488 | - 42365 | 3040 | -53934 | -49319 | -45259 |
| 1545 | - 54965 | -50353 | -46275 | 3045 | -57094 | -52596 | -48597 |
| 1550 | -59145 | -54718 | -50751 | 3050 | -60770 | - 56452 | $\cdot 52569$ |
| 1555 | . 63731 | -59575 | $\cdot 55801$ | 3055 | -64939 | -60879 | -57183 |
| 15.60 | $\cdot 68589$ | $\cdot 64790$ | -61295 | 3060 | . 69460 | -65741 | -62313 |
| 1565 | '73449 | $\cdot 70069$ | - 66920 | 3065 | $\cdot 74057$ | -70741 | $\cdot 67647$ |
| 1570 | 78250 | $\cdot 75347$ | 72610 | 3070 | $\cdot 78658$ | 75802 | 73107 |
| 1575 | . 82669 | -80259 | $\cdot 77962$ | 3075 | -82933 | -80555 |  |
| 1580 | -86369 | . 84405 | . 82516 | 3080 | . 86534 | -84591 | . 82722 |
| 1585 | -89207 | -87606 | -86054 | 3085 | -89309 | -87721 | -86183 |
| 1590 | '92057 | -90839 | -89648 | 3090 | '92106 | -90895 | . 89711 |
| 1595 | '95882 | '95227 | -94580 | 3095 | '95889 | $\cdot 95235$ | '94588 |
| 2020 | '42966 | - 38268 | - 34303 | 3535 | -53122 | - 48488 | -44424 |
| 2025 | -44548 | -39824 | $\cdot 35810$ | 3540 | - 55319 | -50753 | - 46717 |
| 2030 | -46656 | -41925 | -37871 | 3545 | -58168 | - 53720 | - 49752 |
| 2035 | -49172 | -44453 | - 40370 | 3550 | -61567 | - 57295 | '53446 |
| 2040 | -52163 | -47493 | - 43407 | 3555 | -65504 | . 61485 | 57821 |
| $20 \cdot 45$ | -55747 | $\cdot 51189$ | ${ }^{4} 4152$ | 3560 | -69844 | -66157 | -62756 |
| 2050 | -59779 | -55403 | -51479 | 3565 | -74308 | $\cdot 71015$ | -67942 |
| 2055 | -64236 | -60126 | . 56391 | 3570 | $\cdot 78813$ | -75974 | $\cdot 73293$ |
| 2060 2065 | $\cdot \cdot 68980$ | . 65221 | .61760 .67277 | 3575 3580 | . 83026 | . 80658 | $\cdot 78401$ |
| 2065 | '73743 | $\cdot 70396$ | $\cdot 67277$ | 3580 | -86587 | -8465 1 | . 82789 |

For explanation see pp. 29-31

| Single Payment to secure £1 at the Death of either of Two Lives according to the INSTITUTE OF ACTUARIES HEALTHY MALES TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | 3 $\frac{1}{2}$ \% | $4 \%$ | Ages | $3 \%$ | 3 $\frac{1}{2} \%$ | $4 \%$ |
| 3585 | -89340 | -87756 | - 86220 | 5575 | .84093 | . 81850 | .79706 |
| 3590 | -92119 | -90910 | -89728 | 5580 | -87200 | . 85341 | -83550 |
| 3595 | -95890 | -95236 | - 94590 | 5585 | -89681 | -88143 | -86651 |
| 4040 | - 57155 | -52659 | -48661 | 5590 | -92262 | -91073 | -89911 |
| 4045 | -59625 | -55247 | -51324 | 5595 | -95908 | . 95256 | '94613 |
| 4050 | -62667 | -58460 | -54656 | 6060 | $\cdot 76120$ | '73003 | $\cdot 70082$ |
| 4055 | -66291 | -62327 | - 58705 | 6065 | $\cdot 78676$ | -75820 | 73126 |
| 4060 | '70377 | -66734 | - 63368 | 6070 | . 81647 | -79117 | $\cdot 76712$ |
| 4065 | $\cdot 74650$ | $\cdot 71390$ | - 68344 | 6075 | -84758 | -82595 | -80524 |
| 4070 | $\cdot 79021$ | ${ }^{7} 76203$ | $\cdot 73542$ | 6080 | -87599 | -85791 | -84048 |
| 4075 | . 83145 | -80792 | ${ }^{7} 78547$ | 6085 | $\cdot 89913$ | -88406 | -86944 |
| 4080 | . 86654 | -84727 | . 82872 | 6090 | $\cdot 92362$ | -91188 | '90039 |
| 4085 | -89376 | - 87797 | - 86267 | 6095 | . 95919 | -95270 | 94629 |
| 4090 | -92135 | -90928 | -89748 | 6565 | -80626 | $\cdot 77981$ | .75472 |
| 4095 | '95892 | -95239 | -94593 | 6570 | -83016 | -80643 | ${ }^{7} 78379$ |
| 4545 | -61665 | -57399 | -53553 | 6575 | . 85651 | . 83597 | -81625 |
| 4550 | * 64267 | -60162 | - 56434 | 6580 | -88150 | $\cdot 86412$ | -84734 |
| 4555 | -67477 | . 63601 | -60048 | 6585 | -90239 | - 88776 | -87356 |
| 4560 | $\cdot 71207$ | -67635 | -64328 | 6590 | ${ }^{\text {-92509 }}$ | -91356 | '90228 |
| 4565 | $\cdot 75201$ | $\cdot 71993$ | . 68993 | 6595 | '95939 | -95292 | '94653 |
| 4570 | '79364 | $\cdot 76583$ | -73954 | 7070 | -84789 | -82626 | -80554 |
| 4575 | . 83348 | -81018 | ${ }^{7} 78795$ | 7075 | - 86866 | . 84962 | . 83129 |
| 4580 | -86770 | $\cdot 84857$ | . 83015 | 7080 | -88928 | - 87292 | -85708 |
| 4585 | - 89440 | $\cdot 87870$ | -86347 | 7085 | '90715 | - 89317 | -87958 |
| 4590 | -92160 | '90957 | -89781 | 7090 | -92722 | -91600 | '90501 |
| 4595 | -95895 | -95242 | '94596 | 7095 | -95965 | .95322 | $\cdot 94688$ |
| 5050 | -66380 | . 62423 | -58806 | 7575 | . 88386 | -86678 | . 85028 |
| 5055 | -69095 | - 65345 | -61893 | 7580 | -89974 | -88477 | . 87023 |
| 5060 | 72370 | -68899 | - 65677 | 7585 | 91405 | '90104 | . 88835 |
| 5065 | $\cdot 75986$ | $\cdot 72856$ | -6992I | 7590 | -9307 | $\cdot 91999$ | '90950 |
| 5070 | .79863 | $\cdot 77132$ | $\cdot 74551$ | 7595 | -96014 | -95380 |  |
| 5075 | -83645 | -81350 | $\cdot 79158$ | 8080 | $\cdot 91120$ | -89779 | . 88473 |
| 5080 | - 86940 | - 858549 | . 83227 | 8085 | -92206 | -91015 | - 89853 |
| 5085 | -89535 | -87978 | -86468 | 8090 | 93499 | '92491 | -91501 |
| 5090 | -92201 | $\cdot 91004$ | -89833 | 8095 | -96078 | -95452 | '94835 |
| 5095 | -95900 | '95248 | . 94603 | 8585 | $\cdot 93002$ | -91926 | -90872 |
| 5555 | $\cdot 71260$ | $\cdot 67690$ | $\cdot 64385$ | 8590 8595 | $\cdot 93978$ | $\cdot 93040$ | $\cdot 92119$ |
| 5560 | $\cdot 73988$ | 70665 | $\cdot 67566$ | 8595 | $\cdot 96164$ | '95552 | -94947 |
| 55 55 50 | $\cdot 77118$ .80594 | $\cdots \cdot 74100$ | 771264 | 9090 | - 94555 | -93702 | $\cdot 92863$ |
| 5570 | -80594 | -77947 | '75436 | $\begin{aligned} & 9095 \\ & 9595 \end{aligned}$ | $\begin{array}{r} 96257 \\ .96703 \end{array}$ | $\begin{array}{r} 95660 \\ .96174 \end{array}$ | $.95069$ |


| Annual Payment during the Joint Continuance of Two Lives to secure $£ 1$ at the First Death according to the INSTITUTE OF AGTUARIES HEALTHY MALES TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | 31 $\%$ | $4 \%$ | Ages | $3 \%$ | 3 $\frac{1}{2} \%$ | $4 \%$ |
| 1010 | $\bigcirc 016$ | -015 | $\bigcirc{ }^{\circ} 5$ | 3055 | $\bigcirc{ }^{\circ} \mathrm{O} 4$ | $\bigcirc$ | . 051 |
| 1020 | -19 | -18 | 017 | 3060 | -666 | $\bigcirc 65$ | -664 |
| 1030 | . 223 | -222 | -021 | 3070 | -107 | -106 | -105 |
| 1040 | -030 | $\bigcirc$ | $\stackrel{027}{ }$ | 3080 30 | -187 | -186 | -184 |
| 1050 | -041 | 040 | -039 | 3090 | 340 | '338 | '335 |
| 1060 | -063 | -062 | -060 | 3535 | -033 | - 032 | -31 |
| 1070 | -104 | -103 | $\cdot{ }^{101}$ | 3540 | $\bigcirc 36$ | -335 | $\bigcirc$ |
| 1080 | $\begin{array}{r}\cdot 184 \\ \cdot 338 \\ \hline\end{array}$ | $\cdot 183$ $\cdot 36$ | -181 | 3545 35 35 | $\stackrel{040}{ }$ | -039 | $\stackrel{038}{\cdot 048}$ |
| 1090 | $\cdot 338$ | -336 | -333 | 3550 35 | -47 | $\bigcirc 45$ | $\cdot{ }^{-94}$ |
| 1515 | $\bigcirc 19$ | -18 | 017 | 3555 | -055 | -054 | -053 |
| 1520 | $\bigcirc 020$ | $\bigcirc 19$ | $\bigcirc 19$ | 3560 | -067 | $\bigcirc 66$ | -065 |
| 1525 | -022 | -21 | -20 | 3570 | -108 | -187 | -106 |
| 1530 | -024 | -23 | -022 | 3580 | -188 | - 186 | -184 |
| 1535 15 15 | ${ }^{\circ} \mathrm{O} 27$ | ${ }^{\circ} \mathrm{O} 26$ | -025 | 3590 40 40 | . 340 | 338 <br> .388 <br> 08 | .336 |
| 1540 | -03I | -029 |  | 4040 | -039 | ${ }^{\circ} 38$ | $\stackrel{36}{ }$ |
| 1545 | $\bigcirc{ }^{\circ} \mathrm{O} 36$ | . 034 | -033 | 4045 | -043 | $\bigcirc{ }^{\circ} \mathrm{O} 4$ | -041 |
| 1550 | -042 | . 041 | -040 | 4050 | .049 | . 048 | . 046 |
| 1555 1560 | -051 | -050 | -049 | 4055 4060 | -.057 | -066 | .055 |
| 1570 | -105 | -103 | -102 | 4070 | 'IIO | -108 | 'Io7 |
| 1580 | -185 | $\cdot 183$ | -181 | 4080 | -189 | -188 | -186 |
| 1590 | -338 | $\cdot 336$ | -333 | 4090 | 341 | -339 | '337 |
| 2020 | -022 | ${ }^{\circ} 221$ | -20 | 4545 | -047 | -486 | -44 |
| 2025 | -223 | ${ }^{\circ} \mathrm{O} 22$ | ${ }^{-221}$ | 4550 | $\bigcirc$ | -051 | -050 |
| 2030 | -025 | 024 | -023 .026 | 4555 4560 | $\stackrel{060}{ } \cdot 072$ | ${ }^{\circ} \mathrm{O} 99$ | -058 |
| 2035 2040 | -028 | -027 | -026 | 4560 45 70 | ${ }_{-12}$ | ${ }^{-115}$ | - I O 9 |
| 2045 | -37 | $\bigcirc 35$ | -034 | 4580 | -191 | -189 | -188 |
| 2050 | '043 | -042 | -041 | 4590 | -342 | -340 | -338 |
| 2055 | - 02 | $\bigcirc 51$ | - 050 | 5050 | $\bigcirc 58$ | -056 | -055 |
| 2060 | . 065 | -063 | -062 | 5055 | $\bigcirc 065$ | $\bigcirc 664$ | ${ }^{\circ} \mathrm{0} 62$ |
| 20 70 | . 106 | -105 | -103 | 5060 | $\cdot 076$ | $\bigcirc 75$ | -074 |
| $\begin{array}{r}2080 \\ 2090 \\ \hline 20\end{array}$ | -186 | . 185 | -183 | 5070 5080 | -115 | - ${ }_{\text {- }}{ }_{\text {IT4 }}$ |  |
| 2525 | 025 | -24 | ${ }^{\circ} \mathrm{O} 3$ | 5090 | -344 | 342 | $\cdot 340$ |
| 2530 | -027 | 026 | -225 | 5555 | - ${ }^{7} 2$ | $\bigcirc{ }^{\circ} \mathrm{7}$ | $\bigcirc{ }^{\circ} \mathrm{O}$ |
| 25 35 25 | $\stackrel{029}{ }{ }^{-23}$ | ${ }^{-028}$ | $\stackrel{.027}{.030}$ | 5560 | -083 | - $\cdot 1.81$ | - 080 |
| 25 25 25 45 | $\bigcirc$ | -036 | -035 | 5580 | -121 | ${ }_{-197}$ | ${ }_{-195}$ |
| 2550 | -044 | -043 | ${ }^{\circ} \mathrm{O} 1$ | 5590 | 347 | '345 | 343 |
| 2555 | -053 | -052 | -050 | 6060 | -093 | -991 | 090 |
| 25 25 25 7 | -065 | -064 | -063 | 6070 6080 80 | - 130 | -128 | ${ }^{\cdot 126}$ |
| 2570 2580 25 | $\begin{array}{r}\cdot 107 \\ \cdot 186 \\ \hline\end{array}$ | -105 | -104 | 6080 6090 | -206 | . 204 | -203 |
| 2590 | 339 | -337 | $\cdot 335$ | 7070 | -162 | ${ }^{-165}$ | - 515 |
| 3030 | -028 | -027 | -026 | 7080 | -234 | -232 | -231 |
| 3035 | -031 | -030 | 029 | 7090 | 372 | '369 | 366 |
| 3040 | -034 | $\bigcirc{ }^{\circ} 38$ | -032 | 8080 | $\cdot 299$ | . 297 | . 295 |
| 3045 3050 | -039 | -038 $\cdot 044$ | $\cdot 036$ $\cdot$ $\cdot 043$ | 80 90 90 | 419 .471 | .456 .468 | . 414 |

For explanation see pp. 29-3I

| Valne of an Annuity during the Continuance of either of Two Lives according to the NORTHAMPTON TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | $4 \%$ | $5 \%$ | $6 \%$ | Ages |
| 1515 | $24^{\circ} \mathrm{OL} 5$ | 20.171 | 17.216 | 14.954 | 1515 |
| 1525 | 23.245 | 19.599 | 16.831 | 14.665 | 1525 |
| I5 35 | 22.444 | 19.043 | 16.435 | 14.368 | 1535 |
| I5 45 | 21.662 | 18.467 | 16.003 | 14.027 | 1545 |
| I5 55 | 20.957 | 17.915 | 15.567 | 13.674 | 1555 |
| 1565 | $20 \cdot 364$ | 17.425 | 15.155 | 13.343 | 1565 |
| 1575 | 19.945 | 17.058 | 14.837 | 13.069 | 1575 |
| 2020 | 23.143 | 19.531 | $16 \cdot 782$ | 14.640 | 2020 |
| 2030 | $22 \cdot 274$ | 18.941 | 16.372 | 14.348 | 2030 |
| 2040 | 21.390 | 18.306 | 15.907 | 14.003 | 2040 |
| 2050 | 20.551 | 17.667 | 15.415 | 13.620 | 2050 |
| 2060 | 19.818 | 17.077 | 14.936 | 13.228 | 2060 |
| 2070 | 19.223 | $16 \cdot 568$ | 14.498 | 12.852 | 2070 |
| 2080 | 18.850 | $16 \cdot 233$ | $14 \cdot 197$ | 12.578 | 2080 |
| 2525 | $22 \cdot 245$ | 18.932 | 16.370 | 14.382 | 2525 |
| 2535 | 21.289 | 18.260 | 15.894 | 13.979 |  |
| 2545 | 20.342 | 17.561 | $15 \cdot 368$ | 13.569 | 2545 |
| 2555 | 19.480 | 16.885 | 14.833 | 13.142 | 2555 |
| 2565 | $18 \cdot 748$ | 16.279 | 14.324 | 12.719 | 2565 |
| 2575 | $18 \cdot 214$ | 15.811 | 13.915 | $12 \cdot 369$ | 2575 |
| 3030 | 21.255 | 18.249 | 15.889 | 14.004 | 3030 |
| 3040 | $20 \cdot 202$ | 17.488 | 15.333 | 13.592 | 3040 |
| 3050 | 19.198 | 16.724 | 14.745 | 13.133 12.665 | 3050 |
| 3060 | I8.321 | 16.018 | $14 \cdot 172$ | 12.665 | 3060 |
| 3070 | 17.613 | $15 \cdot 413$ | 13.653 | 12.218 | 3070 |
| 3080 | 17.173 | 15.018 | 13.297 | 11.895 | 3080 |
| 3535 | $20 \cdot 154$ | 17.466 | 15.324 | 13.557 | 3535 |
| 3545 | 19.008 | 16.616 | 14.686 | 13.70 | 3545 |
| 3555 | 17.957 | ${ }^{5} 5792$ | 14.035 | 12.547 | 3555 |
| 3565 | 17.065 | 15.053 | 13.414 | 12.024 | 3565 |
| 3575 | 16.417 | 14.485 | 12.919 | ${ }_{11} 614$ | 3575 |
| 4040 | 18.932 | 16.574 | 14.658 | 13.088 | 4040 |
| 4050 | 17.694 | 15.627 | 13.929 | 12.520 | 4050 |
| 4060 | 16.600 | 14.746 | 13.214 | 11.935 | 4060 |
| 4070 | $15 \% 11$ | 13.987 | $12 \cdot 562$ | I 1-374 | 4070 |
| 4080 | $15 \cdot 160$ | 13.491 | 12.116 | 10.969 | 4080 |
| 4545 | 17.608 | 15.576 | 13.898 | 12.463 | 4545 |
| 4555 | 16.285 | 14.536 | 13.076 12.283 | 11.809 11.252 | 4555 |
| 4565 | 15.146 | 13.591 | 12.283 | 11.252 10.594 | 4565 |
| 4575 | 14.31 I | 12.859 | 11.643 | $10 \cdot 594$ | 4575 |
| 5050 | $16 \cdot 158$ | 14.447 | ${ }^{13} 3.016$ | II.804 |  |
| 5060 | 14.752 | 13.314 | 12.093 | 11.048 | 5060 |
| 5070 | 13.588 | 12319 | ${ }_{11} 1238$ | $10 \cdot 31 \mathrm{I}$ | 5070 |
| 5080 | $12 \cdot 85$ | 11.660 | 10.644 | 9.772 10. | 5080 5555 |
| 5555 | 14.619 | 13.223 | 12.029 | 10.965 | 5555 |
| 5565 | 13.120 | 11.976 | 10.983 | Io' 100 | 5565 |
| 5575 | 11-999 | 10.992 | $10 \cdot 120$ | $9 \cdot 342$ | 5575 |
| 6060 | 12.948 | II 8.85 | 10.896 | 10.061 | 6060 |
| 6070 | 11.372 | $10 \cdot 500$ | 9735 | 9.058 | 6070 |
| 6080 | $10 \cdot 361$ | 9.590 | 8.915 | 8.315 | 6080 |

For explanation see pp. 31,32

| Value of an Annnity during the Continuance of either of Two Lives acoording to the CARLISLE TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | Ages | 3\% | Ages | 3\% | Ages | 3\% |
| 55 | 27.570 | 1580 | 22.712 | 35.40 | 21.528 | 5555 | 15.715 |
| 510 | 27.332 | 1585 | 22.663 | 3545 | 20.965 | 5560 | 14.802 |
| 515 | 26.986 | 1590 | 22.640 | 3550 | 20.423 | 5565 | $14 \cdot 107$ |
| 520 | $26 \cdot 665$ | 1595 | 22.639 | 3555 | 19.924 | 5570 | 13.513 |
| 525 | 26.343 | 2020 | 25.398 | 3560 | 19.515 | 5575 | $13 \cdot 107$ |
| 530 | 26.032 | 2025 | 24.94 I | 3565 | 19.211 | 5580 | 12.854 |
| 535 | 25.737 | 2030 | 24.505 | 3570 | 18.949 | 5585 | 12.677 |
| 540 | 25.444 | 2035 | 24.098 | 3575 | 18.767 | 5590 | 12.600 |
| 545 | 25.174 | 2040 | 23.707 | 3580 | 18.651 | 5595 | 12.591 |
| 550 | 24.902 | 2045 | 23.351 | 3585 | 18.567 | 6060 | 13.688 |
| 555 | 24.638 | 2050 | 23.003 | 3590 | 18.530 | 6065 | 12.820 |
| 560 | 24.41 II | 2055 | $22 \cdot 676$ | 3595 | 18.527 | 6070 | 12.050 |
| 565 | 24.238 | 2060 | 22.404 | 4040 | 20.803 | 6075 | I 1.506 |
| 570 | 24.079 | 2065 | $22 \cdot 201$ | 4045 | 20.137 | 6080 | II 1 I6I |
| 575 | 23.961 | 2070 | 22.029 | 4050 | 19.490 | 6085 | $10 \cdot 909$ |
| 580 | 23.883 | 2075 | 21.909 | 4055 | 18.893 | 6090 | $10 \cdot 791$ |
| 585 | 23.820 | 2080 | 21.835 | 4060 | 18.409 | 6095 | $10 \cdot 790$ |
| 590 | 23.786 | 2085 | 21.782 | 4065 | 18.054 | 6565 | $11 \cdot 788$ |
| 595 | ${ }^{23} 792$ | 2090 | 21.757 | 4070 | 17.750 | 6570 | 10.847 |
| 10 10 | 27.060 | 2095 | 21.756 | 4075 | 17.540 | 6575 | 10•173 |
| 1015 | 26.685 | 2525 | 24.417 | 4080 | 17.406 | 6580 | 9.740 |
| 1020 | 26.335 | 2530 | 23.912 | 4085 | 17.306 | 6585 | $9 \cdot 428$ |
| 1025 | 25.989 | 2535 | 23.440 | 4090 | 17.261 | 6590 | 9:285 |
| 1030 | $25 \cdot 659$ | 2540 | 22.986 | 4095 | 17.261 | 6595 | $9 \cdot 277$ |
| 1035 | 25.350 | 2545 | 22.575 | 4545 | 19.355 | 7070 | 9.691 |
| 1040 | 25.049 | 2550 | 22.176 | 4550 | $18 \cdot 585$ | 7075 | 8.831 |
| 1045 | 24.774 | 2555 | $2 \mathrm{I} \cdot 801$ | 4555 | 17.87 I | 7080 | $8 \cdot 259$ |
| 1050 | 24.505 | 2560 | 21.489 | 4560 | 17.292 | 7085 | 7.830 |
| 1055 | 24.253 | 2565 | 21.255 | 4565 | 16.870 | 7090 | $7 \cdot 635$ |
| 1060 | 24.046 | 2570 | 21.054 | 4570 | 16.52I | 7095 | $7 \cdot 633$ |
| 1065 | 23.892 | 2575 | 20.915 | 4575 | 16.286 | 7575 | 7793 |
| 1070 | 23.761 | 2580 | 20.827 | 4580 | 16.140 | 7580 | $7 \cdot 086$ |
| 1075 | 23.671 | 2585 | $20 \cdot 765$ | 4585 | $16 \cdot 036$ | 7585 | $6 \cdot 524$ |
| 1080 | 23.614 | 2590 | 20.737 | 4590 | 15.987 | 7590 | $6 \cdot 253$ |
| 10 85 | 23.575 | 2595 | $20 \cdot 735$ | 4595 | 15.987 | 7595 | $6 \cdot 276$ |
| 1090 | 23.557 | 3030 | 23.330 | 5050 | 17.662 | 8080 | 6.271 |
| 1095 | 23.555 | 3035 | $22 \cdot 782$ | 5055 | $16 \cdot 787$ | 8085 | $5 \cdot 601$ |
| 1515 | 26.256 | 3040 | 22.251 | 5060 | 16.064 | 8090 | $5 \cdot 274$ |
| 1520 | 25.855 | 3045 | 2 L 771 | 5065 | 15.528 | 8095 | 5.315 |
| 1525 | 25.456 | 3050 | 21.308 | 5070 | 15.088 | 8585 | 4.802 |
| 1530 | 25'075 | 3055 | 20.877 | 5075 | 14.792 | 8590 | 4•393 |
| 1535 | 24.721 | 3060 3065 | 20.519 | 5080 | 14.613 | 8595 | 4478 |
| 1540 | 24.377 | 3065 | 20.251 | 5085 | 14.491 | 9090 | 3.909 |
| 1545 | 24.062 | 3070 | 20.018 | 5090 | 14.436 | 9095 | 4.039 |
| 1550 | 23.753 | 3075 | 19.856 | 5095 | 14.430 | 9595 | $4 \cdot 13 \mathrm{I}$ |
| 1555 | 23.463 | 3080 | 19753 |  |  |  |  |
| 1560 | 23.221 | 3085 3080 | 19.679 |  |  |  |  |
| 1565 1570 | 23.041 22.887 | 3090 3095 | 19.645 19.644 |  |  |  |  |
| 1575 | 22.779 | 3535 | $22 \cdot 148$ |  |  |  |  |

For explanation see pp. 31, 32

## Valne of an Annuity during the Continuance of either of Two Lives according to the INSTITUTE OF ACTUARIES HEALTHY MALES TABLE

| Ages | 3 | 31 |  | Ages |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10 |  |  |  |  |  |  |  |
| 10 |  |  | $21 \cdot 8324$ |  |  |  |  |
| 10 |  | 23.4826 | 21.42 | 3070 | 20•1964 |  |  |
| 1040 |  | 23.0155 | 21.0 | 3080 |  |  |  |
| 1050 |  | 22.6101 | 20.6 | 3090 |  |  |  |
| 1060 | 24.5 | $22 \cdot 2$ |  | 3535 | 22.0792 | 20.4161 |  |
| 1070 |  | $22 \cdot 1$ | 20.2197 |  | 21.4228 | 19.8639 |  |
| 1080 | 24 | 22.0 | 20-1299 |  | 20.818 |  |  |
| 10 | $24 \cdot 16$ | 21.9694 | 20.0919 |  | 20.2881 |  |  |
| 1515 | 26.45 | 23.9351 | 21.7 | 3555 | 19.837 |  | 29 |
|  | 26.0 |  |  | 3560 | 19. |  |  |
|  | 25.6252 | 23. | 21.27 |  | 18.9694 |  |  |
|  | 25.25 |  | 21.0 |  | $18 \cdot 7244$ | 17.4578 |  |
|  | 24.90 |  |  | 3590 | 18.6212 |  | 6.2300 |
| ז5 40 | 24.5 | 22. |  | 4040 | 20.6421 | 19.2056 | 7.9215 |
|  | 24.289 |  |  | 4045 |  | $18 \cdot 5755$ | 95 |
|  | $24^{\circ} 0273$ | 21.9459 |  | 4050 |  |  |  |
|  | 23.7995 | 21 |  |  |  | 17.5105 | 07 |
|  |  | 21 |  |  | 18 | 17-1000 |  |
| 1570 | 23.347 | 21 |  | 4070 | $17 \cdot 629$ | 16.5 | 15.5487 |
| 158 |  | $21 \cdot 2097$ | 19.4753 | 40 |  |  |  |
|  |  | 21.1 | 19 |  |  |  | 31 |
| 2020 |  |  |  |  |  |  |  |
| 2025 |  | 22 |  |  |  |  |  |
| 2030 | 24. |  |  | 45 |  |  |  |
| 203 | $24 \cdot 1$ | 22.1228 | 20.337 | 4560 |  |  |  |
| 204 | $23 \cdot$ | 21.7998 | 20.06 | 4570 | -16 |  |  |
| 2045 | 23.44 | 21.4974 | 19.8041 | 4580 | .7 |  |  |
| 205 | 23•129 | 21.224 | 19.5645 | 4590 | $5 \cdot 641$ |  |  |
| 2055 | $22 \cdot 8572$ | 20.9815 | 19.348 | 5050 | 17.249 | 16.2 | 17 |
| 2060 | $22 \cdot 6$ | 20 | 19. | 50 |  |  | 14.6708 |
|  | $22 \cdot 304$ |  | $18 \cdot 8837$ | 5060 |  | 14.82 | 14.0710 |
| 20 |  |  |  |  |  |  | 13.2123 |
| 20 | 22.0 |  |  |  |  |  |  |
| 2525 | 24.5 |  | 20.57 |  | 13.9586 |  |  |
|  |  |  |  |  |  |  |  |
|  | 23.4 |  | 19.8 |  |  | 13.7083 | 13.0689 |
|  |  |  |  |  | 13 |  | II ${ }^{\text {¢ } 9491}$ |
|  |  |  |  |  | 12 |  |  |
|  |  |  |  | 5590 |  |  | 11-1234 |
|  |  |  | 18.7418 | 6060 |  | 12.68 |  |
|  |  |  |  |  | II.5911 | 11-1295 | -6972 |
|  |  |  |  | 6080 | $10 \cdot 7207$ |  | -9157 |
|  |  |  | 18 |  | 10 |  |  |
| 2590 | 21 |  | 17.9854 | 7070 |  |  | .5300 |
| 3030 | 23.361 |  | 19.8219 | 7080 |  |  |  |
|  | 22.7735 22.2274 | 20.9900 | 19 |  | 6.8975 |  | 273 |
|  |  |  |  | 8080 |  | 5 |  |
| 3045 | 21.7 | 20-1046 | 18 | 8090 |  |  | 4.0986 |
| 305 | $21 \cdot 2$ | 19.7251 | 18.3349 | 9090 | 2.610 | 2.58 | 2.5521 |

For explanation see pp. 3I, 32

| Single Payment to secure $£ 1$ at the Death of the Last of Two Lives aocording to the NORTHAMPTON TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | 3\% | Age3 | $3 \%$ | Ages | 3\% |
| 2020 | '2968 | 1515 | -2693 | 3555 | -4479 |
| 2121 | -3019 | 1520 | -2824 | 3560 | -4615 |
| 2222 | $\cdot 3070$ | 1525 | -2939 | 3565 | -4738 |
| 2323 | $\cdot 3122$ | 1530 | $\cdot 3055$ | 3570 | -4844 |
| 2424 | -3175 | 1535 | -3172 | 3575 | -4927 |
| 2525 | $\cdot 3230$ | 1540 | - 3288 | 3580 | -4986 |
| 2626 | $\cdot 3285$ | 1545 | -3399 | 4045 | -4378 |
| 2727 2828 | -3341 | 1550 | -3506 | 4050 | -4555 |
| 2828 | -3399 | 1555 | -3605 | 4055 | $\cdot 4720$ |
| 2929 | -3458 | 1560 | -3696 | 4060 | -4874 |
| 3030 | -3518 | 1565 | -3777 | 4065 | -5013 |
| 3131 | -3580 | 1570 | -3846 | 4070 | $\cdot 5133$ |
| 3232 | - 3642 | 1575 | $\cdot 3899$ | 4075 | -5226 |
| 3333 | 3707 | 1580 | -3937 | 4080 | -5293 |
| 3434 | -3772 | 2025 | $\cdot 3094$ | 4550 | -4779 |
| 3535 | $\cdot 3839$ | 2030 | -3221 | 4555 | -4965 |
| 3636 | 3907 | 2035 | -3350 | 4560 | -5139 |
| 3737 | -3977 | 2040 | $\cdot 3479$ | 4565 | -5297 |
| 3838 | -4048 | 2045 | $\cdot 3603$ | 4570 | -5434 |
| 3939 | -4121 | 2050 | $\cdot 3723$ | 4575 | -5540 |
| 4040 | -4195 | 2055 | -3833 | 4580 | -5617 |
| 4 I 4 I | -4270 | 2060 | $\cdot 3936$ | 5055 | '5213 |
| 4242 | ${ }^{4} 4346$ | 2065 | -4029 | 5060 | -5412 |
| 4343 | $\cdot 4422$ | 2070 | -4110 | 5065 | -5593 |
| 4444 | 4501 | 2075 | -4173 | 5070 | -5751 |
|  | -4580 | 2080 | . 4218 | 5075 | -5875 |
| 4646 | -4662 | 2530 | $\cdot 3368$ | 5080 | -5964 |
| 4747 | -4745 | 2535 | -3508 | 5560 | -5678 |
| 4848 | -4829 | 2540 | $\cdot 3648$ | 5565 | $\cdot 5887$ |
| 4949 | -4916 | 2545 | $\cdot 3784$ | 5570 | . 6070 |
| 5050 | $\cdot 5003$ | 2550 | $\cdot 3914$ |  |  |
| $5 \mathrm{5I}$ | - 5090 | 2555 | .4035 | 5580 | .6318 |
| 5252 | - 5178 | 2560 | -4147 | 6065 | .6181 |
| 5353 | -5267 | 2565 | $\cdot \cdot 4248$ | 6070 | $\cdot 6396$ |
| 5454 | -5358 | 2570 | -4335 | 6075 | $\cdot 6567$ |
|  | - 545 5 |  | ${ }^{4} 4403$ | 6080 | -6691 |
| 5656 5757 | . 5545 | 2580 3035 | $\cdot 4453$ | 6570 | . 6721 |
| 5757 5858 | . 564 I . | 3035 3040 | -3671 | 6575 6580 | . 6928 |
| 5858 | . 5738 | 3040 | $\cdot 3825$ | 6580 | -708I |
| 5959 | -5837 | 3045 | '3974 | 7070 | ${ }^{7} 7027$ |
| 6060 | -5937 | 3050 | -4117 | 7075 | 7281 |
| 6161 6262 | .6039 | 3055 3060 | 4250 .4372 | 7080 7575 | 77474 .7587 |
| 6363 | . 6248 | 3060 3065 | -4483 | 7575 7580 | $\begin{array}{r}\cdot 7587 \\ \hline 7829\end{array}$ |
| 6464 | -6355 | 3070 | -4579 | 8080 | -8124 |
| 6565 | -6465 | 3075 | -4653 | 8085 | . 8323 |
| 6666 | . 6575 | 3080 | 4707 | 8090 | .845I |
| 6767 | . 6687 | 3540 | -4008 | 8585 | . 8564 |
| 6868 | -6800 | 3545 | -4172 | 8590 | -8736 |
| 6969 | -6913 | 3550 | -4332 | 9090 | -8937 |

For explanation see pp. 31, 32

| 8ingle Payment to secure £1 at the Death of the Last of Two Lives according to the CARLISLE TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | Ages | $3 \%$ | Ages | 3\% |
| 1515 | '2061 | 3040 | $\cdot 3228$ | 5060 | -5030 |
| 1520 | -2178 | 3045 | -3368 | 5065 | -5186 |
| 1525 | -2294 | 3050 | -3503 | 5070 | . 5314 |
| 1530 | '2405 | 3055 | $\cdot 3628$ | 5075 | -5400 |
| 1535 | -2508 | 3060 | -3732 | 5080 | -5453 |
| 1540 | $\cdot 2609$ | 3065 | $\cdot 3810$ | 5085 | -5488 |
| 1545 | -2700 | 3070 | $\cdot 3878$ | 5090 | -5504 |
| 1550 | -2790 | 3075 | $\cdot 3926$ | 5095 | . 5506 |
| 1555 | $\cdot 2875$ | 3080 | -3955 | 5555 | -5132 |
| 1560 | '2945 | 3085 | -3977 | 5560 | . 5398 |
| 1565 | -2998 | 3090 | -3987 | 5565 | -5600 |
| 1570 | -3043 | 3095 | $\cdot 3987$ | 5570 | -5773 |
| 1575 | -3074 | 3535 | $\cdot 3258$ | 5575 | -5891 |
| 1580 | $\cdot 3094$ | 3540 | -3439 | 5580 | . 5965 |
| 1585 | '3108 | 3545 | -3602 | 5585 | . 6016 |
| 1590 | 3115 | 3550 | $\cdot 3760$ | 5590 | . 6039 |
| 1595 | $\cdot 3115$ | 3555 | $\cdot 3906$ | 5595 | . 604 I |
| 2020 | -2311 | 3560 | 4025 | 6060 | . 5722 |
| 2025 | $\cdot 2444$ | 3565 | 4113 | 6065 | -5975 |
| 2030 | -257I | 3570 | 4190 | 6070 | . 6199 |
| 2035 | -2690 | 3575 | -4243 | 6075 | . 6358 |
| 2040 | $\cdot 2804$ | 3580 | - 4276 | 6080 | . 6458 |
| 2045 | -2908 | 3585 | 43301 | 6085 | . 6531 |
| 2050 | $\cdot 3009$ | 3590 | -4312 | 6090 | -6566 |
| 2055 | -3104 | 3595 | -4313 | 6095 | -6566 |
| 2060 | $\cdot 3183$ | 4040 | $\cdot 3650$ | 6565 | . 6275 |
| 2065 | $\cdots 3242$ | 4045 | 3844 | 6570 | 6550 |
| 2070 | $\cdot 3293$ | 4050 | ${ }^{4} 4032$ | 6575 | . 6746 |
| 2075 | -3328 | 4055 | ${ }^{4} 4206$ | 6580 | . 6872 |
| 2080 | -3349 | 4060 | -4347 | 6585 | -6963 |
| 2085 | -3364 | 4065 | -4450 | 6590 | $\cdot 7004$ |
| 2090 | $\cdot 3372$ | 4070 | -4539 | 6595 | $\cdot 7007$ |
| 2095 | -3372 | 4075 | 4600 | 7070 | $\cdot 6886$ |
| 2525 | $\cdot 2597$ | 4080 | -4639 | 7075 | $\cdot 7137$ |
| 2530 | -2744 | 4085 | -4668 | 7080 | $\cdot 7303$ |
| 2535 | $\cdot 2882$ | 4090 | -4681 | 7085 | $\cdot 7428$ |
| 2540 | $\cdot 3014$ | 4095 | -468I | 7090 | $\cdot 7485$ |
| 2545 | $\cdot 3134$ | 4545 | -4071 | 7095 | $\cdot 7486$ |
| 2550 | - 3250 | 4550 | . 4296 | 7575 | $\cdot 7439$ |
| 2555 | -3359 | 4555 | -4504 | 7580 | $\cdot 7645$ |
| 2560 | -3450 | 4560 | -4672 | 7585 | $\cdot 7809$ |
| 2565 | -3518 | 4565 | -4795 | 7590 | $\cdot 7887$ |
| 2570 | $\cdot 3577$ | 4570 | . 4897 | 7595 | $\cdot 7881$ |
| 2575 | $\cdot{ }^{3617}$ | 4575 4580 | - 4965 | 8080 8085 | .7882 .8077 |
| 2580 | $\cdot 3643$ | 4580 | -5008 | 8085 | -8077 |
| 2585 | $3{ }^{3} \mathbf{3 6 6 1}$ | 4585 | -5038 | 8090 | .8173 |
| 2590 | -3669 | 4590 | - 5052 | 8095 | .8161 |
| 2595 | -3669 | 4595 | . 5052 | 8585 | .8310 |
| 3030 3035 | - 29.14 | 5050 5055 | .4564 .4819 | 8590 8595 | .8429 .8405 |
| 3035 | $\cdot 3073$ | 5055 | -4819 | 8595 | $\cdot 8405$ |

For explanation see pp. 31,32

| Single Payment to secure \&1 at the Death of the Last of Two Lives according to the INSTITUTE OF ACTUARIES HEALTHY MALES TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | $3 \frac{1}{2} \%$ | $4 \%$ | Ages | $3 \%$ | 312\% | $4 \%$ |
| 1010 | $\cdot 1761$ | - 1350 | '1043 | 3055 | $\cdot 3615$ | $\cdot 3103$ | $\cdot 2676$ |
| 1020 | -198I | - 1548 | -1218 | 3060 | $\cdot 3703$ | $\cdot 3196$ | - 2773 |
| 1030 | -2167 | -1721 | -1376 | 3070 | $\cdot 3826$ | -3328 | -2911 |
| IC 40 | $\cdot 2330$ | -1879 | -1527 | 3080 | $\cdot 3888$ | $\cdot 3395$ | - 2983 |
| 10 50 | $\cdot 2467$ | -2016 | -1662 | 3090 | $\cdot 3914$ | -3424 | -3015 |
| 1060 | $\cdot 2568$ | '2121 | -1769 | 3535 | $\cdot 3278$ | $\cdot 2758$ | $\cdot 2329$ |
| 10 70 | -2630 | -2187 | -1838 | 3540 | -3469 | $\cdot 2945$ | -2508 |
| 1080 | -2659 | -2219 | ${ }^{-1873}$ | 3545 | $\cdot 3645$ | - 3120 | - 2680 |
| 10 90 | -2671 | -2233 | - 1888 | 3550 | -3800 | $\cdot 3276$ | -2835 |
| 1515 | -2005 | -1568 | - 1235 | 3555 | '3931 | -3411 | -2972 |
| 1520 | -2132 | -1683 | '1338 | 3560 | 4038 | $\cdot 3524$ | -3088 |
| 1525 | -2245 | -1787 | -1432 | 3570 | 4184 | -3680 | -3252 |
| 1530 | -2354 | -1890 | - 1526 | 3580 | 4255 | -3758 | '3336 |
| 1535 | - 2455 | -1986 | '1618 | 3590 | 4285 | -3793 | 3373 |
| 1540 | -2548 | -2088 | $\cdot 1705$ | 4040 | - 3697 | -3167 | $\cdot 2723$ |
| 1545 | -2634 | $\cdot 2163$ | $\cdot 1789$ | 4045 | -3911 | -3380 | -2931 |
| 1550 | -2711 | -224I | -1866 | 4050 | 4101 | -3573 | 3123 |
| 1555 | $\cdot 2777$ | -2309 | -1935 | 4055 | 4263 | -3740 | -3292 |
| 1560 | $-2832$ | $\cdot 2367$ | - 1995 | 4060 | -4396 | 3879 | 3435 |
| 1570 | -2909 | - 2449 | -208I | 4070 | -4574 | ${ }^{4} 8070$ | -3635 |
| 1580 | -2946 | $\cdot 2489$ | $\cdot 2125$ | 4080 | $\cdot 4659$ | ${ }^{4}{ }^{164}$ | -3736 |
| 1590 | -2960 | $\cdot 2506$ | $\cdots$ | 4090 | -4694 | ${ }^{4203}$ | 3780 |
| 2020 | $\cdot 2281$ | - 1819 | $\stackrel{-1459}{ }$ | 4545 | $\cdot 4167$ | $\cdot 3637$ | 3183 |
| 2025 | $\cdot 2515$ | $\cdot 1942$ | $\cdot 1571$ | 4550 | . 4402 | 3875 | $\bigcirc 3419$ |
| 2030 | -2545 | -2064 | -1684 | 4555 | 4606 | ${ }^{4} 4085$ | $\cdot 3632$ |
| 2035 | -2666 | -2181 | -1794 | 4560 | -4774 | -4261 | 3814 |
| 2040 | -2778 | $\cdot 2290$ | $\cdots{ }^{-1898}$ | 4570 | . 5001 | 4504 | 4069 |
| 2045 | $\cdot 2881$ | $\cdot 2392$ | -1998 | 4580 | -5109 | -4623 | 4197 |
| 2050 | -2972 | - 2485 | $\cdot 2091$ | 4590 | . 5153 | $\cdot 4672$ | -4251 |
| 2055 | -3051 | $\cdot 2567$ | -2174 | 5050 | ${ }^{4} 4685$ | 4162 | $\cdot 3707$ |
| 2060 | -3118 | $\stackrel{2637}{ }$ | -2246 | 5055 | -4938 | -4424 | '3973 |
| 2070 | $\cdot 3212$ | -2738 | $\stackrel{.2352}{ }$ | 5060 | $\cdot 5152$ | -4648 | ${ }^{4} 4203$ |
| 2080 | $\cdot 3260$ | $\cdot 2791$ | - 2410 | 5070 | . 5445 | $\cdot 4963$ | ${ }^{+} 4534$ |
| 2090 | 3281 | -2814 | - 2435 | 5080 | '5586 | -5211 | -4700 |
| 2525 | '2571 | '2086 | -1702 | 5090 | -5643 | -5182 | 4771 |
| 2530 | $\cdot 2725$ | - 2230 | -1835 | 5555 | '5247 | $\stackrel{4744}{ }$ | -4298 |
| 2535 | - 2868 | - 2368 | $\stackrel{-1964}{ } \cdot$ | 5560 | $\cdot 5515$ | $\cdot 5026$ | ${ }^{4} 4589$ |
| 2540 | $\cdot 3000$ | $\cdot 2497$ | -2088 | 5570 55 | $\cdot 5897$ | $\cdot 5436$ | . 5020 |
| 2545 | -3121 | -2617 | -2205 | 5580 | -6085 | -5642 | -5242 |
| 2550 | -3227 | $\cdot 2724$ | $\cdot 2312$ | 5590 | -6162 | -5729 | -5337 |
| 2555 | -3318 | $\cdot 2818$ | -2407 | 6060 | -5843 | -5372 | $\cdot 4946$ |
| 2560 | $\cdot 3393$ | $\cdot 2897$ | - 2489 | 6070 | . 6333 | $\cdot 5898$ | -5501 |
| 2570 | - 3498 | $\cdot 3010$ | $\cdot 2608$ | 6080 | . 6586 | -6177 | $\cdot 5802$ |
| 2580 | -3551 | $\cdot 3068$ | $\cdot 2670$ | 6090 | -6693 | $\cdot 6297$ | -5933 |
| 2590 | -3574 | '3093 | $\cdot 2698$ | 7070 | '7061 | -6685 | -6335 |
| 3030 | -2905 | $\cdot 2400$ | -I99I | 7080 | 7496 | '7165 | $\cdot 6853$ |
| 3035 | $\cdot 3076$ | $\cdot 2564$ | -2146 | 7090 | 7700 | $\checkmark 7393$ | 7105 |
| 3040 30 | -3235 | . 2719 | $\cdot 2295$ | 8080 | . 8125 | 7862 | 77611 |
| 3045 30 | $\cdot 3380$ | - 2863 | - 2436 | 8090 | . 84771 | .8251 4.858 | . 8036 |
| 3050 | -3506 | -2992 | -2564 | 9090 | -8948 | . 8789 | . 8634 |

For explanation see pp. 31, 32

| Annual Payment during the Continuance of either of Two Lives to secure $£ 1$ at the Last Death according to the INSTITUTE OF ACTUARIES HEALTHY MALES TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | 3\% | 3 $\frac{1}{2} \%$ | $4 \%$ | Ages | $3 \%$ | 31 $\%$ | $4 \%$ |
| 1010 | $\cdot 0062$ | -0053 | -0045 | 3055 | -0165 | -0152 | $\cdot 0141$ |
| 1020 | -0072 | -0062 | -0053 | 3060 | -0171 | -0159 | -0148 |
| 1030 | '0081 | -0070 | -006I | 3070 | -181 | -0169 | $\cdot 0158$ |
| IO 40 | -0088 | -0078 | -0069 | 3080 | -0185 | -0174 | -0164 |
| 10 50 | -0095 | -0085 | -0077 | 3090 | -0187 | -176 | -0166 |
| 10 60 | -0101 | -0091 | -0083 | 3535 | -0142 | -0129 | -0117 |
| 1070 | $\bigcirc 0104$ | -0095 | -0087 | 3540 | -0155 | -141 | -0129 |
| 1080 | $\bigcirc 105$ | -oog6 | -0089 | 3545 | -0167 | -0153 | -141 |
| 1090 | -0106 | -0097 | -0090 | 3550 | -0178 | -165 | -0152 |
| 1515 | $\cdot 0073$ | -0063 | -0054 | 3555 | -0189 | -0175 | .0163 |
| 1520 | -0079 | -0068 | '0059 | 3560 | -0197 | -184 | $\cdot 0172$ |
| 1525 | -0084 | $\bigcirc 0074$ | -0064 | 3570 | -0209 | -0197 | $\bigcirc 185$ |
| 1530 | -0090 | -0079 | -0069 | 3580 | -0216 | ${ }^{\circ} \mathrm{O} 204$ | -0193 |
| 1535 | -0095 | -0084 | -0074 | 3590 | -0218 | -0207 | -0196 |
| 1540 | -0100 | -0089 | -0079 | 4040 | -0171 | -0157 | -0144 |
| 1545 | -0104 | -0093 | $\stackrel{0084}{ }$ | 4045 | $\bigcirc 187$ | -0173 | - 0160 |
| 1550 | . 0108 | -0098 | -0088 | 4050 | ${ }^{\circ} 0203$ | -188 | -0175 |
| 1555 | $\bigcirc 0112$ | -0102 | -0092 | 4055 | -0216 | $\bigcirc{ }^{\circ} \mathrm{O} 22$ | -189 |
| 1560 | -0115 | -105 | -0096 | 4060 | $\bigcirc 0228$ | $\bigcirc 0214$ | ${ }^{\circ} \mathrm{O201}$ |
| 1570 | '0120 | -110 | - 0 Ioi | 4070 | -0246 | ${ }^{\circ} \mathrm{O} 232$ | -0220 |
| 1580 | -122 | - O 12 | - 0104 | 4080 | -0254 | -0241 | -0229 |
| 1590 | $\cdot 0122$ | . 0113 | -0105 | 4090 | $\cdot 0258$ | $\bigcirc 0245$ | -0234 |
| 2020 | -0086 | -0075 | -0066 | 4545 | -0208 | -0193 | -0180 |
| 2025 | -0093 | -0082 | -0072' | 4550 | -0229 | -0214 | -0200 |
| 2030 | -0099 | -0088 | -0078 | 4555 | -0249 | -0234 | -0219 |
| 2035 | -0106 | -0094 | '0084 | 4560 | - 0266 | -0251 | -0237 |
| 2040 | - 0112 | -100 | -0090 | 4570 | -0291 | -0277 | -0264 |
| 2045 | -0118 | -106 | -0096 | 4580 | -0304 | $\bigcirc 0291$ | . 0278 |
| 2050 | -0123 | $\bigcirc{ }^{\circ} \mathrm{OII} 2$ | -0102 | 4590 | -0310 | -0297 | -0284 |
| 2055 | '0128 | -0117 | '0107 | 5050 | -0257 | -024I | '0227 |
| 2060 | - 0132 | $\cdot \mathrm{Ol21}$ | '0111 | 5055 | -0284 | -0268 | -0254 |
| 2070 | -OI38 | - 0127 | -0118 | 506 | -0310 | -0294 | -0279 |
| 2080 | $\cdot \mathrm{OI} 41$ | -131 | $\bigcirc$ | 5070 | - 0348 | -0333 | -0319 |
| 2090 | '0142 | -132 | '0124 | 5080 | -0369 | - 0354 | .034I |
| 2525 | - 0101 | -0089 | '0079 | 5090 | -0377 | -0364 | -0351 |
| 2530 | - 0109 | -0097 | '0086 | 5555 | -0322 | -0305 | -0290 |
| 2535 | -0117 | - 0105 | -0094 | 5560 55 | -0358 | -0342 | -0326 |
| 2540 | -0125 | -0113 | -0101 | 5570 5580 | .0419 | .0403 | -0388 |
| 2545 25 | -0132 | - 0120 | $\stackrel{-109}{\cdot 016}$ | 5580 | . 0453 | -0438 | -0424 |
| 2550 | -O139 | -0127 | -0116 | 5590 | -0468 | -0454 | -0440 |
| 2555 | -O145 | - 0133 | -0122 | 6060 | -0409 | -0393 | -0376 |
| 2560 | -0150 | -OI38 | '0127 | 6070 | .0503 | . 0486 | -0470 |
| 2570 | -0157 | -0146 | 'O136 | 6080 | -0562 | -0546 | -0532 |
| 2580 | -0160 | - 0150 | -O140 | 6090 | -0590 | .0575 | -0561 |
| 2590 | -0162 | -0152 | -0142 | 7070 | -0700 | .0682 | -0665 |
| 3030 | -0119 | -0107 | -0096 | 7080 | -0872 | -0855 | -0838 |
| 3035 | -0129 | -0117 | -OIO5 | 7090 | -0975 | -0959 | -0944 |
| 3040 | - 0139 | -0126 | -0115 | 8080 | $\cdot{ }^{-1262}$ | - 1244 | -1225 |
| 3045 | $\bigcirc$ | $\cdot 0136$ | -0124 | 8090 | $\cdot \cdot 1613$ | -1595 | $\cdot 1577$ |
| 3050 | $\bigcirc$ | - 0144 | - 0133 | 9090 | $\cdot 2478$ | - 2454 | $\cdot 2431$ |

For explanation see pp. 31, 32

| Value of the Reversion to a Perpetuity on the Death of the FIRST of Two Lives |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | NORTHAMPTON |  |  | healthy malks |  |  | $\mathrm{Agex}^{\text {g }}$ |
|  | $3 \%$ | $4 \%$ | 5\% | $3 \%$ | 312 \% | $4 \%$ |  |
| 1515 | 18.113 | 11.589 | 8.036 8.768 | 13.467 | ${ }^{10 \cdot 208}$ | 7.957 |  |
| 2020 2525 | 19.200 19.950 | 12.465 13.056 | 8.768 9.236 | 14.752 15.763 | ${ }_{12}^{11} 31216$ | 8.919 9.654 | 2020 2525 |
| 3030 | $20 \cdot 744$ | ${ }_{13}{ }^{2} 687$ | 9.745 | 16.960 | 13.215 | $10.56{ }^{\circ}$ | 3030 |
| 3535 | 21.6II | ${ }_{14} \times 388$ | 10 320 | 18.238 | 14.338 | 11.550 | 3535 |
| 4040 | $22 \cdot 569$ | 15.180 | 10.984 | 19.623 | 15.572 | 12.652 | 4040 |
| 4545 | 23.557 | ${ }^{16}$ 6.10 | 11.688 | ${ }^{21} 1.171$ | 16.974 | 13.924 | 4545 |
| 5050 55 55 | 24.619 25.652 | 16.919 17821 | 12.478 13.265 | ${ }^{22} 27.71$ | ${ }^{18} 8.459$ | 15.290 | 50 50 |
| 65 55 | 25.652 26.727 | 17821 18.774 | 13.265 14.112 | 24.463 26.134 | ${ }^{21} \cdot 5 \cdot 58$ | ${ }_{18} 1221$ | 65 65 |
| 6565 | 27.862 | 19799 | 15.040 | 27.681 | 23.060 | 19.623 | 6565 |
| 7070 | 29.072 | 20.913 | 16.070 | 29.111 30.36 | ${ }^{24} 4.434$ | 20.944 | 7070 |
| 7575 | 30.219 | ${ }^{21} 9.985$ | 17.083 | 30.346 | 25.632 | ${ }^{22} 2107$ | 7575 |
| 8080 8585 | 31211 32.024 | 22.932 23.661 | 17.982 18.744 | 31.285 31931 | $26 \cdot 549$ $27 \cdot 184$ | 23.003 23.627 | 8080 8585 |
| Value of the Reversion to a Perpetuity on the Death of the LAST of Two Lives |  |  |  |  |  |  |  |
| Ages | NORTHAMPTON |  |  | healthy males |  |  | Ages |
|  | $3 \%$ | 4 \% | 5 \% | $3 \%$ | 31 \% | 4 \% |  |
| 1515 | ${ }^{9} 9318$ | 4.829 | 2.784 3 | 6.883 7.83 | 4.636 | 3.210 | 1515 |
| 2020 | ${ }^{10} 1980$ | 5.469 | 3.218 | 7.830 8.828 | $5 \cdot 378$ | $3 \cdot 793$ | 2020 |
| 2525 | ${ }_{11} 088$ | 6.068 | $3 \cdot 630$ | 8.828 | $6 \cdot 169$ | $4 \cdot 424$ | 2525 |
| 3030 | 12.078 | 6751 | $4^{\prime \prime} 11$ | 9.972 | 7.096 | $5 \cdot 178$ | 3030 |
| 3535 | $13 \cdot 179$ | 7.534 | $4 \cdot 676$ | 11254 | $8 \cdot 155$ | $6 \cdot 056$ | 3535 |
| 4040 | 14.401 | $8 \cdot 426$ | 5.342 | 12.69 I | 9.366 | 7.078 | 4040 |
| 4545 | ${ }^{15} 5725$ | 9.424 | ${ }^{6 \cdot 102}$ | I4.308 | 10.755 | 8.275 | 4545 |
| 5050 | 17.175 18.714 | ${ }^{10 \cdot 553}$ | 6.984 | 16.084 | 12.309 | 9.638 | 5050 |
| 5555 | 18.714 | ${ }_{11} 1777$ | 7.971 | ${ }^{18} 8.10$ | ${ }^{14}{ }^{\text {\% }}$. 89 |  | 5555 |
|  | $20 \cdot 385$ | 13.148 | $9 \cdot 104$ | 20.060 | 158 |  |  |
| 6565 | 22.196 | 14.639 | 10.408 | $22 \cdot 149$ | 17.810 | 14.637 | 656 |
| 7070 7575 | 24.126 26.049 | 16.365 18.053 | 11.884 13.429 | 24.243 $26 \cdot 198$ | ${ }_{21}^{19} .669$ | 168478 18.228 | 70 75 75 |
| 8080 | $27 \cdot 893$ | ${ }_{19}{ }^{\prime} 782$ | 14.988 | 27.897 | 23.250 | 19.788 | 8080 |
| 8585 | 29.402 | $2 \mathrm{~T} \cdot 253$ | 16.314 | 29.258 | $24 \cdot 564$ | 21.058 | 8585 |

For explanation see p. 32

| $\underset{x}{\operatorname{Age}} \text { of }$ | $\underset{y}{\text { Age of }}$ | Northampton | Cardisle | Healthy Males |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $3 \%$ | $3 \%$ | $3 \%$ | 3 $\frac{1}{2} \%$ | $4 \%$ |
| 45 | 20 | 7.271 | 7.487 | 7.849 | $6 \cdot 790$ | 5.904 |
| 45 | 25 | 6.650 | 6.711 | 7.025 | $6 \cdot 126$ | $5 \cdot 366$ |
| 45 | 30 | 5.998 | $5 \cdot 906$ | 6.136 | 5:397 | $4 \cdot 766$ |
| 45 | 35 | 5.315 | $5 \cdot 102$ | $5 \cdot 225$ | 4.639 | $4 \cdot 132$ |
| 45 | 40 | 4.612 | 4.275 | $4 \cdot 314$ | 3.868 | 3.479 |
| 60 | 20 | 10.042 | 11.912 | 12.392 | 10.940 | 9•702 |
| 60 | 30 | $8 \cdot 544$ | $10 \cdot 027$ | 10.382 | $9 \cdot 284$ | 8.332 |
| 60 | 35 | 7.711 | 9.023 | $9 \cdot 233$ | 8.316 | 7.513 |
| 60 60 | 40 50 | $6 \cdot 822$ | 7.919 | $8 \cdot 006$ | 7.265 | 6.611 |
| 60 | 50 | 4.975 | $5 \cdot 574$ | 5.410 | 4.990 | 4.612 |
| 75 | 30 | 12.157 | 14.343 | 15.008 | 13.665 | 12.486 |
| 75 | 40 | 10.191 | 12.028 | $12 \cdot 389$ | II 422 | $10 \cdot 557$ |
| 75 | 50 | 7964 | $9 \cdot 281$ | $9 \cdot 281$ | $8 \cdot 672$ | $8 \cdot 117$ |
| 75 | 60 | $5 \cdot 588$ | 5.993 | $6 \cdot 003$ | $5 \cdot 688$ | 5.395 |
| 75 | 70 | 3.135 | $3 \cdot 319$ | 3.147 | 3.023 | $2 \cdot 906$ |

Value of an Annuity during the Life of $y$, who is to be nominated at the Death of $x$

| $\underset{x}{\text { Age of }}$ | Age of $y$ at Death of $x$ | Northampton | Oarlisle | Healthy Males |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $3 \%$ | $3 \%$ | $3 \%$ | 3 $\frac{1}{2} \%$ | $4 \%$ |
| 45 | 10 | 12.393 | 12.473 | 12.994 | 10.762 | $8 \cdot 998$ |
| 45 | 25 | 10.763 | 11.024 | I I 387 | $9 \cdot 564$ | $8 \cdot 094$ |
| 45 | 30 | $10 \cdot 253$ | 10.460 | 10.782 | $9 \cdot 103$ | $7 \cdot 740$ |
| 45 | 35 | 9.690 | 9.888 | 10.120 | $8 \cdot 591$ | $7 \cdot 341$ |
| 45 | 40 | 9.066 | $9 \cdot 232$ | 9•391 | $8 \cdot 018$ | $6 \cdot 888$ |
| 60 | 10 | 14.863 | $16 \cdot 308$ | 16.918 | 14.544 | 12.598 |
| 60 | 30 | 12.296 | 13.676 | 14.038 | 12.302 | 10.837 |
| 60 | 35 | 11.621 | 12.929 | 13.177 | 11.610 | 10.279 |
| 60 | 40 | 10.873 | 12.07 I | 1 $2 \cdot 228$ | 10.836 | $9 \cdot 644$ |
| 60 | 50 | $9 \cdot 218$ | 10.18I | 10.021 | $8 \cdot 989$ | $8 \cdot 091$ |
| 75 | 10 | 17.751 | 19.863 | 20.708 | $18 \cdot 340$ | 16.348 |
| 75 | 30 | 14.685 | $16 \cdot 657$ | $17 \cdot 183$ | 15.512 | 14.063 |
| 75 | 50 | II 010 | 12.400 | 12.266 | I 1. 335 | 10.499 |
| 75 | 60 | $8 \cdot 831$ | $9 \cdot 311$ | $9 \cdot 252$ | $8 \cdot 657$ | 8-II 3 |
| 75 | 70 | $6 \cdot 338$ | $6 \cdot 582$ | $6 \cdot 305$ | 5.968 | $5 \cdot 657$ |

For explanation see p. 33

| Single Payment to secure $£ 1$ at the Death of $x$ provided he dies before $y$, according to the NORTHAMPTON TABLE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | Ages | $3 \%$ | Ages | $3 \%$ |
| $\begin{array}{ll}x & y \\ 15 & 15\end{array}$ |  | $\begin{array}{cc}x & y \\ 50 \\ 50\end{array}$ |  | $\begin{array}{ll}x & y \\ 65 & 35\end{array}$ |  |
| $\begin{array}{ll}15 & 15 \\ & 10\end{array}$ | . 26366 | 50 | 477767 | 6535 | - 59587 |
| 2010 | 30838 | 5030 | -45221 | 6540 | -57855 |
| $20 \quad 20$ | $\cdot 27962$ | 5040 | -41378 | 6545 | -55766 |
| $25 \quad 15$ | -31846 | $50 \quad 50$ | $\cdot 35853$ | 6550 | - 53073 |
| $25 \quad 25$ | $\cdot 29054$ | $55 \quad 15$ | $\cdot 53896$ | 6555 | -49904 |
| 3010 | -36038 | $55 \quad 25$ | $\cdot 51226$ | 6560 | -45822 |
| 3020 | $\cdot 32987$ | 5535 | -48319 | 6565 | -40576 |
| 3030 | 30210 | 5545 | -43830 | 70 Io | $\cdot 71527$ |
| 3515 | -37643 | 5555 | -37357 | 70 | $\cdot 70284$ |
| 3525 | $\cdot 34755$ | 6010 | -60306 | $70 \quad 20$ | $\cdot 68822$ |
| 3535 | -31472 | $60 \quad 20$ | -57287 | $70 \quad 25$ | -68087 |
| 4010 | -42717 | 6030 | -55136 | $70 \quad 30$ | $\cdot 67236$ |
| 4020 | -39579 | 6040 | -51734 | 7035 | -66139 |
| 4030 | -36815 | 6050 | -46567 | 7040 | . 64650 |
| $40 \quad 40$ | -32868 | 6060 | $\cdot 38923$ | 7045 | -62843 |
| 4515 | -45053 | 6510 | . 65695 | 7050 | -6046I |
| $45 \quad 25$ | -42208 | $65 \quad 15$ | -64308 | 7055 | -57691 |
| 4535 | -38980 | 6520 | -62784 | 7060 | -54027 |
| 4545 | $\cdot 34306$ | $65 \quad 25$ | -61920 | 7065 | -49029 |
| 50 10 | -50891 | 6530 | $\cdot 60899$ | $70 \quad 70$ | $\cdot 42338$ |
| Single Payment to secure $£ 1$ at the Death of $x$ provided he dies before $y$, according to the CARLISLE TABLE |  |  |  |  |  |
| Ages | $3 \%$ | Ages | $3 \%$ | Ages | $3 \%$ |
| $\begin{array}{cl}\text { x } & \stackrel{y}{y} \\ \text { I5 } \\ \text { I5 }\end{array}$ | 210I | $\begin{array}{cc}x & \stackrel{y}{c} \\ 50 \\ 50\end{array}$ | -4681 | $\begin{array}{cc}x & y \\ 65 & 35\end{array}$ | $\cdot 6236$ |
| 20 10 | -2503 | 5030 | -4400 | 6540 | -6088 |
| 2020 | -2234 | 5040 | -3965 | 6545 | -5940 |
| 2515 | -2705 | 5050 | -3260 | 6550 | -5644 |
| $25 \quad 25$ | -2391 | 5515 | -5409 | 6555 | -5137 |
| 3010 | -3190 |  | -52II | 6560 | 4534 |
| 3020 | -2928 | 5535 | -493I | 6565 | -3973 |
| $30 \quad 30$ | $\cdot 2556$ | 5545 | -4454 | 7010 | $\cdot 7276$ |
| $35 \quad 15$ | $\cdot 3427$ | 5555 | - 3528 | 7015 | $\cdot 7205$ |
| $35 \quad 25$ | $\cdot 3136$ | 60 10 | -6147 | 7020 | -7161 |
| 3535 | -2710 | 6020 | -5986 | $70 \quad 25$ | $\cdot 7082$ |
| 4010 | -3959 | 6030 | -5766 | 7030 | -6986 |
| $40 \quad 20$ | -3733 | 6040 | -5472 | 7035 | -6908 |
| 4030 | -3388 | 6050 | -4917 | 7040 | -6788 |
| $40 \quad 40$ | -2891 | 6060 | -3792 | 7045 | -6692 |
| $45 \quad 15$ | -4262 | 65 10 | -6673 | $70 \quad 50$ | . 6475 |
| $45 \quad 25$ | -4018 | 6515 | -6592 | $70 \quad 55$ | . 6034 |
| 4535 | -3636 | 6520 | .653I | 7060 | -5464 |
| 4545 | -3052 | 6525 | - 6439 | 7065 | -4956 |
| 5010 | 4880 | 6530 | . 6332 | $70 \quad 70$ | -4190 |

For explanation see p. 34

Single Payment to secure $£ 1$ at the Death of $x$ provided he dies before $y$, according to the INSTITUTE OF ACTUARIES HEALTHY MALES TABLE

| Ages | $3 \%$ | 3 $2 \%$ | $4 \%$ | Ages | $3 \%$ | $3 \frac{1}{2} \%$ | $4 \%$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{cc} x & y \\ 15 & 15 \end{array}$ | -1961 | -1726 | -1530 | $\begin{array}{cc}x & y \\ 45 & \\ \text { I5 }\end{array}$ | $\cdot 4483$ | 4091 | 3746 |
| 1525 | -1638 | -1467 | -1322 | 4520 | -4343 | - 3969 | -3638 |
| 1535 | -1318 | -1204 | - 1105 | 4525 | -4211 | -3856 | - 3540 |
| 1545 | -1014 | -0944 | $\cdot 0882$ | 4530 | ${ }^{4} 4022$ | -3693 | -3399 |
| 1555 | -0730 | $\cdot 0690$ | -0655 | 4535 | -3778 | -3480 | $\cdot 3213$ |
| 1570 | -0359 | -0347 | -0336 | 4540 | $\cdot 3466$ | $\cdot 3207$ | $\cdot 2975$ |
| 2015 | $\cdot 2326$ | -2101 | -1831 | 4545 | $\cdot 3083$ | - 2870 | $\cdot 2678$ |
| 2020 | - 2148 | -1913 | $\cdot 1715$ | 4555 | -2217 | -2094 | -1982 |
| 2030 | -1785 | -1619 | -1475 | 4570 | -1068 | -1033 | -1000 |
| 2040 | -1412 | -1306 | -1212 | 5015 | $\cdot 5045$ | -4655 | -4307 |
| 2050 | -106I | -0999 | -0943 | 5020 | $\cdot 4917$ | -4541 | $\cdot 4205$ |
| 2060 | -0744 | -0713 | -0683 | 5025 | $\cdot 4808$ | 4445 | -4120 |
| 2070 | . 0476 | -046I | - 0447 | 5030 | 4647 | $\cdot 4303$ | -3995 |
| 2515 | -2662 | -2358 | -2101 | 5035 | $\cdot 4433$ | 4115 | - 3828 |
| 2520 | $\cdot 2482$ | - 2209 | -1979 | 5040 | $\checkmark 4146$ | '3861 | -3603 |
| 2525 | $\cdot 2296$ | -2059 | -1857 | 5045 | '3769 | $\cdot 3524$ | $\cdot 3302$ |
| 2535 | - 1860 | - 1697 | - 1556 | 5050 | $\bigcirc$ | -3121 | - 2940 |
| 2545 | $\cdot \mathrm{T} 416$ | -1318 | -123I | 5060 | -2303 | - 2196 | -2097 |
| 2555 | $\cdot \mathrm{IOII}$ | -0959 | -09II | 5070 | $\begin{array}{r}\cdot 1388 \\ \cdot \\ \hline\end{array}$ | -1342 | -1300 |
| 2570 | -0520 | -0504 | -0489 | 5515 | $\cdot 5643$ | -5268 | -4925 |
| 3015 | -3057 | -2720 | -2434 | 5520 | $\cdot 5524$ | 5160 | -4828 |
| 3020 | -2881 | -2574 | -2312 | 5525 | $\cdot 5439$ | -5082 | -4758 |
| 3025 | $\cdot 2697$ | $\cdot 2422$ | -2187 | 5530 | -5304 | 4961 | -4649 |
| 3030 | -2470 | -2234 | -2031 | 5535 | -5124 | - 4800 | $\cdot 4505$ |
| 3040 | -1955 | -1799 | -1662 | 5540 | -4877 | -4579 | 4305 |
|  | -1430 | -1342 | - 1262 | 5545 | -4531 | -4266 | $\cdot 4023$ |
| 3060 | -0970 | -0927 | -0886 | 5550 | $\cdot 4092$ | - 3868 | $\cdot 3661$ |
| 3070 | -0603 | -0585 | $\cdot 0567$ | 5555 | - 3563 | $\cdot 3384$ | $\checkmark 3219$ |
| 3515 | $\cdot 3486$ | $\cdot 3123$ | -28II | 5570 | - 1850 | $\cdot 1790$ | - 5734 |
| 3520 | -3321 | -2983 | -2693 | 6015 | -6264 | -5911 | -5588 |
| 3525 | -3148 | -2841 | - 2573 | 6020 | .6154 | -5809 | -5493 |
| 3530 | $\cdot 2922$ | -2650 | $\cdot 2412$ | 6025 | . 6086 | -5747 | -5436 |
| 3535 | -2656 | - 2424 | - 2221 | 6030 | ${ }^{-5976}$ | . 5647 | . 5345 |
| 3545 | -2039 | -1892 | -1762 | 6035 | . 5832 | 5516 | 5226 |
| 3555 | $\cdot 1426$ | -1349 | -1277 | 6040 | -5630 | 5331 | -5057 |
| 3570 | -0705 | -0683 | -0662 | 6045 | '5332 | - 5060 | $\stackrel{4808}{ }$ |
| 4015 | $\cdot 3956$ | $\cdot 3574$ | $\cdot 3243$ | 6050 | $\stackrel{4934}{ }$ | -4694 | -4471 |
| 4020 | -3804 | -3443 | $\cdot 3129$ | 6060 | -3806 | - 3650 | 3504 |
| 4025 | $\cdot 3651$ | -3314 | $\cdot 3019$ | 6070 | $\stackrel{.}{ } \cdot 2484$ | $\cdot 2409$ | . 2336 |
| 4030 | $\cdot 3438$ | -3132 | -2864 | 7020 | '7370 | $\cdot 7098$ | . 6840 |
| 4035 |  | -2905 | -2669 | 7030 | 7263 | -6995 | . 6744 |
| 4040 | $\cdot 2858$ | $\cdot 2633$ | - 2433 | 7040 | $\cdot 7058$ | . 6803 | -6563 |
| 4050 | $\cdot 2121$ | -1986 | -1863 | 7050 | $\cdot 6598$ | -637 | -6555 |
| 4060 | -1408 | -1342 | -1280 | 7060 | '568I | -5503 | -5335 |
| 4070 | -0844 | $\bullet 0817$ | -0791 | 7070 | $\cdot 4239$ | 4131 | -4028 |

For explanation see p. 34

Value of an Annuity for the Joint Continuance of Three Lives of Equal Ages according to the NOBTHAMPTON TABLE

| Ages | $4 \%$ | Ages | $4 \%$ | Ages | $4 \%$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 101010 | 12.200 | 303030 | 9.22I | 505050 | $6 \cdot 317$ |
| 11 II II | 12.043 | 313131 | 9.099 | 515151 | $6 \cdot 161$ |
| $12 \mathrm{I2} 12$ | 11.865 | 323232 | 8.975 | 525252 | ${ }^{6.011}$ |
| 131313 | 11.678 | 333333 | $8 \cdot 848$ | 535353 | $5 \cdot 859$ |
| 141414 | 11.481 | 343434 | $8 \cdot 718$ | 545454 | 5705 |
| 151515 | 11.274 | 353535 | $8 \cdot 585$ |  | $5 \cdot 550$ |
| 161616 | 11.056 | 363636 | $8 \cdot 448$ | 565656 | $5 \cdot 393$ |
| 17 <br> 17 <br> 18 | 10.845 | 373737 | $8 \cdot 309$ | 575757 | 5.235 |
| 181818 | 10.656 | 383838 | $8 \cdot 165$ | 585858 | 5.076 |
| 19 19 19 | 10.490 | 393939 | 8.017 | 595959 | 4.916 |
| 202020 | $10 \cdot 342$ | 404040 | 7.865 | 606060 |  |
| 212121 | 10.222 | $4 \mathrm{4I} 4 \mathrm{I}$ | 7.714 | 616161 | $4 \cdot 593$ |
| 222222 | $10 \cdot 118$ | 424242 | $7 \cdot 567$ | 626262 | 4.432 |
| 232323 | 10.012 | 434343 | $7 \cdot 423$ | 636363 | $4 \cdot 263$ |
| 242424 | 9.905 | 444444 | $7 \cdot 276$ | 656565 | 3.914 |
|  | 9.796 |  | $7 \cdot 126$ 6.072 | 707070 757575 | 2.995 2.119 |
| $262626$ | 9.685 | 464646 | 6.972 6.873 | 757575 808080 | $2 \cdot 119$ 1.400 |
|  | $9 \cdot 572$ 9.457 | 474747 484848 | 6.813 6.650 |  | 1.400 .782 |
| 282828 292929 | $9.457-$ 9.340 | 484848 4949 | $6 \cdot 650$ 6.482 | 858585 009090 | $\cdot 782$ .563 |
| 292929 | 9.340 | 494949 | $6 \cdot 482$ | 909090 | $\cdot 563$ |

Value of an Annuity for the Joint Continuance of Three Livee according to the CARLISLE TABLE

| Ages | $3 \%$ | Ages | $3 \%$ | Ages | $3 \%$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 02530 | 8.460 | 255055 | 7.959 | 507580 | 2.499 |
| 12631 | 9.684 | 265156 | $7 \cdot 689$ | 517681 | $2 \cdot 349$ |
| 22732 | 10.257 | 275257 | $7 \cdot 411$ | 527782 | 2.220 |
| 32833 | 10.726 | 285358 | 7-133 | $\begin{array}{llll}53 & 78 & 83\end{array}$ | 2.086 |
| 42934 | 10.930 | 295459 | 6.870 | 547984 | 1.942 |
| 53035 | 11.056 | 305560 | $6 \cdot 626$ | 558085 | 1 796 |
| 63136 | 11.063 | 355661 | 6.405 | 568186 | 1.652 |
| 73237 | $11 \cdot 009$ | 325762 | 6.183 | $\begin{array}{lll}57 & 82 \\ 58\end{array}$ | 1.530 |
| $8333^{8}$ | 10.910 | 335863 | 5.959 | 588388 | -1437 |
| 93439 | $10 \cdot 780$ | 345964 | $5 \cdot 734$ | 598489 | 1-334 |
| 10 3540 | 10.632 | 356065 | $5 \cdot 519$ | 608590 | 1-184 |
| $\begin{array}{ll}11 & 3641\end{array}$ | 10.479 | 366166 | 5.318 | 6I 8691 | 1-109 |
| 123742 | 10.331 | 376267 | $5 \cdot 112$ | 628792 | 1.095 |
| 133843 | $10 \cdot 182$ | 386368 | 4.900 | 638893 | 1-117 |
| 143944 | 10.029 | 396469 | $4 \cdot 673$ | 648994 | 1.III |
| 154045 | 9.877 | 406570 | $4 \cdot 439$ | 659095 | I.064 |
| 164146 | $9 \cdot 732$ | 416671 | $4 \cdot 192$ | 669196 | $1 \cdot 055$ |
| 174247 | $9 \cdot 588$ | 426772 | 3.953 | 679297 | 1.070 |
| 184348 | 9.438 | 436873 | 3.729 | 689398 | I 1 100 |
| 194449 | 9.270 | 446974 | $3 \cdot 520$ | 699499 | I-081 |
| 204550 | 9.088 | 457075 | 3.336 | 7095100 | '946 |
| 21 4651 | 8.887 | 467176 | $3 \cdot 145$ | 7196 ror | $\cdot 756$ |
| 224752 | $8 \cdot 676$ | 477277 | 2.971 | 7297102 | $\cdot 509$ |
| 234853 | 8.454 | 487378 | 2.806 | 7398103 | 230 |
| 244954 | 8.215 | 497479 | $2 \cdot 637$ |  |  |

For explanation see p. 35

| Value of an Annuity for the Joint Continuance of Three Lives of Equal Ages aooording to the INSTITUTE OF ACTUARIES HEALTHY MALES TABLE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | $3 \%$ | $3 \frac{1}{2} \%$ | $4 \%$ | Ages | $3 \%$ | 31 \% | $4 \%$ |
| 0 | 11.534 | 10.633 | 9.850 | 50 | $8 \cdot 621$ | $8 \cdot 320$ | 8.036 |
| 1 | 16.013 | 14.760 | 13.669 | 51 | $8 \cdot 312$ | 8.030 | 7764 |
| 2 | $17.35^{8}$ | 16.004 | 14.824 | 52 | 8.004 | 7.740 | $7 \cdot 492$ |
| 3 | 18.100 | 16.696 | 15.470 | 53 | $7 \cdot 696$ | $7 \cdot 451$ | $7 \cdot 19$ |
| 4 | 18.534 | 17.107 | 15.859 | 54 | 7.389 | 7•161 | 6.945 |
| 5 | 18.833 | 17.393 | $16 \cdot 134$ | 55 | 7.085 | 6.873 | $6 \cdot 673$ |
| 6 | 19.006 | 17.567 | 16.305 | 56 | 6.783 | $6 \cdot 587$ | $6 \cdot 401$ |
| 7 | 19.072 | 17.642 | $16 \cdot 386$ | 57 | 6.483 | $6 \cdot 303$ | $6 \cdot 131$ |
| 8 | 19.046 | 17.633 | 16.391 | 58 | 6.187 | $6 \cdot 021$ | 5.862 |
| 9 | 18.946 | 17.555 | 16.332 | 59 | $5 \cdot 895$ | $5 \% 742$ | $5 \cdot 597$ |
| 10 | 18.787 | 17.424 | 16.222 | 60 | $5 \cdot 607$ | $5 \cdot 468$ | $5 \cdot 334$ |
| 11 | 18.589 | 17.257 | 16.079 | $6 \mathrm{6I}$ | $5 \cdot 325$ | $5 \cdot 197$ | 5.075 |
| 12 | $18 \cdot 361$ | 17.060 | 15.910 | 62 | 5.048 | 4.931 | 4.820 |
| 13 | 18.110 | 16.843 | 15.720 | 63 | 4.777 | 4.671 | $4 \cdot 569$ |
| 14 | ${ }^{17} 7846$ | $16 \cdot 612$ | ${ }^{15} 515$ | 64 | $4 \cdot 512$ | 4.416 | 4.324 |
| 15 | 17.572 | $16 \cdot 372$ | ${ }^{15} 5305$ | 65 | 4.254 | $4 \cdot 167$ | 4.084 |
| 16 | 17.300 | $16 \cdot 132$ | 15.093 | 66 | 4.004 | 3.925 | $3 \cdot 850$ |
| 17 | 17.30 | 15.895 | 14.884 | 67 | 3.760 | 3.690 | $3 \cdot 622$ |
| 18 | 16.773 | 15.669 | 14.683 | 68 | $3 \cdot 525$ | $3 \cdot 462$ | $3 \cdot 401$ |
| 19 | $16 \cdot 526$ | 15452 | 14.492 | 69 | 3.297 | 3.241 | 3.186 |
| 20 | $16 \cdot 293$ | 15.248 | 14.312 | 70 | 3.078 | 3.028 | $2 \cdot 979$ |
| 2 I | 16.073 | 15.055 | ${ }^{14.142}$ | $7{ }^{1}$ | 2.868 | 2.823 | 2.779 |
| 22 | 15.86 I | 14.870 | 13.979 | 72 | 2.665 | 2.626 | 2.587 |
| 23 | 15.656 | 14.69 I | 13.823 | 73 | 2.472 | 2.437 | 2.402 |
| 24 | 15.453 | 14.514 | 13.668 | 74 | $2 \cdot 287$ | $2 \cdot 256$ | $2 \cdot 226$ |
| 25 | 15.251 | 14.337 | 13.513 | 75 | $2 \cdot 111$ | 2.083 | 2.057 |
| 26 | 15.046 | 14.159 | 13.356 | 76 | I 943 | I.919 | I. 896 |
| 27 | 14.837 | 13.976 | 13.194 | 77 | $1 \cdot 784$ | I 764 | ${ }^{1} 743$ |
| 28 | 14.623 | 13.787 | 13.028 | 78 | I 634 | 1.616 | - 598 |
| 29 | 14.404 | 13.593 | 12.857 | 79 | I 492 | I. 476 | 1.460 |
| 30 | 14.179 | 13.394 | $12 \cdot 68 \mathrm{I}$ | 80 | $1 \cdot 358$ | 1.344 | I.331 |
| 3 3 | 13.947 | $13 \cdot 189$ | 12.497 | $8 \mathrm{8I}$ | 1.232 | 1.220 | $1 \cdot 208$ |
| 32 | 13.710 | 12.978 | $12 \cdot 309$ | 82 | $\underline{\mathrm{I}} \mathrm{I} 114$ | $1 \cdot 104$ | I 094 |
| 33 | 13.467 | 12.761 | 12.114 | 83 | $1 \cdot 004$ | .995 | .987 |
| 34 | 13.218 | 12.538 | 11914 | 84 | '901 | -894 | $\cdot 886$ |
| 35 | 12.964 | 12.309 | $1 \mathrm{I} \cdot 708$ | 85 | -806 | 799 | 793 |
| 36 | $12 \cdot 704$ | 12.75 | 11.497 | 86 87 | 7 .7 .635 | .711 | .706 |
| 37 | 12.439 | 11.836 | 11.280 | 87 | . 635 | $\cdot 630$ | . 626 |
| 38 | $12 \cdot 167$ | II 595 | 11.057 | 88 | -559 | -555 | -551 |
| 39 | 11.892 | II 339 | 10.829 | 89 | -490 | -486 | $\cdot 483$ |
| 40 | 11.612 | 11.084 | 10.596 10.358 | 90 | -425 | $\cdot \cdot .423$ | $\cdot 420$ |
| 41 | 11.327 | 10.824 10.549 | $10 \cdot 358$ | 91 | $\cdot 368$ | $\cdot 366$ | $\cdot 363$ |
| 42 | 11.037 | 10.559 10.591 | $10 \cdot 115$ 0.868 | 92 | $\stackrel{-317}{\cdot 266}$ | -315 | -313 |
| 43 | $10 \cdot 746$ 10.449 | 10.291 10.918 | 9.868 9.616 | 93 | $\cdot 266$ | $\cdot 264$ | $\cdot 263$ |
| 44 | 10.449 | 10.018 | $9 \cdot 616$ | 94 | $\cdot 226$ | -225 | $\because 224$ |
| 45 | $10 \cdot 150$ | 9.742 | $9 \cdot 360$ | 95 | $\cdot 187$ | $\cdot 186$ | $\cdot \cdot \mathrm{I} 85$ |
| 46 | $9 \cdot 847$ | $9 \cdot 462$ | 9.101 | 96 | -157 | $\cdot 157$ | -156 |
| 47 | 9.543 | 9.180 | 8.839 | 97 | $\cdot 146$ $\cdot 112$ | -145 | -145 |
| 48 | 9.237 8.930 | 8.895 8.608 | 8.573 8.305 | 98 99 | -112 | .112 .086 | -111 |
|  |  |  |  | 100 | $\cdot 15$ | . 015 | . 215 |

For explanation see p. 35

Value of an Annuity during the Langest of Three Livee according to the NORTHAMPTON TABLE

| Ages | $3 \%$ | $4 \%$ | Ages | $3 \%$ | $4 \%$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 101010 | 26.642 | 21.938 | 204040 | 22.762 | 19.259 |
| 101030 | 25.812 | 21.400 | 204060 | 21.697 | 18.582 |
| 101050 | 25.340 | 20.835 | 204545 | 22.008 | 18.741 |
| 101070 | 25.007 | $20 \cdot 781$ | 204565 | 21.123 | 18.134 |
| 102020 | 25.707 | 21.263 | 205050 | 21.396 | $18 \cdot 380$ |
| 102040 | 24.645 | 20.606 | 205070 | $20 \cdot 594$ | 17.704 |
| 102060 | 24.292 | $20 \cdot 333$ | 205555 | 20.948 | 18.013 |
| 10 2525 | $25^{\circ} \mathrm{O} 77$ | 20.944 | 205575 | 20.273 | 17.350 |
| 102545 | 24.401 | 20.491 | 206060 | 20.491 | 17.671 |
| 102565 | 23.905 | 20.077 | 206565 | 19.983 | 17.242 |
| 103030 | 24.785 | 20.635 | 207070 | 19.606 | 16.916 |
| 10 3050 | 23.780 | 20.021 | 303030 | 23.266 | 19.625 |
| 103070 | 23.472 | 19.746 | 303050 | 21.896 | 18.793 |
| 10 3535 | 24.217 | $20 \cdot 380$ | 303070 | 21.376 | 18.357 |
| 10 3555 | 23.251 | 19.628 | 303535 | 22.485 | 19.250 |
| 103575 | 23.029 | 19.426 | 303555 | $21 \cdot 141$ | 18.233 |
| 104040 | ${ }^{23} 7746$ | 19.851 | 303575 | 20.713 | 17.887 |
| 104060 | 22.878 | 19.351 | 304040 | 21.814 | 18.628 |
| 104545 | 23.271 | 19.495 | 304060 | $20 \cdot 570$ | 17.815 |
| 10 4565 | 22.462 | 19.035 | 304545 | 21.062 | $18 \cdot 241$ |
| 105050 | 22.647 | 19.202 | 304565 | 19.902 | 17.298 |
| 105070 | 22.028 | $18 \cdot 664$ | 305050 | $20 \cdot 227$ | $17 \cdot 585$ |
| 105555 | 22.341 | 18.958 | 305070 | 19.267 | ${ }^{16} \cdot 783$ |
| 105575 | 21.768 | 18.484 | 305555 | 19.670 | $17 \cdot 164$ |
| 106060 | 22.004 | $18 \cdot 705$ | 305575 | 18.651 | $16 \cdot 263$ |
| 106565 | 21.464 | $18 \cdot 225$ | 306060 | 19.107 | 16.708 |
| 107070 | 21.308 - | 18'I10 | 306565 | $18 \cdot 251$ | 15.97 I |
| 152525 | 24•773 | $20 \cdot 776$ | 307070 | $18 \cdot 045$ | 15.805 |
| 152545 | 23.932 | 20•192 | 404040 | $20 \cdot 909$ | 17.996 |
| 152565 | 23.375 | 19.723 | 404060 | 19.414 | 16.997 |
| 153535 | 23.738 | $20 \cdot 078$ | 404545 | 20.011 | 17.501 |
| 153555 | 22.687 | 19.263 | 404565 | 18.601 | 16.364 |
| r5 3575 | 22.407 | 19.007 | 405050 | 19.020 | ${ }^{16} 731$ |
| r5 4545 | 22.681 | 19.114 | 405070 | 17.817 | ${ }_{1} 15.736$ |
| 154565 | 21.783 | 18.581 | 405555 | 18.291 | 16.174 |
| 155555 | 21.639 | 18.508 | 405575 | 17.264 | ${ }^{15} 503$ |
| 155575 | 21.032 | 17.984 | 406060 | 17.567 | 15.590 |
| 156565 | 20.781 | 17.800 | 406565 | 16.583 | 14.747 |
| 202020 | 25.152 | $20 \cdot 836$ | 407070 | $16 \cdot 237$ | 14.464 |
| 202040 | 23.941 | $20 \cdot 185$ | 505050 | 17.913 | 15.866 |
| 202060 | 23.372 | $19 \cdot 740$ | 505070 | $16 \cdot 358$ | 14.633 |
| 202525 | 24.430 | $20 \cdot 557$ | 505555 | 16.953 | ${ }^{15} 165$ |
| 202545 | 23.488 | 19.904 | 505575 | 15.618 | 14.040 |
| 202565 | 22.867 | 19.369 | 506060 | 15.994 | 14.394 |
| 203030 | 23.980 | $20 \cdot 116$ | 506565 | 14.823 | 13.398 |
| 203050 | 22.795 | 19.390 | 507070 | 14.269 | 12.935 |
| 203070 | 22.390 | 19.045 | 606060 | 14.602 | 13.194 |
| 203535 | 23.282 | 19.782 | 606565 | $13 \cdot 163$ | 12.065 |
| 203555 | $22 \cdot 129$ | $18 \cdot 900$ | 607070 | 12.280 | 11.319 |
| 203575 | 21.805 | $18 \cdot 602$ | 707070 | 10.540 | 9.817 |

For explanation see p. 35

Single Premium Conversion Table for Finding by Inspection the Present
Value of $£ 1$ due at Death from the Valne of an Annuity for Life

| Value of Annuity | Value of £1 at Death |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $2 \frac{1}{2} \%$ | 3\% | 31 \% | $4 \%$ | $5 \%$ |
| 0 | -9756I | $\cdot 97087$ | -96618 | $\cdot 96154$ | -95238 |
| 1 | -95122 | -94175 | -93237 | .92308 | -90476 |
| 2 | $\cdot 92683$ | -91262 | . 89855 | . 88462 | -85714 |
| 3 | -90244 | . 88350 | -86473 | -84615 | -80952 |
| 4 | -87805 | -85437 | -83092 | -80769 | 76190 |
| 5 | -85366 | -82524 | -79710 | $\cdot 76923$ | -71429 |
| 6 | -82927 | $\cdot 79612$ | $\cdot 76329$ | $\cdot 73077$ | -66667 |
| 7 | -80488 | $\cdot 76699$ | $\checkmark 72947$ | -6923I | -61905 |
| 8 | 78049 | $\cdot 73786$. | -69565 | -65385 | -57143 |
| 9 | $\cdot 75610$ | 730874 | -66184 | -61538 | $\cdot 52381$ |
| 10 | -73171 | -6796I | -62802 | -57692 | -47619 |
| II | -70732 | -65049 | -59420 | -53846 | - 42857 |
| 12 | -68293 | -62136 | -56039 | -50000 | -38095 |
| 13 | $\cdot 65854$ | $\cdot 59223$ | -52657 | -46154 | - 33333 |
| 14 | -63415 | -563I | -49275 | -42308 | -2857 |
| 15 | -60976 | -53398 | -45894 | $\cdot 38462$ | -23810 |
| 16 | -58537 | -50485 | -42512 | -346r5 | -19048 |
| 17 | -56098 | -47573 | -39130 | -30769 | - I4286 |
| 18 | -53659 | -44660 | -35749 | - 26923 | -09524 |
| 19 | -51220 | -41748 | -32367 | $\cdot 23077$ | . 04762 |
| 20 | -48780 | $\cdot 38835$ | -28986 | -1923 | -00000 |
| 21 | -4634 | 35922 | -25604 | -15385 | ... |
| 22 | -43902 | -33010 | $\cdot 22222$ | -11538 | ... |
| 23 | -41463 | $\cdot 30007$ | -18841 | -07692 | ... |
| 24 | -39024 | 27184 | - 5459 | -03846 | ... |
| 25 | -36585 | -24272 | -12077 | -00000 | ... |
| 26 | -34146 | -21359 | -08696 | ... | ... |
| 27 | -31707 | - 18447 | -05314 | $\cdots$ | ... |
| 28 | -29268 | - 5534 | -01932 | $\cdots$ | $\ldots$ |
| 29 | $\cdot 26829$ | -1262I | ... | $\cdots$ |  |
| Difference ofAnnuity | Difference (subtractive) of Value of £1 at Death |  |  |  |  |
|  | 21 $\%$ | $3 \%$ | 3 $\frac{1}{2}$ | $4 \%$ | $5 \%$ |
| . 1 | . 00244 | . $\cdot 00291$ | .00338 .00676 | .00385 .00769 | .00476 |
| $\cdot 3$ | .00488 | .00583 | -00676 | -00769 | -00952 |
| $\cdot 4$ | $\cdot 00976$ | -01165 | - 01353 | -O1538 | -01905 |
| $\cdot 5$ | -OI220 | -01456 | -O1691 | -01923 | .02381 |
| 6 | -01463 | -01748 | -02029 | -02308 | ${ }^{\circ} \mathrm{O} 885$ |
| 7 | -01707 | -02039 | . 02367 | -02692 | -03333 |
| 8 | -0195I | '02330 | -02705 | -03077 | -03810 |
| '9 | , 02105 | '02621 | -03043 | -03462 | $\cdot 04286$ |

For explanation see pp. 35-39

## Annual Premium Conversion Table for Finding by Inepection the Annual Premium to ceoure $£ 1$ at Death from the Value of an Annuity for Life. INTEREST 3 PER CENT.

| Value of Amuity | Annual Premium |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Decimals of Value of Annuity |  |  |  |  |  |  |  |  |  |
|  | - | I | '2 | 3 | 4 | 5 |  | 7 | 8 | '9 |
| 0-0.9 | '9709 | . 8800 | . 8042 | '7401 | . 6852 | -6375 | '5959 | 5591 | 4 | '497 |
| I- 1 '9 | 4709 | -4471 | $\cdot 4254$ | -4057 | $\cdot 3875$ | -3709 | '3555 | 3412 | 3280 | $\cdot 3157$ |
| 2-2.9 | '3042 | -2935 | - 2834 | -2739 | -2650 | -2566 | -2487 | $\cdot 2411$ | $\cdot 2340$ | $\stackrel{2273}{-1750}$ |
| 3-3.9 | $\cdot 2209$ | - 2148 | -2090 | -2034 | -1981 | -1931 | -1883 | $\cdot 1836$ | -1792 | -1750 |
| 4-49 | '1709 | -1670 | -1632 | '1596 | - 561 | '1527 | -1494 | $\cdot 1463$ | $\cdot 1433$ | $\cdot 1404$ |
|  | '1375 | - 1348 | -1322 | -1296 | -1271 | -1247 | -1224 | 1201 | -1179 | -1158 |
| 6-69 | -1137 | -1117 | -1098 | $\cdot 1079$ | -1060 | -1042 | -1025 | '10 | -099I | $\bigcirc$ |
| 7-79 | -0959 | -0943 | -0928 | .0914 | -0899 | -0885 | -0872 | -0858 | -0845 |  |
| 8-8.9 | -0820 | -0808 | -0796 | -0784 | -0773 | ${ }^{\circ} \mathrm{0} 761$ | $\bigcirc$ | -0740 | -0729 | $\stackrel{\circ}{\circ} \mathrm{7} 19$ |
| 9-9.9 | -0709 | -0699 | -0689 | .0680 | -0670 | -0661 | -0652 | -0643 | -0635 | 26 |
| 10-1099 | -0618 | -0610 | -0602 | -0594 | - 0586 | -0578 | .0571 | -0563 | -0556 |  |
| 11 | -0542 | $\bigcirc 535$ | .0528 | $\bigcirc{ }^{\circ} \mathrm{O} 22$ | .0515 | -0509 | -0502 | -0496 | -0490 |  |
| 12-12.9 | -0478 | -0472 | -0466 | -0461 | . 0455 | -0449 | -0444 | -0439 | $\cdot 0433$ |  |
| 13-13.9 | - 0423 | -0418 | $\cdot 0413$ | $\bigcirc 0408$ | -0403 | -0398 | -0394 | -0389 | -0384 |  |
| 14-14.9 | -0375 | -0371 | -0367 | -0362 | .0358 | -0354 | -0350 | -0346 | -0342 | - 0338 |
| 15-15.9 | '033 | -0330 | -0326 | -0322 | -0318 | -0315 | -0311 | -0308 | -0304 | -0300 |
| 16-16.9 | -0297 | -0294 | -0290 | -0287 | ${ }^{\circ} \mathrm{O} 83$ | -028 | -0277 | -0274 | -027I | -0267 |
| 17-17.9 | . 0264 | -0261 | ${ }^{\circ} \mathrm{O258}$ | -0255 | $\bigcirc$ | -0249 | -0246 | -0243 | -024I | -0238 |
| 18-18.9 | -0235 | . 0232 | $\cdot 0230$ | -0227 | -0224 | -0222 | -0219 | -0216 | -0214 | -0211 |
| 19-19.9 | ${ }^{\circ} \mathrm{O} 209$ | -0206 | -0204 | -0201 | -0199 | -0197 | -0194 | -0192 | -0190 | . 018 |
| 20-20.9 | .0185 | -2183 | - 0180 | -0178 | -0176 | -0174 | -0172 | -0170 | -0167 | -0165 |
| 21-219 | -0163 | -016I | -0159 | -0157 | -ot 55 | -OI53 | - 0151 | - 0149 | -0147 | -0145 |
| 22-22.9 | -0144 | -0142 | -140 | -138 | -0136 | -0134 | - 0132 | -013I | -0129 | -0127 |
| 23-23.9 | -0125 | -O124 | -0122 | -OI 20 | -119 | -017 | - 0115 | -114 | - 0112 | -110 |
| 24-24.9 | -0109 | -0107 | - | 104 | -102 | - | -0099 | $\cdot 0098$ | -0096 | 0095 |
| 25-2 | -0093 | -0092 | -0090 | -0089 | -0088 | .0086 | -0085 | .0083 | -0082 | 0080 |
| 26-26.9 | -0079 | -0078 | -0076 | -0075 | -0074 | -0072 | $\cdot 0071$ | ${ }^{\circ} 0070$ | -0068 | 0067 |
| 27-27 | -0066 | . 0065 | .0063 | -0062 | -006 | -006 | -0058 | .0057 | $\cdot 0056$ | 005 |
| 28-28.9 | . 0054 | -0052 | .005I | . 0050 | -0049 | -0048 | '0047 | . 0045 | .0044 | -0043 |
| 29-29'9 | -004 | -00 | -0040 | -0039 | -0038 | -0037 | .0036 | .0034 | -0033 | 003 |
| 30-30.9 | -003I | .0030 | -0029 | -0028 | -0027 | -0026 | -0025 | -002 | 0023 | -022 |
| 3I-31.9 | -002I | -0020 | -019 | 0018 | $\cdot 0017$ | 0016 | -001 | .0015 | -0014 |  |
| 32-3299 | - 012 | '0011 | \%010 | -0009 | -0008 | 0007 | - | .0005 | -0005 | '00 |
| 33-33.9 | -0003 | . 0002 | -0001 | -0000 |  |  |  |  |  |  |


| For interest at add | $\stackrel{I}{\text { OI92 }}$ | ${ }_{\cdot 1 \frac{1}{4}}^{168}$ | $\begin{aligned} & \mathbf{I}_{\frac{1}{2}} \\ & \cdot 0143 \end{aligned}$ | I $\frac{8}{4}$ per cent. -0119 |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| For interest at add | $\stackrel{2}{0}{ }_{0}^{2}$ | $\begin{gathered} 2 \frac{1}{4} \\ \cdot \operatorname{cog} 1 \end{gathered}$ | $\begin{gathered} 2 \frac{1}{2} \\ \cdot 0047 \end{gathered}$ | $\begin{gathered} 2 \frac{3}{4} \\ \cdot 0024 \end{gathered}$ | " |
| For interest at subtract | $\begin{gathered} 3 \\ \cdot 0000 \end{gathered}$ | $\begin{aligned} & 3 \frac{1}{4} \\ & \cdot 0024 \end{aligned}$ | $\begin{aligned} & 3 \frac{1}{2} \\ & \cdot 0047 \end{aligned}$ | $\begin{gathered} 3_{4}^{\frac{8}{4}} \\ \cdot 0070 \end{gathered}$ | " |
| For interest at subtract | $\begin{gathered} 4 \\ -0093 \end{gathered}$ | $4_{011}^{4_{1}^{1}}$ | $\begin{gathered} 4 \frac{1}{2} \\ \cdot 0139 \end{gathered}$ | $\begin{gathered} 4 \frac{4}{4} \\ .0162 \end{gathered}$ | " |
| For interest at subtract | $\stackrel{5}{0185}$ | $\begin{gathered} 6 \\ \cdot 0275 \end{gathered}$ | $\begin{gathered} 7 \\ .0363 \end{gathered}$ | $\begin{gathered} 8 \\ .0449 \end{gathered}$ | " |

For explanation see pp. 35-39

## RATES

FOR

ANNUITTES AND ASSURANCES<br>CHARGES BY GOVERNMENT<br>AND By<br>BRITISH LIFE OFFICES



For explanation see pp. 39, 40

| COST OF DEFERRED LIFE ANNUITIES. <br> Money Returnable |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Age Next Birthday | $\begin{aligned} & \text { Years } \\ & \text { Deferred } \end{aligned}$ | Annual Payment |  | Single Payment |  |
|  |  | Males | Females | Males | Females |
| 10 | 10 | $\begin{array}{ccc} \hline & \text { s. } & \text { d. } \\ \text { I } & \text { I } 6 & \text { II } \end{array}$ | $\begin{array}{lll}  \pm & \text { s. } & d . \\ 2 & 0 & 2 \end{array}$ | $\begin{array}{rrr}  \pm & \text { s. } & d . \\ 17 & 19 & 7 \end{array}$ | $\begin{array}{lll} \hline & s . & d . \\ 19 & 11 & I \end{array}$ |
| 10 | 20 | - 153 | - 16 Io | 12 I 27 | 13187 |
| 10 | 30 | - 711 | - 810 | 8132 | 9 12 7 |
| 10 | 40 | - 45 | - 411 | 5140 | 663 |
| 10 | 50 | $\bigcirc 25$ | - 28 | 391 | 3167 |
| 15 | 10 | 115 | 1185 | 17 I 10 | 18146 |
| 15 | 20 | $\bigcirc 144$ | 01511 | 11176 | $13 \quad 34$ |
| I5 | 30 | $\bigcirc 74$ | - 82 | 8 O 1 | 818 - |
| 15 | 40 | $\bigcirc 311$ | $\bigcirc 44$ | 5111 | 5128 |
| 15 | 50 | $\bigcirc 20$ | $\bigcirc 23$ | 2184 | 3410 |
| 20 | 10 | 1132 | 1167 | $\begin{array}{lll}16 & 3 & 4\end{array}$ | 17167 |
| 20 | 20 | 0135 | 01411 | $\begin{array}{lll}11 & 1 & 7\end{array}$ | 1266 |
| 20 | 30 | $\bigcirc 68$ | $\bigcirc 75$ | 760 | $\begin{array}{lll}8 & 1 & 7\end{array}$ |
| 20 | 35 | - 410 | - 54 | $\begin{array}{llll}515 & 4\end{array}$ | $\begin{array}{lll}6 & 7 & 5\end{array}$ |
| 20 | 40 | - 35 | - 310 | 485 | 418 0 |
| 20 | 45 | - 25 | - 28 | 360 | 3135 |
| 25 | 10 | 1113 | 1147 | 1540 | $1617 \quad 0$ |
| 25 | 20 | 0125 | - 13 9 | 10410 | 11710 |
| 25 | 25 | - 86 | - 95 | 852 | 9210 |
| 25 | 30 | - 60 | - 67 | 6 10 6 | $7 \quad 42$ |
| 25 | 35 | - 42 | - 48 | 5 ○ ○ | 51011 |
| 25 | 40 | - 2 II | - 33 | $\begin{array}{llll}3 & 14 & 8\end{array}$ | 430 |
| 30 | 10 | 192 | 1125 | 1439 | 15156 |
| 30 | 15 | 0174 | - I9 4 | If II 9 | 12179 |
| 30 | 20 | - II 4 | - 126 | 9610 | 10610 |
| 30 | 25 | - 78 | - 85 | $\begin{array}{lll}7 & 7 & 7\end{array}$ | 831 |
| 30 | 30 | - 52 | - 59 | 5132 | 655 |
| 30 | 35 | $\bigcirc 36$ | $\bigcirc 311$ | 446 | 413 II |
| 30 | 40 | $\bigcirc 25$ | $\bigcirc 28$ | 3 I 11 | 3779 |
| 35 | 10 | 1611 | 1911 | 13 13 2 | 14117 |
| 35 | 15 | - 1510 | $\bigcirc 176$ | 10114 | 11140 |
| 35 | 20 | $\bigcirc 10$ I | $\bigcirc \mathrm{OIL} 2$ | 870 | 946 |
| 35 | 25 | - 68 | $\bigcirc 74$ | 680 | $7 \mathrm{II}^{\text {II }}$ |
| 35 | 30 | $\bigcirc 45$ | $\bigcirc 411$ | 4157 | 563 |
| 35 | 35 | - 211 | - 33 | 3100 | 3168 |
| 40 | IO | 147 | $\begin{array}{lll}17 & 7 \\ 0\end{array}$ | $\begin{array}{ll}11 & 19 \\ & 2\end{array}$ | 13410 |
| 40 | 15 | 0142 | - 15 8 | 9811 | Io 89 |
| 40 | 20 | - 89 | - 99 | $74^{7} 10$ | $8 \bigcirc 7$ |
| 40 | 25 | $\bigcirc{ }^{\circ} \mathrm{5} 7$ | - 63 | 588 | 6 - 3 |
| 40 | 30 | - 38 | - 4 o | $\begin{array}{lll}3 & 19 & 3\end{array}$ | 469 |
| 45 | 10 | $\begin{array}{lrl}1 & 2 & 0\end{array}$ | $\begin{array}{lll}1 & 4 & 3 \\ 0\end{array}$ | $\begin{array}{rrrr}10 & 13 & 9\end{array}$ | 11 16 |
| 45 | 15 | 0123 | 0137 | 8310 | 9 1 8 <br>  6  |
| 45 | 20 | $\bigcirc 75$ | $\bigcirc 83$ | $\begin{array}{lll}6 & 2 & 4\end{array}$ | 616 |
| 45 | 25 | $\bigcirc{ }^{\circ} 48$ | 0 5 <br> 1  | $4{ }_{4}^{4} 88$ | 418 1 |
| 50 | 10 | - 19 | 1 I I | 955 | 1056 |
| 50 | 15 | $\bigcirc 105$ | 0116 | 6185 | 71311 |
| 50 | 20 | $\bigcirc 62$ | $\bigcirc 69$ | $\begin{array}{lll}5 & 1 & 5\end{array}$ | 5110 |
| 55 | 10 | 016 | 01711 | 7168 | 814 |
| 55 | 15 10 | - 87 | - 975 | 5 14 <br> 6 9 | $\begin{array}{lll}6 & 5 & 7 \\ 7 & 2 & 1\end{array}$ |
|  | 10 | 0134 | 014 |  | $7 \quad 21$ |

For explanation see pp. 39,40

| COST OF DEFERRED LIFE ANNUITIES. <br> Money not Returnable |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\underset{\text { Age Next }}{\text { Birthday }}$ | $\begin{aligned} & \text { Years } \\ & \text { Deferred } \end{aligned}$ | Annual Payment |  | Single Payment |  |
|  |  | Males | Females | Males | Females |
| 10 | 10 | $\begin{array}{cccc} \pm & 8 . & d . \\ \text { I } & 15 & 1\end{array}$ | $\begin{array}{ccc}\text { \& } & 8 . & d . \\ \text { I } & 18 & 6\end{array}$ | $\begin{array}{rlll}  \pm & s . & d . \\ 16 & 11 & 10 \end{array}$ | $\begin{array}{ccc}8 & 5 . & a \\ 18 & 6 & 7\end{array}$ |
| 10 | 20 | $\bigcirc 137$ | 0154 | 10 98 | 12 I 2 |
| 10 | 30 | -65 | $\bigcirc 76$ | 650 | 7113 |
| 10 | 40 | - 31 | - 3 10 | 3 8 6 | 48 |
| 10 | 50 | $\bigcirc \mathrm{O}$ 1 5 | $\bigcirc 110$ | 1129 | 2411 |
| 15 | 10 | 1131 | $1 \begin{array}{lll}16 & 9\end{array}$ | 151110 | 1788 |
| 15 | 20 | - 126 | 0145 | 9 Il 10 | II 46 |
| 15 | 30 | - 59 | - 610 | 5101 | 6163 |
| 15 | 40 | - 28 | - 34 | 21611 | 3150 |
| 15 | 50 | 0 I | $\bigcirc 15$ | 142 | 1145 |
| 20 | 10 | 1111 | $1{ }^{14} 10$ | 1410 II | 1696 |
| 20 | 20 | O II 6 | - 134 | 8135 | 1068 |
| 20 | 30 | - 50 | - 61 | 4151 | 6 - 3 |
| 20 | 35 | - 34 | - 42 | $\begin{array}{lll}3 & 7 \\ 2\end{array}$ | $4 \begin{array}{lll}4 & 7\end{array}$ |
| 20 | 40 | - 22 | - 29 | 254 | 3 I 4 |
| 20 | 45 | -1 14 | 0 1 9 | $\begin{array}{lll}1 & 8 & 7\end{array}$ | 208 |
| 25 | 10 | 18 II | 1129 | 1394 | 15810 |
| 25 | 20 | - 104 | 0122 | 7147 | 976 |
| 25 | 25 | - 68 | - 8 O | 5 I3 0 | $\begin{array}{lll}7 & 1 & 4\end{array}$ |
| 25 | 30 | - 44 | - 54 | 3 I9 10 | 532 |
| 25 | 35 | - 29 | - 35 | 2 I 3 II | 312 |
| 25 | 40 | - 18 | - 22 | 1 I3 II | 274 |
| 30 | 10 | $1{ }^{1} 69$ | $1{ }^{1}$ IO 6 | 12610 | 1465 |
| 30 | 15 | - 15 I | 0176 | 9 F | $\begin{array}{ll}11 & 1 \\ 8\end{array}$ |
| 30 | 20 | - 93 | 0 IO II | 6154 | 869 |
| 30 | 25 | - 59 | - 7 - | 4158 | 6 I 8 |
| 30 | 30 | - 37 | - 45 | $\begin{array}{lll}3 & 4 & 7\end{array}$ | $4{ }^{4} 50$ |
| 30 | 35 | $\bigcirc 22$ | - 29 | 208 | 21510 |
| 30 | 40 | - 1 2 | - $\begin{array}{lll}1 & 7\end{array}$ | 130 | $1{ }_{13} 7$ |
| 35 | 10 | 145 | 180 | $\begin{array}{llll}11 & 3\end{array}$ | 132 |
| 35 | 15 | - 13 6 | - 159 | 834 | 9177 |
| 35 | 20 | - 80 | - 96 | 5156 | 742 |
| 35 | 25 | - 410 | - 510 | 318 - | 5 ¢ 9 |
| 35 | 30 | - 210 | - 36 | $\begin{array}{lll}2 & 9 & 1\end{array}$ | 362 |
| 35 | 35 | - 16 | - 20 | 179 | I 199 |
| 40 | 10 | 120 | $1 \begin{array}{lll}1 & 5\end{array}$ | 9192 | $\begin{array}{llll}11 & 15 & 3\end{array}$ |
| 40 | 15 | 0 II 10 | 013 10 | 7 \% 10 | 8 II 8 |
| 40 | 20 | - 69 | $\bigcirc 80$ | 4151 | 6 O 0 |
| 40 | 25 | - 310 | - 48 | 219 IO | 31810 |
| 40 | 30 | $\bigcirc 20$ | - 27 | $1{ }^{1} 310$ | 274 |
| 45 | 10 | - 19 4 | $\begin{array}{lll}1 & 2 & 2 \\ 0 & 11\end{array}$ | 8137 | 10 56 |
| 45 | 15 | - 10 0 | O II 8 | $\begin{array}{llll}517 & 2\end{array}$ | $\begin{array}{lll}7 & 3 & 7\end{array}$ |
| 45 | 20 | - 54 | - 65 | $\begin{array}{llll}3 & 13 & 9\end{array}$ |  |
| 45 | 25 | - 29 | - 35 | $\begin{array}{lll}2 & 1 & 8 \\ 7 & 6 & \end{array}$ | $\begin{array}{lll}2 & 16 & 8 \\ 8 & 1\end{array}$ |
| 50 | 10 | - I6 7 | 0 I8 II | 766 | 813 o |
| 50 | 15 | - 8 o | - 95 | 4120 | 5138 |
| 50 | 20 | 0311 | 0410 | 2120 | 383 |
| 55 | 10 | 0135 | 0155 | 5165 | 6190 |
| 55 | 15 | $0{ }^{\circ} \mathrm{II}$ | - 72 | $\begin{array}{llll}3 & 5 & 9\end{array}$ | 435 |
| 60 | 10 | $\bigcirc 10$ | 01110 | 446 | 53 II |

For explanation see pp. 39,40

SINGLE PREMIUMS FOR LIFE ASSURANCE FOR £100

| $\begin{aligned} & \text { Age at } \\ & \text { Entry } \end{aligned}$ | Sum Assured Payable |  |  |  |  |  |  | Age at Entry |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | At Death | In 10 Years |  | In 15 Years |  | In 20 Years |  |  |
|  | $\begin{array}{llll}\text { \& } & s . & d .\end{array}$ | £ s. | ${ }_{6}$ | \& s. | d. | ${ }_{6}$ s. | d. |  |
| 16 | $\begin{array}{lll}37 & 5 & 0\end{array}$ | 804 |  | 7113 |  | 647 | - | 16 |
| 17 | 37196 | 805 | 6 | 7114 | 6 | 649 | 6 | 17 |
| 18 | 38136 | 806 | 6 | 7116 | 6 | 6412 |  | 18 |
| 19 | $\begin{array}{ll}39 & 6\end{array}$ | 807 | 6 | 7117 | 6 | 6413 | 6 | 19 |
| 20 | $3919 \quad 0$ | 808 | 0 | 7118 | 6 | 6415 | - | 20 |
| 21 | 40 Il 0 | 808 | - | 7119 | 0 | 6416 |  | 21 |
| 22 | 4130 | 808 | 6 | 7119 | 6 | 6417 |  | 22 |
| 23 | 41150 | 808 | 6 | 72 - | - | 6417 | 6 | 23 |
| 24 | 4276 | 808 | 6 | 72 - | 6 | 6419 | - | 24 |
| 25 | 43 I 0 | 809 | - | 72 I | 0 | 65 o | - | 25 |
| 26 | 43146 | 809 | 6 | 722 | 0 | 65 1 | 6 | 26 |
| 27 | 4486 | 80 Io | $\bigcirc$ | 72 | o | 653 | 6 | 27 |
| 28 | $45 \quad 26$ | 80 10 | 6 | 724 | - | 655 | $\bigcirc$ | 28 |
| 29 | 45170 | 80 Il | $\bigcirc$ | 725 | o | 657 |  | 29 |
| 30 | 46 II 6 | 80 II | 6 | 726 | - | 658 | 6 | 30 |
| 31 | $47 \cdot 6$ o | 80 II | 6 | 727 | 0 | 6510 | 6 | 31 |
| 32 | 48 I 180 | $80 \mathrm{I2}$ | 6 | 728 | $\bigcirc$ | 6512 | 6 | 32 |
| 33 | 48160 | 8013 | 0 | 729 | 6 | 6515 | - | 33 |
| 34 | 49 II 6 | 8013 | 6 | 72 10 | 6 | 6517 | - | 34 |
| 35 | 5076 | 8014 | 0 | 7212 | 0 | 66 o | 0 | 35 |
| 36 | $\begin{array}{llll}51 & 3 & 6\end{array}$ | 8014 | 6 | 72 I3 | 6 | 662 | 6 | 36 |
| 37 | $\begin{array}{llll}51 & 19 & 6\end{array}$ | 8015 | $\bigcirc$ | 72 I5 | 0 | 665 | 6 | 37 |
| 38 | 52160 | 8016 | ${ }^{\circ}$ | 7216 | 6 | 668 | 6 | 38 |
| 39 | 53 I 30 | 8016 | 6 | 72 I8 | 6 | 6611 | 6 | 39 |
| 40 | 54 10 o | 8017 | 6 | 73 - | 6 | 6615 | 6 | 40 |
| 41 | $\begin{array}{lll}55 & 7 & 0\end{array}$ | 8018 | $\bigcirc$ | 732 | 6 | 6619 | - | 41 |
| 42 | $\begin{array}{lll}56 & 5 & \circ\end{array}$ | 8019 | $\bigcirc$ | 735 | 0 | 673 | 6 | 42 |
| 43 | 5730 | 810 | 6 | 737 | 6 | 678 | 6 | 43 |
| 44 | $\begin{array}{lll}58 & 1 & 6\end{array}$ | 81 | $\bigcirc$ | 7310 | 6 | 6714 | 0 | 44 |
| 45 | 59 -6 | 813 | $\bigcirc$ | 7314 | 0 | 6719 | 6 | 45 |
| 46 | 59196 | 815 | $\bigcirc$ | 7317 | - | 686 | $\bigcirc$ | 46 |
| 47 | 60186 | 816 | 6 | 74 I | 0 | 6812 | 6 | 47 |
| 48 | 61176 | 8 I 8 | 0 | 745 | - | 68 19 | 6 | 48 |
| 49 | 62170 | 8110 | 0 | 749 | - | 697 | - | 49 |
| 50 | 63166 | 8 I I2 | 0 | 7413 | 6 | 6914 | 6 | 50 |
| 51 | 6416 o | 8 I 14 | $\bigcirc$ | 7418 | 6 | 703 | 0 | 51 |
| 52 | $6516 \quad 0$ | 8116 | 6 | 754 | $\bigcirc$ | 7012 | 6 | 52 |
| 53 | $6616 \bigcirc$ | 8119 | 0 | 759 | 6 | 712 | 0 | 53 |
| 54 | 6716 | 822 | 0 | 7516 | - | 7112 | 6 | 54 |
| 55 | 68166 | 825 | 0 | 763 | - | 724 | 0 | 55 |
| 56 | 69166 | $\ldots$ |  | ... |  | ... |  | 56 |
| 57 | $\begin{array}{llll}70 & 17 & 0 \\ 71 & 17 & 6\end{array}$ | $\ldots$ |  | $\ldots$ |  | $\ldots$ |  | 57 |
| 58 59 | $\begin{array}{llll}71 & 17 & 6 \\ 72 & 18 & 0\end{array}$ | $\ldots$ |  | $\ldots$ |  | $\cdots$ |  | 58 |
| 60 | 7318 |  |  | ... |  | ... |  | 60 |
| 61 | 7418 ○ | $\ldots$ |  | ... |  | ... |  | 61 |
| 62 | 7518 o | $\ldots$ |  | ... |  | ... |  | 62 |
| 63 | 76 I8 | $\ldots$ |  | ... |  | ... |  | 63 |
| 64 | 7717 o | .. |  | $\ldots$ |  | $\ldots$ |  | 64 |
| 65 | 78 16 6 | ... |  | ... |  | $\ldots$ |  | 65 |

For explanation see pp. 39,40

POST OFFICE ASSURANCES

SINGLE PREMIUMS FOR LIFE ASSURANCE FOR £100

| Age at | Sum Assured Payable |  |  |  |  |  |  |  | $\underset{\text { Entry }}{\text { Age at }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In 25 Years |  | In 30 Years |  | In 35 Years |  | In 40 Years |  |  |
| 16 | $\begin{array}{ll}1 & s \\ 58 \\ 58\end{array}$ |  | $\begin{array}{cc} \text { E } & s . \\ 53 & 0 \end{array}$ |  | $\pm$ <br> 48 <br> 48 <br> 8 <br> 14 |  | $\begin{array}{ll}\text { £ } & \text { s. } \\ 45 & 4\end{array}$ |  | 16 |
| 17 | 58 | - | 534 | 6 | 4819 |  | 45 10 |  | 17 |
| 18 | 5810 | - | 538 |  | 494 | 6 | 4517 |  | 18 |
| 19 | 5812 | 6 | 5311 | 6 | 498 |  | 462 |  | 19 |
| 20 | 5814 | 6 | 5314 | - | 4912 |  | 467 |  | 20 |
| 2 r | 5816 | - | 5316 | 6 | 49 I 5 | 6 | 46 II |  | 21 |
| 22 | 5817 | 6 | 5319 | 0 | 49 I9 |  | 4616 |  | 22 |
| 23 | 5819 | 0 | 54 I | - | 502 | 6 | 47 I |  | 23 |
| 24 | 59 I | - | 544 | - | 506 |  | 476 |  | 24 |
| 25 | 593 | 0 | 547 |  | 5010 | 6 | 4712 | 6 | 25 |
| 26 | 595 | 6 | 54 ıо | 6 | 5015 | 6 | 4719 | 0 | 26 |
| 27 | 598 | $\bigcirc$ | 5414 | 6 | 515 | - | 486 |  | 27 |
| 28 | 59 1о | 6 | 5418 | 6 | 5 I 6 |  | 48 I 3 |  | 28 |
| 29 | 59 I3 | 6 | 552 | 6 | 5112 | 6 | 49 1 | 6 | 29 |
| 30 | 5916 | 6 | 557 | - | 5118 | 6 | 49 10 | 0 | 30 |
| 3 r | 5919 | 6 | 55 II |  | 525 | 0 | 4918 | 6. | 3 I |
| 32 | 603 | 0 | 5516 | 6 | 5212 |  | 508 |  | 32 |
| 33 | 606 | 6 | 562 | 0 | 5219 | 6 | 5017 | 6 | 33 |
| 34 | 6010 | 0 | 567 |  | 538 | 0 | 518 |  | 34 |
| 35 | 6014 | 6 | 5614 | - | 5316 | 6 | 5119 | 0 | 35 |
| 36 | 6019 | 0 | 57 o |  | 545 | 6 | 52 II | 0 | 36 |
| 37 | 613 | 6 | 57 | 6 | 5415 | 0 | 533 | - | 37 |
| 38 | 6 I 8 | 6 | 5715 | - | 55.5 | - | 5316 |  | 38 |
| 39 | 6114 | 0 | 58 |  | 5516 | - | 549 |  | 39 |
| 40 | 62 o | - | 58 II | 6 | 567 | 6 | 553 |  | 40 |
| 4 I | 626 | $\bigcirc$ | 59 I | 0 | 5619 | 6 | $\ldots$ |  | 41 |
| 42 | 6213 | - | 59 II | ${ }^{\circ}$ | 5713 | 0 | $\ldots$ |  | 42 |
| 43 | 631 | - | 60 I | 6 | 587 | $\bigcirc$ | $\cdots$ |  | 43 |
| 44 | $63 \quad 9$ | 6 | 6013 |  | 59 I | 6 | ... |  | 44 |
| 45 | 6318 | $\bigcirc$ | 615 | 6 | 5917 | 0 | ... |  | 45 |
| 46 |  | 6 | 6118 |  | ... |  | $\ldots$ |  | 46 |
| 47 | 6417 | 6 | 6212 | - | $\ldots$ |  | ... |  | 47 |
| 48 | 658 | 0 | 636 |  | ... |  | ... |  | 48 |
| 49 | 65 19 | - | 640 | 6 | $\ldots$ |  | ... |  | 49 |
| 50 | 66 10 | 6 | 6416 | 0 | $\ldots$ |  | ... |  | 50 |
| 51 | 673 | 0 | ... |  | $\ldots$ |  | ... |  | 51 |
| 52 | 6716 | 6 | $\ldots$ |  | $\ldots$ |  | ... |  | 52 |
| 53 | 68 10 | 6 | $\cdots$ |  | ... |  | ... |  | 53 |
| 54 | 695 | 6 | ... |  | $\ldots$ |  | $\ldots$ |  | 54 |
| 55 | 70 I | 0 | $\ldots$ |  | $\cdots$ |  | $\cdots$ |  | 55 |



For explanation see pp. 39,40

## IMMEDIATE LIFE ANNUITIES

Granted through the National Debt Office for $£ 100$ of $2 \frac{1}{2}$ per Cent. Stock when the Price of $£ 100$ Stock is above $£ 99$ 10s. 1 d .

| Age Nominee | Male | Female | Age of the Nominee | Male | Female |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 16 | $\begin{array}{lll}£ & 8 . & d . \\ 4 & 4 & 0\end{array}$ | $\begin{array}{rrr} \pm & s . & d . \\ 3 & 17 & 7\end{array}$ | 51 | $\begin{array}{llll}\text { £ } & s & & d . \\ 6 & \text { I } 5 & \text { I }\end{array}$ | $\begin{array}{llll}2 & & & \\ 6 & & \\ 6 & 2 & 3\end{array}$ |
| 17 | 449 | 3183 | 52 | 6 I8 1 | $6 \quad 50$ |
| 18 | $4 \quad 57$ | 318 10 | 53 | 7 I 5 | 680 |
| 19 | 465 | 3196 | 54 | $7 \quad 410$ | 6112 |
| 20 | 473 | 401 | 55 | $\begin{array}{lll}7 & 8 & 7\end{array}$ | 6146 |
| 21 | 488 | 4010 | 56 | 7127 | $618 \quad 2$ |
| 22 | 490 | 416 | 57 | 7 I 611 | $7 \quad 21$ |
| 23 | 49 II | $4 \quad 23$ | 58 | 818 | 766 |
| 24 | 41010 | 430 | 59 | 8610 | 7107 |
| 25 | 41110 | 439 | 60 | 8124 | $7 \begin{array}{lll}7 & 15 & 3\end{array}$ |
| 26 | 41210 | 4646 | 61 | 8 I8 0 | 8 \% 04 |
| 27 | 41310 | $4 \quad 5 \quad 4$ | 62 | 940 | $8 \quad 5 \quad 8$ |
| 28 | 41411 | 463 | 63 | 9104 | 8 II 4 |
| 29 | 4160 | 471 | 64 | 9171 | 8176 |
| 30 | 4 I7 2 | 480 | 65 | $10 \quad 4 \quad 4$ | 943 |
| 3 I | $4 \begin{array}{lll}4 & 18 & 4\end{array}$ | 490 | 66 | 101110 | 9 II 6 |
| 32 | 4196 | $410 \quad 0$ | 67 | IO 19 9 | 9196 |
| 33 | 5010 | 4 II I | 68 | II $8 \quad 2$ | 10711 |
| 34 | 5 2 1 | 4122 | 69 | $\begin{array}{llll}11 & 17 & 2\end{array}$ | $1017 \quad 0$ |
| 35 | $\begin{array}{lll}5 & 3 & 5\end{array}$ | 4134 | 70 | 1270 | 11 66 |
| 36 | 5410 | 4146 | 71 | 12176 | $\begin{array}{lll}11 & 16\end{array}$ |
| 37 | $\begin{array}{lll}5 & 6 & 4\end{array}$ | 4159 | 72 | 1389 | 1266 |
| 38 | 5710 | 4170 | 73 | 1407 | $\begin{array}{llll}12 & 17\end{array}$ |
| 39 | $\begin{array}{llll}5 & 9 & 4\end{array}$ | 4185 | 74 | 14130 | 1389 |
| 40 | 5110 | 41910 | 75 | 15510 | I4 I 0 |
| 41 | $\begin{array}{llll}5 & 12 & 8\end{array}$ | 5 I 4 | 76 | $\begin{array}{llll}15 & 19 & 7\end{array}$ | $14 \begin{array}{lll}14 & 0\end{array}$ |
| 42 | 51146 | $5 \quad 30$ | 77 | 161310 | 15711 |
| 43 | $\begin{array}{llll}5 & 16 & 4\end{array}$ | $\begin{array}{lll}5 & 4 & 8\end{array}$ | 78 | 178 1о | $16 \quad 28$ |
| 44 | $\begin{array}{llll}5 & 18 & 3\end{array}$ | $\begin{array}{lll}5 & 6 & 5\end{array}$ | 79 | 18410 | $1618 \quad 5$ |
| 45 | $6 \quad 0 \quad 4$ | $\begin{array}{llll}5 & 8 & 4\end{array}$ | 80 | 19 I 9 | 17150 |
| 46 | $\begin{array}{lll}6 & 2 & 5\end{array}$ | 5104 |  |  |  |
| 47 | $\begin{array}{lll}6 & 4 & 8\end{array}$ | 5126 |  |  |  |
| 48 |  | 51489 |  |  |  |
| 49 | $\begin{array}{lll}6 & 9 & 7\end{array}$ | 5 L |  |  |  |
| 50 | 6123 | 5198 |  |  | ' |

Life annuities are payable quarterly at the National Debt Office by warrant on the Bank of England.

The warrants may be received at the National Debt Office either on personal demand or by power of attorney, or they can be transmitted by post to the proprietor at his or her own risk.

Life annuities are transferable, but cannot be transferred in parts or shares, nor can the original nominee ever be changed.

For explanation see p. 40

LIFE OFFICES ANNUITIES AND ASSURANCES


Annual Premium for Assurance of $\mathbf{£ 1 0 0}$ at Death

| Age | With Profits | Without Profits | Age | With Profits | Withont Profits |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | $\begin{array}{ccc} \pm & s & d \\ \text { I } & \text { IP } & 6\end{array}$ | $\begin{array}{llll}£ & s . & d . \\ \text { I } & \text { I } & & 8\end{array}$ | 4 I | $\begin{array}{ccc}f & s . & d . \\ 3 & 6 & \end{array}$ | $\begin{array}{ccc} £ & \& & d . \\ 2 & 17 & 10 \end{array}$ |
| 22 | $\begin{array}{llll}1 & 19 & 6 \\ 2 & 0 & 3\end{array}$ | $\begin{array}{llll}1 & 13 & 8 \\ 1 & 14 & 4\end{array}$ | 42 | $\begin{array}{llll}3 & 6 & 9 \\ 3 & 8 & 8\end{array}$ | 21910 |
| 23 | 2 I 2 | I 15 I | 43 | 310 II | 3 I II |
| 24 | 221 | 1 I5 II | 44 | 313 | 342 |
| 25 | 231 | $\begin{array}{ll}1 & 167\end{array}$ | 45 | 3159 | $\begin{array}{lll}3 & 6 & 7\end{array}$ |
| 26 | 24 I | 1176 | 46 | 3185 | 390 |
| 27 | 252 | $\begin{array}{lll}1 & 18 & 5\end{array}$ | 47 | 4 I 3 | 3 II 8 |
| 28 | 2666 | I 195 | 48 | 441 | 3145 |
| 29 | 276 | 206 | 49 | 478 | 3174 |
| 30 | $\begin{array}{llll}2 & 8 & 9\end{array}$ | $2 \begin{array}{lll}2 & 1 & 7\end{array}$ | 50 | 4 II 6 | 407 |
| 31 | 2100 | $2 \begin{array}{lll}2 & 2 & 9\end{array}$ | 51 | 4149 | 442 |
| 32 | 2 II 3 | 2311 | 52 | $\begin{array}{llll}4 & 18 & 7\end{array}$ | 4779 |
| 33 | 2128 | $\begin{array}{lll}2 & 5 & 2\end{array}$ | 53 | $\begin{array}{lll}5 & 2 & 9\end{array}$ | 4118 |
| 34 | 21418 | $\begin{array}{lll}2 & 6 & 5\end{array}$ | 54 | $\begin{array}{llll}5 & 7 & 2\end{array}$ | 4 I5 II |
| 35 | 2158 | 279 | 55 | 5120 | 503 |
| 36 | $\begin{array}{llll}2 & 17 & 3\end{array}$ | $\begin{array}{llll}2 & 9 & 3\end{array}$ | 56 | $\begin{array}{llll}5 & 17 & 1\end{array}$ | $5 \quad 5 \quad 0$ |
| 37 | 218 II | 21010 | 57 | $\begin{array}{lll}6 & 2 & 7\end{array}$ | 5 IO 1 |
| 38 | 308 | 2125 | 58 | 6884 | 5 I 5 |
| 39 | $3 \quad 27$ | $2 \begin{array}{llll}2 & 14 & 2\end{array}$ | 59 | $\begin{array}{llll}6 & 14 & 5\end{array}$ | 6 I 0 |
| 40 | 346 | 21511 | 60 | $7 \quad 0 \quad 8$ | $6 \quad 68$ |

Annual Premiums for Endowment Assurance of $£ 100$


For explanation see p. 40

# INCOME TAX TABLES 

At 5d., 6d.: 7d., $8 d .$, and $9 d$. in the Pound
£1-200

| Income | TAX THEREON AT PER £ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $5 d$. | $6 d$ | $7 d$. | $8 d$ | $9 d$. |
| $\pm$ | $\begin{array}{ccc}2 & 3 . & d . \\ 0 & 0 & 5\end{array}$ | $\begin{array}{lll}2 & 8 . \\ 0 & 0 & \\ 0 & 0 & 6\end{array}$ | $\begin{array}{lll}£ & s & d \\ 0 & 0 & 7\end{array}$ |  | $\begin{array}{llll}\text { f } & s & \\ 0 & d \\ 0 & 0 & 9\end{array}$ |
| 2 | $\bigcirc 0$ 10 | $\bigcirc 1$ | - 12 | - 184 | - 16 |
| 3 | $\bigcirc$ | $\bigcirc 1$ | - 19 | $\bigcirc 20$ | - 23 |
| 4 | $\bigcirc 18$ | 02 | - 24 | - 28 | - 30 |
| 5 | $\bigcirc 21$ | - 2 | - 211 | - 34 | - 39 |
| 6 | $\bigcirc 26$ | - 30 | - 36 | - 40 | - 46 |
| 7 | $\bigcirc 211$ | - 36 | - 418 | - 48 | - 53 |
| 8 | - 34 | - 4 | - 48 | - 54 | - 60 |
| 9 | $\bigcirc 39$ | - 4 | - 53 | $\bigcirc 60$ | -69 |
| 10 | - 42 | - 5 | - 5 Io | - 68 | - 76 |
| 11 | - 47 | - 56 | - 65 | - 7 | - 83 |
| 12 | - 50 | - 6 | 070 | $\bigcirc 80$ | - 90 |
| 15 | - 63 | - 76 | - 89 | 0 10 0 | 0 II 3 |
| 20 | - 84 | 0 10 | 0118 | - 134 | - 150 |
| 25 | $\bigcirc 105$ | 012 | -14 7 | - 168 | - 189 |
| 30 | - 126 | O 15 | - 176 | 100 | 126 |
| 35 | - 147 | - 17 | I 05 | $1 \begin{array}{lll}1 & 3\end{array}$ | 163 |
| 40 | 0168 | - | 134 | 168 | 1100 |
| 45 | 0189 | 12 | I 63 | 1100 | 1139 |
| 50 | 1010 | 15 | 192 | $\begin{array}{llll}1 & 13 & 4\end{array}$ | 1176 |
| 55 | 12 II | 17 | 112 I | $\begin{array}{lll}1 & 168\end{array}$ | $2 \begin{array}{lll}2 & 1 & 3\end{array}$ |
| 60 | 150 | 1 Io | 1150 | 200 | 250 |
| 65 | 151 | 112 | 11711 | $\begin{array}{lll}2 & 3 & 4\end{array}$ | 289 |
| 70 | 192 | 115 | 20 10 | 268 | 2126 |
| 75 | 1113 | 117 | 239 | 2 IO 0 | 2163 |
| 80 | $\begin{array}{lll}1 & 13 & 4\end{array}$ | 20 | 268 |  | $3 \circ 0$ |
| 85 | 115 | 226 | $\begin{array}{llll}2 & 9 & 7\end{array}$ | 2168 | $\begin{array}{llll}3 & 3 & 9\end{array}$ |
| 90 | 1176 | 25 | 2126 | 300 | $\begin{array}{llll}3 & 7 & 6\end{array}$ |
| 95 | $\begin{array}{lll}1 & 19 & 7\end{array}$ | 27 | $\begin{array}{lll}215 & 5\end{array}$ | $\begin{array}{llll}3 & 3 & 4\end{array}$ | 3 II 3 |
| 100 | 218 | 210 | $\begin{array}{llll}2 & 18 & 4\end{array}$ | $\begin{array}{lll}3 & 68\end{array}$ | 3150 |
| 105 | $\begin{array}{llll}2 & 3 & 9\end{array}$ | 212 | 3 r 3 | 3100 | 3189 |
| 110 | 2510 | 215 | $\begin{array}{llll}3 & 4 & 2\end{array}$ | $\begin{array}{llll}3 & 13 & 4\end{array}$ | 426 |
| 115 | 2711 | 217 | $\begin{array}{llll}3 & 7 & 1\end{array}$ | 3168 | 463 |
| 120 | 2100 | 3 o | 3100 | 4 ○ o | 410 |
| 125 | 212 | 32 | 31211 | 434 | 4139 |
| 130 | $\begin{array}{lll}2 & 14 & 2\end{array}$ | 35 | 315 IO | 468 | 4176 |
| 135 | $\begin{array}{llll}2 & 16 & 3\end{array}$ | 37 | 3189 | 4 10 0 | 5 I 3 |
| 140 | $2 \begin{array}{lll}28 & 4\end{array}$ | 310 | 4 l | 413 | 5 5 5 |
| 145 | 3 ○ 5 | 312 | 447 | 4 I6 8 | 588 |
| 150 | 326 | 315 | 476 | 500 | 5126 |
| 155 | $\begin{array}{lll}3 & 4 & 7\end{array}$ | 317 | 4 10 5 | $\begin{array}{lll}5 & 3 & 4\end{array}$ | 5163 |
| 160 | $3{ }^{3} 68$ | 4 \% | 4134 | $\begin{array}{llll}5 & 6 & 8\end{array}$ | 600 |
| $\underline{165}$ | $\begin{array}{lll}3 & 8 & 9\end{array}$ | 42 | 4163 | 5 10 0 | $\begin{array}{lll}6 & 3 & 9\end{array}$ |
| 170 | 31010 | 45 | 4192 | $\begin{array}{llll}5 & 13 & 4\end{array}$ | 676 |
| 175 | 31211 | 47 | 521 | 5168 | 6 II 3 |
| 180 | 3150 | 4 1о | 550 | 6 - | 615 - |
| 185 | 3171 | 412 | 5711 | $\begin{array}{lll}6 & 3 & 4\end{array}$ | 6189 |
| 190 | 3192 | 415 | 5 10 10 | 6 6 | 726 |
| 195 | $\begin{array}{lll}4 & 1 & 3\end{array}$ | 417 | 5139 | 610 - | 76 |
| 200 |  | 50 | 5168 | 6134 | 7 10 |

For explanation see p. 40

| Income | TAX THEREON AT PER ¢ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $5 d$. | $6 d$. | $7 d$. | $8 d$ | $9 d$. |
| $\pm$ | $\begin{array}{lll}* & s & d .\end{array}$ | $\begin{array}{lll}\text { f } & s . & d \\ 5 & 2 & 6\end{array}$ |  | f 8. $d$ <br> 6   <br>  ¢ 8 |  |
| 205 | $\begin{array}{lll}4 & 5 & 5\end{array}$ | $\begin{array}{lll}5 & 2 & 6 \\ 5 & 5 & 0\end{array}$ | $\begin{array}{llll}5 & 19 & 7 \\ 6 & 2 & 6\end{array}$ | $\begin{array}{llll}6 & 16 & 8 \\ 7 & 0 & 0\end{array}$ | 7 I 3 |
| 210 | $\begin{array}{llll}4 & 7 & 6 \\ 4 & 9 & 7\end{array}$ | $\begin{array}{lll}5 & 5 & 0 \\ 5 & 7 & 6\end{array}$ | $\begin{array}{lll}6 & 2 & 6 \\ 6 & 5 & 5\end{array}$ | $\begin{array}{lll}7 & 0 & 0 \\ 7 & 3 & 4\end{array}$ | 717 8 8 |
| 215 220 | $\begin{array}{lrrr}4 & 9 & 7 \\ 4 & 11 & 8\end{array}$ | $\begin{array}{lrr}5 & 7 & 6 \\ 5 & 10 & 0\end{array}$ | $\begin{array}{llll}6 & 5 & 5 \\ 6 & 8 & 4\end{array}$ | $\begin{array}{lll}7 & 3 & 4 \\ 7 & 6 & 8\end{array}$ | 8 8 8 8 |
| 220 | $\begin{array}{llll}4 & 11 & 8 \\ 4 & 13 & 9\end{array}$ | $\begin{array}{lll}5 & 10 \\ 5 & 12 & 0\end{array}$ | $\begin{array}{llll}6 & 8 & 4 \\ 6 & 11 & 3\end{array}$ | 7 10 0 | 88 |
| 230 | 415 1C | 5150 | 6142 | 7134 | 812 |
| 235 | 41711 | 5176 | 617 I | 7168 | 816 |
| 240 | 500 | 6 0 0 | 7 - 0 | 8 - 0 | 9 - |
| 245 | 521 | $6 \quad 26$ | 7211 | 834 | 93 |
| 250 | $\begin{array}{lll}5 & 4 & 2\end{array}$ | 650 | 7510 | 868 | 97 |
| 255 | $\begin{array}{lll}5 & 6 & 3\end{array}$ | 676 | $\begin{array}{lll}7 & 8 & 9\end{array}$ | 8 10 0 | 9 II |
| 260 | $\begin{array}{lll}5 & 8\end{array}$ | 610 o | 7118 | 8134 | 915 |
| 265 | 5 10 5 | 6126 | 7147 | 8168 | 918 |
| 270 | 512.6 | 6150 | 7176 | $9 \bigcirc 0$ | 102 |
| 275 | 514 | 6176 | 8 O 5 | 934 | 106 |
| 280 | .5 5168 | 700 | 834 | 968 | 1010 |
| 285 | ${ }_{5}^{5} 189$ | $7 \quad 26$ | 886 | $910 \quad 0$ | 1013 |
| 290 | 6 0 10 | 750 | $8{ }^{8} 9$ | $9 \begin{array}{lll}13 & 4\end{array}$ | 1017 |
| 295 | $6 \quad 211$ | $7 \quad 76$ | 8 I2 1 | 9168 | 11 I |
| 300 | 650 | 710 | 815 o | 1000 | II 5 |
| 305 | $\begin{array}{llll}6 & 7 & 1\end{array}$ | 7126 | $8 \mathrm{I7}$ II | $\begin{array}{lll}10 & 3 & 4\end{array}$ | II 8 |
| 310 | $6 \quad 9 \quad 2$ | 7150 | 9 o io | 1068 | 1112 |
| 315 | 6 II 3 | 7176 | 939 | 10100 | 1116 |
| 320 | $\begin{array}{lll}613 & 4\end{array}$ | 8 - 0 | 968 | 10134 | 120 |
| 325 | 615 | $8 \quad 26$ | 997 | 10168 | 123 |
| 330 | 617 <br> 6 | 8850 | 9126 | 1100 | 127 |
| 335 | $\begin{array}{llll}6 & 19 & 7\end{array}$ | 876 | 9155 | $\begin{array}{llll}11 & 3 & 4\end{array}$ | 1211 |
| 340 | $\begin{array}{lll}7 & 1 & 8\end{array}$ | 8 10 0 | 9 I8 4 | $\begin{array}{lll}11 & 6 & 8\end{array}$ | 1215 |
| 345 | $\begin{array}{lll}7 & 3 & 9\end{array}$ | 8126 | 10 I 3 | 11 10 | 1218 |
| 350 | $7 \quad 510$ | 8150 | IO 4 | 11 13 | 132 |
| 355 | 7711 | 8176 | 10 7 | 11 16 | 136 |
| 360 | 7100 | 900 | 10 Io 0 | 1200 | 1310 |
| 365 | 7121 | 926 | 1012 II | $\begin{array}{llll}12 & 3 & 4\end{array}$ | 1313 |
| 370 | 7142 | 950 | 101510 | 1268 | 1317 |
| 375 | 7163 | 976 | 10 189 | 1210 | 14 I |
| 380 | $7 \begin{array}{ll}18 & 4\end{array}$ | 9100 | $\begin{array}{llll}11 & 1 & 8\end{array}$ |  | 145 |
| 385 | 8 O 5 | 9126 | $\begin{array}{ll}11 & 4 \\ \\ \text { 11 }\end{array}$ | 12168 | 148 |
| 390 | 826 | 9150 | $\begin{array}{ll}11 & 76\end{array}$ | 1300 | 1412 |
| 395 | 887 | 9176 | II 105 | $\begin{array}{llll}13 & 3 & 4\end{array}$ | 1416 |
| 400 | 868 | 10 O | $\begin{array}{ll}\text { II } 113 & 4\end{array}$ | 1368 | 150 |
| 405 | $\begin{array}{llll}8 & 8 & 9\end{array}$ | 1026 | $\begin{array}{ll}\text { II } & \text { I6 } \\ \\ \text { II }\end{array}$ | 13100 | 153 |
| 410 | 8 10 10 | 1050 | 11 19 | 13134 | 157 |
| 415 | 8 I2 II | 10 76 | 1221 | 13168 | 1511 |
| 420 | 8 8 150 | Io Io o | 1250 | 14 O 0 | 1515 |
| 425 | 817 I | 10126 | 12711 | $\begin{array}{llll}14 & 3 & 4\end{array}$ | 1518 |
| 430 | 819 z | 10150 | 121010 | 1468 | 162 |
| 435 | $\begin{array}{llll}9 & 1 & 3\end{array}$ | 10176 | 12139 | 14 10 0 | 166 |
| 440 | 9334 | 1100 | $\begin{array}{llll}12 & 16 & 8\end{array}$ | 14 13 4 | 1610 |
| 445 |  | $\begin{array}{lll}\text { II } & 2 & 6\end{array}$ | $\begin{array}{llll}12 & 19 & 7\end{array}$ | $\begin{array}{llll}14 & 16 & 8 \\ 15 & \end{array}$ | 1613 |
| 450 | 976 | II 50 | $13 \quad 26$ | 1500 | 1617 |

## £455-700

| Income | TAX THEREON AT PER £ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $5 d$. | $6 d$. |  | $7 d$. | 8d. | $9 d$. |
| $\stackrel{\text { ¢ }}{45}$ | $\begin{array}{ccc}\text { f } & s . & d . \\ 9 & 9 & 7\end{array}$ | $\begin{array}{ccc} \pm & s . & \\ 11 & 7 & \\ 11 & \end{array}$ |  | $\begin{array}{ccc}\text { L } & s . & d . \\ 13 & 5 & 5\end{array}$ | $\begin{array}{ccc}\text { ¢ } & \text { s. } & d . \\ 15 & 3 & 4\end{array}$ |  |
| 455 460 | $\begin{array}{lrrr}9 & 9 & 7 \\ 9 & 11 & 8\end{array}$ | 1110 |  | $\begin{array}{llll}13 & 5 & 5 \\ 13 & 8 & 4\end{array}$ | $\begin{array}{llll}15 & 3 & 4 \\ 15 & 6 & 8\end{array}$ | $\begin{array}{llll}17 & 5 & 3 \\ 17 & 8 & \end{array}$ |
| 460 | $\begin{array}{llll}9 & 11 & 8 \\ 9 & \text { I3 } & \\ 9\end{array}$ | II 12 | 6 | $\begin{array}{llll}13 & \text { II } & 3 \\ 13\end{array}$ | 15 10 0 | $\begin{array}{llll}17 & 8 & 9\end{array}$ |
| 470 | 915 10 | 1115 |  | 1314 | $\begin{array}{lll}15 & 13 & 4\end{array}$ | 17126 |
| 475 | 91711 | 1117 |  | 1317 | 15168 | I7 16 |
| 480 | 1000 | 120 | 0 | 14 O 0 | 16 ○ 0 | 18 O |
| 485 | 1021 | 122 | 6 | 14211 | $\begin{array}{lll}16 & 3 & 4\end{array}$ | 18 18 9 |
| 490 | 10 42 | 125 |  | 14.510 | $16 \quad 68$ | $18 \quad 76$ |
| 495 | 10 68 | $\begin{array}{lll}12 & 7 \\ 12\end{array}$ |  | 1488 | 16 10 0 | 18 II 3 |
| 500 | $\begin{array}{llll}10 & 8 & 4\end{array}$ | 12 IO | 0 | 14118 | 16134 | 18 I5 0 |
| 505 | 10105 | 1212 | 6 | 1414 | 1616 | 1818 |
| 510 | 10126 | 1215 | 0 | 14176 | 17 O 0 | 1926 |
| 515 | 10147 | 1217 | 6 | 15 o 5 | $\begin{array}{llll}17 & 3 & 4\end{array}$ | 1963 |
| 520 | 10168 | 130 | 0 | $15 \quad 34$ | 176.8 | 19 10 0 |
| 525 | 10189 | 132 | 6 | 1563 | 1710 | 19139 |
| 530 | 11010 | 135 | 0 | 159 | $\begin{array}{llll}17 & 13 & 4\end{array}$ | 19 I7 |
| 535 | 11211 | 13 | 6 | 1512 I | 17168 | 20 I |
| 540 | 1150 | 1310 | $\bigcirc$ | 15150 | 18 o o | 205 |
| 545 | 117 | 1312 | 6 | 1517 II | $\begin{array}{lll}18 & 3 & 4\end{array}$ | 2089 |
| 550 | $\begin{array}{llll}11 & 9 & \end{array}$ | 1315 | $\bigcirc$ | 16 0 10 | 1868 | 2012 |
| 555 | $\begin{array}{lll}\text { II } & \text { II } & 3\end{array}$ | 1317 | 6 | $16 \quad 39$ | 18 10 0 | 2016 |
| 560 | $\begin{array}{ll}\text { II } 13 & 4\end{array}$ | 14 o | 0 | $16 \quad 68$ | 18134 | 210 |
| 565 | $\begin{array}{llll}11 & 15 & 5\end{array}$ | $14 \quad 2$ | 6 | $\begin{array}{llll}16 & 9 & 7\end{array}$ | 18168 | 213 |
| 570 | $\begin{array}{ll}11 & 176\end{array}$ | 145 | 0 | 16126 | 19 o o | 217 |
| 575 | $\begin{array}{llllllllllllllllllll}11 & 19 & 7\end{array}$ | 147 |  | 16155 | $\begin{array}{lll}19 & 3 & 4\end{array}$ | 2111 |
| 580 | 12 I | 14 Io | 0 | 1618 | $\begin{array}{lll}19 & 6 & 8\end{array}$ | 2115 |
| 585 | $\begin{array}{llll}12 & 3 & 9\end{array}$ | 1412 | 6 | $\begin{array}{lll}17 & 1 & 3\end{array}$ | 19 10 0 | 2118 |
| 590 | 12510 | 1415 | - | 174 | $\begin{array}{lll}19 & 13 & 4\end{array}$ | 222 |
| 595 | 12711 | 1417 | 6 | 177 | $\begin{array}{llll}19 & 16 & 8\end{array}$ | 226 |
| 600 | 12100 | 150 |  | 17 10 0 | 2000 | 2210 |
| 605 | 1212 | 152 | 6 | 171211 |  |  |
| 610 | 1214 | 155 | o | 171510 | $\begin{array}{llll}20 & 6 & 8\end{array}$ | 2217 |
| 615 | 12163 | 157 | 6 | 17 18 9 | 20 Io 0 | 231 |
| 620 | 12 18 | 1510 | 0 | $\begin{array}{lll}18 & 1 & 8\end{array}$ | 20134 | 235 |
| 625 | 1305 | 1512 |  | $18 \quad 47$ | 20168 | 238 |
| 630 | $13 \quad 26$ | 1515 | 0 | $18 \quad 76$ | 2100 | 2312 |
| 635 | $\begin{array}{lll}13 & 4 & 7 \\ 13 & 6\end{array}$ | 1517 | 6 | 18 10 5 | $\begin{array}{lll}21 & 3 & 4\end{array}$ | 2316 |
| 640 | $\begin{array}{lll}13 & 6 & 8\end{array}$ | 160 | - | 18134 | $\begin{array}{llll}21 & 6 & 8\end{array}$ | 24 o |
| 645 | $\begin{array}{llll}13 & 8 & 9\end{array}$ | 162 |  | 18 16 | 2 I 10 | 243 |
| 650 | 131010 | 165 | - | 18192 | 21134 | $24 \quad 7$ |
| 655 | 1312 II | 167 | 6 | 1921 | 21168 | 24 II |
| 660 | 13150 | 1610 | - | 1950 | 22 ○ o | 2415 |
| 665 | 1317 | 1612 | 6 | 19711 | $\begin{array}{llll}22 & 3 & 4\end{array}$ | 2418 |
| 670 | 13192 | 1615 | - | 19 10 10 | $\begin{array}{llll}22 & 6 & 8\end{array}$ | 252 |
| 675 | 14 I 3 | 1617 | 6 | 19139 | 22100 | 256 |
| 680 | $\begin{array}{llll}14 & 3 & 4\end{array}$ | 17 o | 0 | 19168 | $\begin{array}{llll}22 & 13 & 4\end{array}$ | 2510 |
| 685 | $\begin{array}{llll}14 & 5 & 5\end{array}$ | 172 | 6 | 19197 | $\begin{array}{llll}22 & 16 & 8\end{array}$ | 2513 |
| 690 | $\begin{array}{llll}14 & 7 & 6\end{array}$ | 175 | 0 | 2026 | 23 o o | 2517 |
| 695 | $\begin{array}{llll}14 & 9 & 7\end{array}$ | 177 | 6 | $\begin{array}{lll}20 & 5 & 5\end{array}$ | $\begin{array}{lll}23 & 3 & 4\end{array}$ | 261 |
| 700 | 14 II 8 | 1710 | 0 | 2088 | $23 \quad 68$ | 265 |

£705-1,000

£1,010-1,500

| Income | TAX THEREON AT PER £ |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $5 d$. | $6 d$. |  | $7 d$. | $8 d$ | 9 d. |  |
| ¢ |  | $\begin{array}{cc}2 & 8 \\ 25 & 5 \\ 25\end{array}$ |  | L s. d. <br> 29   <br> 9   |  | $\begin{array}{cc} \mathcal{L} & s \\ 37 & 17 \end{array}$ | $\begin{aligned} & d . \\ & 6 \\ & \hline \end{aligned}$ |
| 1,010 | $\begin{array}{lll}21 & 0 & 10 \\ 21 & 5 & 0\end{array}$ | 2510 | - | 29150 | 34 0 o | 385 | - |
| 1,020 1,030 | $\begin{array}{lll}21 & 5 & 0 \\ 21 & 9 & 2\end{array}$ | 2515 | $\bigcirc$ | 30 0 10 | $\begin{array}{lll}34 & 6 & 8\end{array}$ | 3812 | 6 |
| 1,040 | $\begin{array}{lll}21 & 13 & 4\end{array}$ | 26 O | $\bigcirc$ | $\begin{array}{llll}30 & 6 & 8\end{array}$ | 34134 | 39 - | - |
| 1,050 | 21176 | $26 \quad 5$ | - | 30 I 2 | 35 - | 397 | 6 |
| 1,060 | $\begin{array}{lll}22 & 1 & 8\end{array}$ | 2610 | - | 3018 | 356 | 39 I5 | $\bigcirc$ |
| 1,070 | 22510 | 2615 | - | 31.4 | 3513 | $40 \quad 2$ | 6 |
| 1,080 | 22 10 0 | 27 O | c | 3110 | 36 - | 40 to |  |
| 1,090 | $\begin{array}{llll}22 & 14 & 2\end{array}$ | $27 \quad 5$ | - | 311510 | 366 | 4017 | 6 |
| 1,100 | $\begin{array}{llll}22 & 18 & 4\end{array}$ | 27 10 | - | $32 \begin{array}{lll}32 & 1 & 8\end{array}$ | 3613 | 415 | 0 |
| 1,110 | $23 \quad 26$ | 2715 | - | 327 | 37 - | 4112 | 6 |
| 1,120 | $\begin{array}{lll}23 & 6 & 8\end{array}$ | 28 o | 0 | $32 \cdot 134$ | 376 | 42 ○ |  |
| I, 130 | 23 10 10 | 285 | - | 32192 | 3713 | 427 | 6 |
| I,I40 | 23 15 | 28 10 | - | 3350 | 38 - | 42 I5 | 0 |
| .1,150 | 23192 | 2815 | 0 | 33 10 10 | 386 | 432 | 6 |
| I, 160 | $\begin{array}{lll}24 & 3\end{array}$ | 29 o | $\bigcirc$ | 33168 | 3813 | 43 10 | 0 |
| 1,170 | $24 \quad 76$ | 295 | - | $\begin{array}{lll}34 & 2 & 6\end{array}$ | 39 0 | 4317 | 6 |
| 1,180 | 24 II 8 | 2910 | - | 3488 | 396 | 445 | - |
| 1,190 | 2415 10 | 2915 | - | 34142 | 3913 | 4412 | 6 |
| 1,200 | 2500 | 30 o | 0 | 35 ○ o | 40 o | 450 | $\bigcirc$ |
| 1,210 | $25 \quad 4 \quad 2$ | 305 | - | $35 \quad 510$ | 406 | 457 | 6 |
| 1,220 | 2584 | 3010 | - | 35 II 8 | 40 I3 | 45 I5 | - |
| 1,230 | $\begin{array}{llll}25 & 12 & 6\end{array}$ | 3015 | $\bigcirc$ | 3517 | 41 O | 462 | 6 |
| 1,240 | 25168 | 31 | - | 363 | 416 | 46 Io |  |
| 1,250 | 26 0 10 | 315 | 0 | 369 | 4113 | 4617 | 6 |
| 1,260 | $26 \quad 50$ | 3110 | $\bigcirc$ | 36150 | 42 - | 475 | 0 |
| 1,270 | $26 \quad 9 \quad 2$ | 3115 | $\bigcirc$ | 37 ○ 10 | 426 | 4712 |  |
| 1,280 | 26134 | 32 - | - | 3768 | 4213 | 48 o |  |
| 1,290 | 26176 | 325 | 0 | 3712 | 43 ㅇ | 487 | 6 |
| 1,300 | 27 1 8 | 32 10 | 0 | 3718 | 43 | 48 I5 | 0 |
| 1,310 | 27510 | 3215 | o | $\begin{array}{lll}38 & 4 & 2\end{array}$ | 4313 | 492 | 6 |
| 1,320 | 27100 | 33 - | - | 38 10 o | 44 o | 49 10 |  |
| 1,330 | 27142 | 335 | - | 3815 10 | 446 | 4917 | 6 |
| I,340 | 27184 | 3310 | - | 3918 | 4413 | 505 | - |
| 1,350 | $28 \quad 26$ | 3315 | 0 | $\begin{array}{llll}39 & 7 & 6\end{array}$ | 45 o | 5012 | 6 |
| 1,360 | $28 \quad 68$ | 34 - | - | 39 I3 4 | 456 | 510 |  |
| 1,370 | 281010 | 345 | - | 39192 | 4513 | 51 | 6 |
| I,380 | 28150 | 3410 | - | 4050 | 460 | 5115 | - |
| I,390 | 28 19 2 | 3415 | - | 40 Io 10 | 466 | 522 | 6 |
| 1,400 | $29 \quad 3$ | 35 - | - | 4016 | 46 I3 | 5210 | $\bigcirc$ |
| 1,410 | 2976 | 355 | 0 | 412 | 47 o | 5217 | 6 |
| 1,420 | 29 II 8 | 3510 | 0 | 4188 | 476 | 535 | - |
| I, 430 | 291510 | 3515 | - | 4114 | 4713 | 53 12 | 6 |
| 1,440 | $30 \% 0$ | 36 - | - | 42 ○ o | 48 o | 54 - | - |
| 1,450 | 3042 | $36 \quad 5$ | - | $42 \quad 510$ | 486 | 547 | 6 |
| 1,460 | $\begin{array}{llll}30 & 8 & 4\end{array}$ | 3610 |  | 42 II 8 | 4813 |  |  |
| I,470 | 30126 | 3615 | 0 | 42176 | 49 - | 552 | 6 |
| 1,480 | 30168 | 37 - | 0 | $43 \begin{array}{lll}43 & 3\end{array}$ | 496 | 55 ıо | 0 |
| 1,490 | 310 | 375 | - | $\begin{array}{llll}43 & 9 & 2\end{array}$ | 4913 | 5517 | 6 |
| 1,500 | 3150 | 3710 | 0 | 43150 | 50 - | 565 | 0 |


| Income | TAX THEREON AT PER \& |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $5 d$. | $6 d$. |  | 7 d. | $8 d$ |  | 9d. |  |
| $\underset{\text { 1,510 }}{ }$ |  | $\begin{array}{cc} \pm & 8 . \\ 37 \\ 37 & 15\end{array}$ |  |  | $\begin{array}{cc} \pm \\ 50 & 3 . \\ 50\end{array}$ |  |  |  |
| 1,510 $\mathbf{1}, 520$ | $\begin{array}{llll}31 & 9 & 2 \\ 31 & 13 & 4\end{array}$ | 37 15 <br> 38  |  | $\begin{array}{lll}44 & 0 & \text { IO } \\ 44 & 6 & 8\end{array}$ | $\begin{array}{r}50 \\ 50 \\ 50 \\ \hline 13\end{array}$ |  | 5612 57 50 | 6 |
| 1,520 1,530 | $\begin{array}{llll}31 & 13 & 4 \\ 31 & 17 & 6\end{array}$ | $\begin{array}{ll}38 & 0 \\ 38 & 5\end{array}$ | $\bigcirc$ | $\begin{array}{rrr}44 & 6 & 8 \\ 44 & 12 & 6\end{array}$ | $\begin{array}{llll}50 & 13 \\ 51 & 0\end{array}$ |  | 57 57 57 |  |
| 1,530 $\mathrm{I}, 540$ | $\begin{array}{crrrr}31 & 17 & 6 \\ 32 & 1 & 8\end{array}$ | (1) | - | $\begin{array}{lll}44 & 12 & 6 \\ 44 & 18 & 4\end{array}$ | $\begin{array}{ll}51 & 0 \\ 51 & 6\end{array}$ |  | 57 57 57 | ${ }^{6}$ |
| r,540 $\mathbf{r}, 550$ | $\begin{array}{ccc}32 & 1 & 8 \\ 32 & 5 & \text { 10 }\end{array}$ | 38 38 |  | $\begin{array}{rrrr}44 & 18 & 4 \\ 45 & 4 & 2\end{array}$ | 51 | 4 | 58 | 6 |
| 1,560 | 32 10 0 | 39 - | 0 | 45 10 0 | 520 |  | 58 ıо |  |
| 1,570 | 32142 | 395 | 0 | 451510 | 526 | 8 | 5817 | 6 |
| r,580 | $\begin{array}{llll}32 & 18 & 4\end{array}$ | 39 то | $\bigcirc$ | 46 I 8 | 5213 | 4 | 595 | - |
| 1,590 | $\begin{array}{lll}33 & 2 & 6\end{array}$ | 39 I5 | $\bigcirc$ | $\begin{array}{llll}46 & 7 & 6\end{array}$ | 53 - | $\bigcirc$ | 5912 | 6 |
| 1,600 | $\begin{array}{lll}33 & 6 & 8\end{array}$ | 40 - | $\bigcirc$ | 46134 | 536 | 8 | 60 o | $\bigcirc$ |
| 1,610 | 33 10 10 | 405 | 0 | 46 I9 2 | 5313 | 4 | 607 | 6 |
| I,620 | 33150 | 40 IO | 0 | $47 \quad 50$ | 54 - | - | 6015 | - |
| 1,630 | 33192 | 4015 | 0 | 47 10 10 | 546 | 8 | 612 | 6 |
| 1,640 | $\begin{array}{llll}34 & 3 & 4\end{array}$ | 4 I | 0 | 47168 | 5413 | 4 | 61 to | 0 |
| 1,650 | 3476 | 415 | 0 | $\begin{array}{llll}48 & 2 & 6\end{array}$ | 55 o | - | 6117 | 6 |
| 1,660 | 34 II 8 | 4110 | 0 | 488 | 556 | 8 | 625 | - |
| 1,670 | 341510 | 41 I 5 | $\bigcirc$ | 48 14 | 5513 | 4 | 62 r 2 | 6 |
| 1,680 | 3500 | 420 | o | 49 0 | 56 | 8 | 63 o | $\bigcirc$ |
| 1,690 | $\begin{array}{llll}35 & 4 & 2\end{array}$ | 425 | $\bigcirc$ | 49510 | 566 | 8 | 637 | 6 |
| 1,700 | $\begin{array}{llll}35 & 8 & 4\end{array}$ | 42 10 | 0 | 49 II 8 | 5613 | 4 | 63 I5 | 0 |
| 1,710 | 35126 | 4215 | 0 | $\begin{array}{lllll}49 & 17 & 6\end{array}$ | 57 ○ | $\bigcirc$ | 642 | 6 |
| 1,720 | 35168 | 43 - | 0 | $\begin{array}{llll}50 & 3 & 4\end{array}$ | 576 |  | 6410 | 0 |
| 1,730 | 36 ○ 10 | 435 | O | $\begin{array}{lll}50 & 9 & 2\end{array}$ | 57 I 3 | 4 | 6417 | 6 |
| 1,740 | $\begin{array}{lll}36 & 5 & \circ\end{array}$ | 4310 | 0 | 50150 | 58 | - | 655 | 0 |
| 1,750 | $\begin{array}{lll}36 & 9 & 2\end{array}$ | 4315 | 0 | 5 5 ○ 10 | 586 | 8 | 6512 | 6 |
| 1,760 | $\begin{array}{lllll}36 & 13 & 4\end{array}$ | 44 o | - | $\begin{array}{llll}51 & 6\end{array}$ | 5813 | 4 | 66 o | 0 |
| 1,770 | $\begin{array}{llll}36 & 17 & 6\end{array}$ | 445 | - | $\begin{array}{lll}51 & 12 & 6\end{array}$ | $59 \bigcirc$ | - | $66{ }_{6}^{6} \quad 7$ | 6 |
| 1,780 | 37 I 8 | 44 Io | 0 | $\begin{array}{llll}51 & 18 & 4\end{array}$ | 596 | 8 | 6615 | 0 |
| 1,790 | $37 \quad 510$ | 4415 | - | $\begin{array}{lll}52 & 4 & 2\end{array}$ | 5913 | 4 | 672 | 6 |
| I,800 | 37100 | 45 - | - | 52 10 0 | 60 - | - | 67 10 | $\bigcirc$ |
| 1,8io | $\begin{array}{llll}37 & 14 & 2\end{array}$ | $45 \quad 5$ | - | 5215 10 | 606 | 8 | 67 I 7 | 6 |
| 1,820 | $\begin{array}{llll}37 & 18 & 4\end{array}$ | 4510 | - | 53 I 8 | 6013 | 4 | 685 | 0 |
| 1,830 | $\begin{array}{lll}38 & 2 & 6\end{array}$ | 4515 | - | $\begin{array}{llll}53 & 7 & 6\end{array}$ | 610 | - | 68 I 2 | 6 |
| 1,840 | $\begin{array}{llll}38 & 6 & 8 \\ 38 & 10\end{array}$ | 46 o | - | $\begin{array}{llll}53 & 13 & 4\end{array}$ | 616 | 8 | 69 - | 0 |
| 1,850 | 38 го го | $46 \quad 5$ | - | 53 <br> 19 | 6 T 13 | 4 | 697 | 6 |
| 1,860 | 38150 | 4610 |  | 5450 | 62 0 | 0 | 6915 | 0 |
| 1,870 | 38192 | 4615 | - | 541010 | 626 | 8 | 702 | 6 |
| 1,880 | $\begin{array}{lll}39 & 3 & 4\end{array}$ | 47 - | 0 | 54168 | 6213 | 4 | 70 10 | $\bigcirc$ |
| 1,890 | 39 7 <br> 15  | 475 | - | $\begin{array}{lll}55 & 2 & 6\end{array}$ | 63 - |  | 7017 | 6 |
| 1,900 | 39 II 8 | 4710 | - | $\begin{array}{lll}55 & 8 & 4\end{array}$ | 636 |  | 715 | $\bigcirc$ |
| 1,910 | 391510 | 4715 | - | $5514 \quad 2$ |  |  | 7112 | 6 |
| 1,920 | 40 O 0 | 48 - | - | 56 - o | 64 - | - | 72 o | - |
| 1,930 | 40 | 48 | 0 | 56 5 10 | $64 \quad 6$ | 8 | 727 | 6 |
| 1,940 | $\begin{array}{lll}40 & 8 & 4\end{array}$ | 4810 | $\bigcirc$ | 56118 | 6413 | 4 | 7215 | - |
| 1,950 | 40126 | 48 I 5 | - | 56176 | 65 - | - | 732 | 6 |
| 1,960 | 40168 | 49 o | - | $\begin{array}{lll}57 & 3 & 4\end{array}$ | 656 | 8 | 7310 | 0 |
| 1,970 | 410 | 495 | O | $\begin{array}{llll}57 & 9 & 2\end{array}$ | 6513 | 4 | 7317 | 6 |
| 1,980 | 4150 | 49 10 | 0 | 57150 | 66 \% | - | 745 | 0 |
| 1,990 | 4 I 9 | 4915 | $\bigcirc$ | 5880 | 666 | 8 | 7412 | 6 |
| 2,000 | 4113 | 50. | 0 | $58 \quad 68$ | 66 I3 | 4 | 75 - | - |

£2,050-5,000

| Income | TAX THEREON AT PER £ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $5 d$. | $6 d$. | $7 d$. | $8 d$. | 9d. |
| $\pm$ 2,050 | $\begin{array}{lll}\text { E } & s . & d . \\ 42 & 14 & 2\end{array}$ |  |  | 8 $s$. $d$. <br> 68 6 8 | $\begin{array}{cccc}\text { t } & s . & \\ 76 \\ 76 & 17 & 6\end{array}$ |
| 2,050 | $\begin{array}{llll}42 & 14 & 2\end{array}$ | $\begin{array}{lll}51 & 5 & 0 \\ 52 & 10\end{array}$ | 59 I5 50 | $\begin{array}{llll}68 & 6 & 8 \\ 70 & 0 & 0\end{array}$ | $\begin{array}{llll}76 & 17 & 6 \\ 78 & 15 & 0\end{array}$ |
| 2,100 | 43150 | 52100 | 6150 | 70 00 | $\begin{array}{llll}78 & 15 & 0 \\ 80 & 12 & 6\end{array}$ |
| 2,150 | 441510 | 53150 | $\begin{array}{llll}62 & 14 & 2 \\ 64 & 3 & 4\end{array}$ | $\begin{array}{llll}71 & 13 & 4 \\ 73 & 6 & 8\end{array}$ | $\begin{array}{llll}80 & 12 & 6 \\ 82 & 10 & 0\end{array}$ |
| 2,200 | 45168 | 550 | $\begin{array}{llll}64 & 3 & 4\end{array}$ | $\begin{array}{llll}73 & 6 & 8\end{array}$ | 82 10 8 |
| 2,250 | $46 \quad 176$ | 56 | 65126 | 75 oo | 8476 |
| 2,300 | $\begin{array}{lll}47 & 18 & 4\end{array}$ | 57100 | 67 1 8 | 7613 <br> 8 | 86 |
| 2,350 | 48192 | 58150 | 68 10 10 | $\begin{array}{llll}78 & 6 & 8\end{array}$ | $88 \quad 26$ |
| 2,400 | 50 | 6000 | 70 0 0 | 80 o 0 | 90 0 0 |
| 2,450 | 51010 | 6150 | 719 | 8 I 134 | 91176 |
| 2,500 | 52 1 8 | 62100 | $\begin{array}{llll}72 & 18 & 4\end{array}$ | 8368 | 9315 o |
| 2,550 | $\begin{array}{lll}53 & 2 & 6\end{array}$ | 63150 | $\begin{array}{llll}74 & 7 & 6\end{array}$ | 85 o o | 95126 |
| 2,600 | $\begin{array}{lll}54 & 3\end{array}$ | 65 o o | 75168 | 86134 | 97 10 o |
| 2,650 | $\begin{array}{lll}55 & 4 & 2\end{array}$ | $66 \quad 50$ | 77510 | 8868 | 9976 |
| 2,700 | 56 | 67100 | 78150 | 90 o o | 10150 |
| 2,750 | 57510 | 68150 | $80 \quad 4 \quad 2$ | 91134 | 10326 |
| 2,800 | $\begin{array}{lll}58 & 6 & 8\end{array}$ | 70 0-0 | 8 81 134 | 9368 | 1050 |
| 2,850 | $\begin{array}{lll}59 & 7 & 6\end{array}$ | 7 l 510 | 8326 | 95 o o | $\begin{array}{llll}106 & 17 & 6\end{array}$ |
| 2,900 | 6084 | 72100 | 84118 | 96134 | 108150 |
| 2,950 | 6192 | 73150 | 86 о 10 | $98 \quad 68$ | 110126 |
| 3,000 | 62 то 0 | 75 ○ 0 | 87 10 | 1000 | 112 10 0 |
| 3,050 | 631010 | $76 \quad 50$ | 88192 | $\begin{array}{llll}101 & 13 & 4\end{array}$ | $\begin{array}{lll}114 & 7 & 6\end{array}$ |
| 3,100 | 64 II 8 | 77100 | 9084 | 10368 | 11650 |
| 3,150 | 65126 | 78150 | 91176 | 1050 | 11826 |
| 3,200 | $\begin{array}{llll}66 & 13\end{array}$ | 8000 | $\begin{array}{lll}93 & 6 & 8\end{array}$ | 106134 | $120 \quad 0$ |
| 3,250 | 67142 | 8150 | 941510 | 10868 | 121176 |
| 3,300 | 68150 | 82100 | $96 \quad 50$ | 110 | 123150 |
| 3,350 | $\begin{array}{lllll}69 & 15 & 10 \\ 70\end{array}$ | 83150 | 9714 | 11113 | 125126 |
| 3,400 | 70 16 | 8500 | $\begin{array}{ll}99 & 3\end{array}$ | 11368 | 127100 |
| 3,450 | $\begin{array}{llll}71 & 17 & 6\end{array}$ | 8650 | 100126 | 1150 | 12976 |
| 3,500 | $\begin{array}{llllll}72 & 18 & 4\end{array}$ | 87 10 о | 102 I 8 | 116134 | 13150 |
| 3,550 | $\begin{array}{llll}73 & 19 & 2\end{array}$ | 88150 | 103 10 10 | 11868 | 13326 |
| 3,600 | 75 0 0 | 90 - 0 | 1050 | $120 \quad 0$ | 135 ○ 0 |
| 3,650 | 76 0 10 | 9150 | $\begin{array}{llll}106 & 9\end{array}$ | 121134 | 136176 |
| 3,700 | 77 1 | 92100 | 107184 | 12368 | 138150 |
| 3,750 | $\begin{array}{lll}78 & 2 & 6\end{array}$ | 93150 | 10976 | 1250 | 140126 |
| 3,800 | $\begin{array}{lll}79 & 3 & 4\end{array}$ | 95 - 0 |  | 126134 | 142100 |
| 3,850 | 80 | $96 \quad 50$ | 112510 | 12868 | 14476 |
| 3,900 | 8 8 50 | 97 10 0 | 113150 | $130 \quad 0$ | 14650 |
| 3,950 | 82510 | 98150 | $\begin{array}{llll}115 & 4 \\ 116\end{array}$ | 131134 | 1485 |
| 4,000 | 8368 | 10000 |  | 13368 | $150 \quad 0$ |
| 4,100 | $\begin{array}{lll}85 & 8 & 4\end{array}$ | 10210 | 19 11 | $\begin{array}{llll}136 & 13 & 4\end{array}$ | 153150 |
| 4,200 | 87 10 0 | 1050 | 122100 | 140 o o | 157 10 0 |
| 4,300 | 89118 | 107100 | 12584 | 14368 | 16150 |
| 4,400 | 91 134 | IIO 0 | 12868 | 146134 | 165 o o |
| 4,500 | 93150 | I12 100 | 13150 | 15000 | 16815 o |
| 4,600 | 95168 | 11500 | $\begin{array}{llll}134 & 3 & 4\end{array}$ | 15368 | 172 10 0 |
| 4,700 | 97184 | II7 100 | 137 I 8 | $\begin{array}{llll}156 & 13 & 4\end{array}$ | 17650 |
| 4,800 | 1000 | 12000 | 140 O 0 | 160 o o | 180 o 0 |
| 4,900 | 102 I 8 | 120100 | $142 \begin{array}{lll}18 & 4\end{array}$ | 16368 | 18315 - |
| 5,000 | 10434 | 125 | 145168 | 166134 | 18710 |

For explazation see p. 40

THE

# LOGARITHMS OF NATURAL NUMBERS 

TOGETHER WITH
THOMAN'S LOGARITHMIC 'TABLES
of
COMPOUND INTEREST AND ANNUITIES
AND AN
EXPLANATION OF THE TABLES

## LOGARITHMS OF NATURAL NUMBERS

Pages 229-266 contain the logarithms of the natural numbers from 1 to ro,ooo.

The logarithm of a number is the index of the power to which the base must be raised to be equal to the number. Thus $5 \times 5=5^{2}$, where 5 is raised to the second power, and 2 is the index of the power. Again, $5 \times 5 \times 5=5^{3}$, where 5 is raised to the third power, and 3 is the index of the power. The base adopted for common logarithms such as are here given is 10 , so that the logarithm

$$
\begin{aligned}
& \text { of } 100 \text { is } 2 \text { because } 10^{2}=10 \times 10=102 \\
& \text { of } 1,000,3 \text { " } 10^{3}=10 \times 10 \times 10=r, 000 \\
& \text { of } 10,000,1,4 \quad 10^{4}=10 \times 10 \times 10 \times 10=10,000
\end{aligned}
$$

and so on. But we may raise a number to any power we please, without confining ourselves to whole numbers. Thus ${ }^{10} 0^{6566}=4^{.641}$ as may be seen from page 244, where 666612 is given as the logarithm of 4.64 r . Now $10^{6666}=10^{\frac{6866}{10000}}=10^{2}$ verynearly, but $10^{\frac{2}{3}}=\sqrt[3]{ } \sqrt{10^{2}}$ that is the cube root of 100 . The cube root of 100 is approximately $4^{.641}$, that is to say $4.64 \mathrm{I} \times 4^{.64 \mathrm{I}} \times 4^{.64 \mathrm{I}}=99^{\circ} 96$, which is very nearly 100. By means of logarithms we may get our results as nearly exact as we please, and the larger number of figures we have in our logarithms the more exact will our results be.

We have said that 6666 is the logarithm of $4 \cdot 64 \mathrm{r}$, but there is nothing in the table to show where the decimal point ought to come. For anythung that appears in the table to the contrary, 6666 is the $\log$ of 4641 , or 46.41 or $464^{\circ} \mathrm{I}$. The explanation of this is, that only one part of the logarithm, called the mantissa, is given in the table; the other part of the logarithm, called the index or characteristic, is supplied by inspection, according to certain rules which will be described presently. The rationale of these rules is very easy to follow. The mantissa is the decimal part of the index of the power to which ro must be raised to equal a given number, and if the index is 0 , it means that the power to which ro has to be raised is less than unity, but as $10^{1}$ or 10 to the first power $=10$, it is plain that $10^{6666}$ must be less than ro, whence it follows that the natural number corresponding to $\log \cdot 6666$ cannot be 46.4 or 464 , because these numbers are more than 10.

If we want to find the logarithm of 46.4 r , the complete logarithm must clearly be between 1 and 2, because $r$ is the logarithm of ro, 2 is the $\log$ of $r o o$ and 46 is between ro and roo. Clearly, therefore, the $\log$ of 46 must have $r$ for its index, and, looking in the table for the decimal part of the $\log$ corresponding to 464 r , we find it to be 6666 . Therefore the complete $\log$ of 46.4 r is $\mathrm{r} \cdot 6666$. This means that ro must be raised to a power the index of which is $r \cdot 6666$, that is to say $\quad 0^{10^{6666}}=r 0^{\frac{106060}{10000}}=10^{\frac{\Sigma}{3}}=\sqrt[3]{10^{5}}$. Now ro equals ro0,000, and the cube root of this is 46.4 r , more nearly 46.4 r 6 , more nearly still 46.4 r 58929 . The reason why the index part of the $\log$ can be so readily determined by inspection, and why therefore it is unnecessary to tabulate more than the mantissa or decimal part of the logarithm, is based upon the fact that multiplication of numbers can be performed by adding their logarithms together. Now, as we have just seen, the $\log$ of 10 is I , the $\log$ of $x 00$ is 2 , the $\log$ of $x, 000$ is 3 , and so on. Hence, if we want to multiply a number by ro, we add I to the $\log$; to multiply by roo we add 2 to the logarithm, and to multiply by $x, 000$ we add 3 to the logarithm of the number. Hence,

$$
\begin{aligned}
& 4 \cdot 641 \times 10=\log 0 \cdot 6666+\log x=\log 1 \cdot 6666=46 \cdot 4 x \\
& 46 \cdot 4 \mathrm{r} \times 10=\log \mathrm{r} \cdot 6666+\log x=\log 2 \cdot 6666=464^{\cdot} \cdot x \\
& 4^{6} 4^{\circ} \mathrm{r} \times 10=\log 2 \cdot 6666+\log x=\log 3 \cdot 6666=464 \mathrm{r} \\
& 4641 \times 10=\log 3 \cdot 6666+\log r=\log 4 \cdot 6666=464 r o
\end{aligned}
$$

This leads us to the rule for determining the index part of the logarithm. If the number whose logarithm is sought contain one or more integral figures the index or characteristic is always one less than the number of integral figures in the number, and is positive.

## Negative Index

Frequently, however, we have to deal with numbers that are less than unity, in which case the index of the logarithm becomes negative, although the decimal part remains positive. Dealing with these negative figures as we previously dealt with the positive ones, we see that

and so on. This leads us to the rule for finding the index of quantities less than unity, which is that the index is the same as the place (208).
from the decimal point which the first significant figure of the number occupies. Thus the first significant figure of oor is $r$, which is in the third place from the decimal point, and the index of the $\log$ is consequently $\overline{3}$, while the mantissa is o. This index, as stated above, is minus, the minus sign being written over the index thus $\overline{3}$, not in front of it thus -3 , in order to signify that the index only is minus, the mantissa remaining positive.

In dealing with numbers less than unity the mantissa is kept positive, and the index only is made negative for the sake of convenience in working ; but if there were any advantage in doing so the mantissa as well as the index could, of course, be made negative. We know that the $\log$ of 4.64 r is 0.6666 , while the $\log$ of 100 is 2 , and we can divide 4.641 by roo by subtracting $\log 2$ from $\log 0 \cdot 6666$. This gives us $\log \quad .3334$, the whole of which is minus, and is the $\log$ of 0464 r . Log $-\mathrm{r} \cdot 3334$ is exactly the same as $\log \overline{2} \cdot 6666$, where the index only is minus, and the mantissa is plus. It is, however, found in practice much more convenient to keep the mantissa invariably positive, or plus, letting the index only be minus.

Referring again to the example we have already quoted, and applying these two rules, we get the following results :-

$$
\begin{aligned}
& \cdot 000464 \mathrm{x}=\log \overline{4}^{-} \cdot 666612 . \\
& { }^{\circ} 00464 \mathrm{I}=\log \mathbf{3}^{-666612} \text {. } \\
& .0464 \mathrm{I}=\log { }_{2} \cdot 666612 \text {. } \\
& \text { •464r }=\log \text { I. } 666612 \text {. } \\
& 4^{\circ} 64 \mathrm{I}=\log 0.6666 \mathrm{r} 2 . \\
& 46 \cdot 41=\log \text { г.6666т2. } \\
& 464^{\circ} \mathrm{I}=\log 2 \cdot 666612 \text {. } \\
& 464 \mathrm{r}=\log 3 \cdot 666612 .
\end{aligned}
$$

The special convenience of logarithms, and it is a very great one, is that by their aid numbers
can be multiplied by the addition of their logs. divided " subtraction " raised to any power by the multiplication of their logarithms and their roots extracted by the division of their logarithms.

## To find the Logarithm of a Number

Before giving examples of the use of logarithms, however, we must explain how to find the logarithm of a given number, and the number corresponding to a given logarithm. Where the number consists of only four figures it is immediately found from the tables by looking in the first column for the first three figures, and on the same line in
the column headed with the fourth figure the logarithm of the number will be found.

Thus on p. 232 we see that the decimal part of the logarithm of 1501 is $1763^{81}$.

Again on p. 242 we find that the decimal part of the logarithm of 434 I is 637590 .

If, however, we want to find the logarithm of 43405 , which is half way between 4340 and 434 I , we must take the logarithm as half way between 637490 and 637590 , which $=\log 637540$.

In order to facilitate finding the logarithms of numbers containing five or more figures, a column of differences is given on each page of the tables. In the case just given the difference is seen to be 100, which means that there is a difference of 000100 between the logs of one number and the next.

To obtain the logarithm of a number containing five figures we take the logarithm of the first four figures direct from the table, then multiply the difference by the fifth figure of the number, divide the result by to and add it to the logarithm of the first four numbers. Thus to repeat the example just given :

| 4340 | $=\log 637490$ |
| ---: | :--- |
| the difference $100 \times 5 \div 10$ | $=\log$50 <br> 43405 <br> $\quad=\log 637540$ |

If we wish to find the logarithm of a number containing six figures we take the first five figures in the way just described, and to obtain the difference for the sixth figure we multiply the difference by the sixth figure and divide the result by 100.

Thus to find the log of $434 \circ 54$.

| 43405 | $=\log 637540$ |
| :--- | ---: |
| the difference for 6th figure $100 \times 4 \div 100$ | $=\log$4 <br> 434054$\quad=\log 637544$ |

The differences in this case are exceptionally simple to calculate because in the example chosen the difference is exactly 100 , but the simplicity of the calculation serves to show with special clearness the principle involved. This principle of course is, that to find the difference for the 5 th figure of a number we must multiply the difference given in the table by a fraction of which to is the denominator and the 5 th figure of the number is the numerator. To obtain the 6th figure the difference must be multiplied by a fraction of which the denominator is 100 and the numerator the 6th figure. To find
the difference corresponding to the 7 th figure the denominator is 1000 and the numerator the 7 th figure and so on, as far as we please.

In dealing with these differences it must always be borne in mind that the figures printed in the Table of Differences come at the extreme right-hand end of the logarithms in the main part of the table. That is to say, if the difference printed in the last column is roo it is understood to be really 000100 . If the printed difference is 99 it is to be understood as 000099 , while obviously the difference corresponding to the 5 th figure must be in all cases less than the printed difference. If this is remembered there will be no fear of any mistake in taking out the logarithms for numbers containing five or six figures.

## To find the Number Corresponding to a Logarithm

To find a number corresponding to a given logarithm we must look in the table for the nearest logarithm to the one we are dealing with. The first three figures of the logarithms are printed in large type on the top of the page. On the left-hand pages the first three figures of the first logarithm on the page are given. On the righthand pages the first three figures of the last logarithm on the page are given, so that we can readily see whether the logarithm with which we are concerned does or does not come on a given page.

Now, let us suppose that we wish to find the natural number corresponding to $\log 735868$. From p. 246 we see that log 735838 (which is 30 less than the logarithm we are dealing with) $=5443$. The difference printed in the last column on this line is 8o, and signifies that 80 corresponds to a difference of $I$ in the 4th figure of the natural numbers, therefore 30 corresponds to a difference of $\frac{30}{80} \times 10$ in the 5 th figure of the natural numbers. This $=375$, so that the total number corresponding to $\log 735868$ $=5443375$.

Thus to find the number corresponding to a logarithm that is not given exactly in the table we must take from the table the nearest logarithm below the given logarithm and obtain the 5 th and following figures of the natural number by dividing the difference between these two logarithms by the difference printed in the tables. The numerator of this fraction consisting of the difference between the given logarithm and the nearest logarithm below it printed in the tables, being multiplied by 10 to obtain the 5 th figure of the natural number and by 100 to obtain the 6th figure, and so on.

## Multiplication by Logarithms

Having seen how to find the logarithm corresponding to a number and the number corresponding to a logarithm, we may now proceed to the practical use of logarithms.

Multiplication of numbers is accomplished by the addition of the logarithms of their numbers, thus :

$$
\begin{aligned}
2547 & =\log 3.406029 \text { (p. 237) } \\
73^{8} 3 & =\log \underline{3.868233} \text { (p. 254) } \\
2547 \times 73^{8} 3 & =\log \underline{7 \cdot 274262}=18804500 .
\end{aligned}
$$

The Index of the $\log$ being 7 , there must be 8 figures in the answer.

A reference to p. 232 shows that the nearest logarithm to the logarithm of the answer is 274158 , giving a difference of 104 , which divided by the Tabular Difference of 231 equals very approximately 45 for the 5 th and 6 th figures of the answer.

Other examples of Multiplication by means of logarithms are appended.

Multiply $25^{\circ} 75$ by $4^{\circ} 217$.

$$
\begin{aligned}
& 25 \cdot 75=\log \mathrm{r} 410777 \text { (p. 237) } \\
& 4^{.217}=\log 0.625004 \text { (p. 243) } \\
& 25.75 \times 4.217=\log \overline{2.035781}=108.58775 \text { (p. } 23 \mathrm{I} \text { ) }
\end{aligned}
$$

Multiply 3847 by ${ }^{\circ} 0632$.

$$
\begin{aligned}
3847 & =\log 3 \cdot 585122(\text { p. 241) } \\
\cdot 0632 & =\log \frac{2.800717}{}(\text { p. 250) } \\
3847 \times \cdot 063^{2} & =\quad 2.385839=243.1302(\text { p. 234) }
\end{aligned}
$$

The exact answer in this case is $243^{\circ} 13^{\circ} 4$, which is obtained by using seven-figure logarithms, as follows :-

$$
\begin{aligned}
3847 & =\log 3.5851222 \\
\cdot 0632 & =\log 2 \cdot 800717 \mathrm{I} \\
3847 \times \cdot 0632 & =\quad 2 \cdot 3^{858393}=243 \cdot 1304
\end{aligned}
$$

It must, therefore, be borne in mind that to obtain exact results it is necessary to use a large number of figures in the logarithm, but the six figures given in the tables are sufficient for most practical purposes.

## DIVISION BY LOGARITHMS

## Division by Logarithms

The division of numbers is accomplished by subtraction of their logarithms, the logarithm of the divisor being taken from the dividend, the remainder being the logarithm of the quotient. Thus to divide 4364 by 2536 we have

$$
\begin{aligned}
4364 & =\log 3 \cdot 639885 \text { (p. 242) } \\
2536 & =\log 3 \cdot 404149(\text { p. } 237) \\
4364 \div 2536 & =\log \frac{0 \cdot 235736}{\circ}=1 \cdot 7208(\text { p. 232) }
\end{aligned}
$$

Divide 426.53 by 32.79 .

$$
\begin{aligned}
426.53 & =\log 2.629950(\text { p. 243) } \\
32.79 & =\log 1515741(\text { p. 239) } \\
426.53 \div 32.79 & =\log 1114209=13.008 \text { (p. 230) }
\end{aligned}
$$

Divide 32.79 by 426.53 .

$$
\begin{aligned}
32.79 & =\log 1.515741(\text { p. 239) } \\
426.53 & =\log 2.629950(\text { p. 243) } \\
32.79 \div 426.53 & =\log 2.88_{5791}=.076876(\text { p. 257) }
\end{aligned}
$$

Divide 8652 by ${ }^{\circ} 0461$.

$$
\begin{aligned}
8652 & =\log 3.937117(\text { p. 260) } \\
\cdot 046 \mathrm{I} & =\log 2.663701(\text { p. } 244) \\
8652 \div \cdot 0461 & =\log \underline{5 \cdot 273416}=187679(\text { p. 233) }
\end{aligned}
$$

In the last example we are subtracting a negative characteristic, and of course the subtraction of a minus quantity is accomplished by the addition of the corresponding positive or plus quantity.

Divide 046 t by 8652 .

$$
\begin{aligned}
& \cdot{ }^{\circ}{ }^{461}=\log \overrightarrow{2} \cdot 663701 \text { (p. 244) } \\
& 8652=\log 3.937117 \text { (p. 260) } \\
& { }^{\circ}{ }^{4} 61 \div 8652=\log 6 \cdot 726584=\cdot 000005328 \text { (р. 247) }
\end{aligned}
$$

In this example we are subtracting a positive characteristic from a negative one, and this involves the addition of the corresponding negative quantity. If, as we have just seen,

$$
\begin{aligned}
8652 \div \cdot 0461 & =187679
\end{aligned}=\log 5^{\circ} 273416 \text { and }, ~=00005328=\log 6 \cdot 726584 .
$$

thus affording an instructive proof of the accuracy of the results by adding the two logarithms together and obtaining the answer.

## Involution by Logarithms

To raise a number to any given power we multiply the logarithm of the number by the index of the power. Thus the cube of 100 is $\log 2.000 \times 3=\log 6.000=1,000,000=100 \times 100 \times 100$.

Similarly

$$
\begin{aligned}
& 733^{2}=\log 2.865104 \times 2=\log 5.730208=537289 \\
& { }^{\circ} 00733^{2}=\log 3.865104 \times 2=\log 5.730208={ }^{\circ} 0000537 \\
& \cdot 00733^{3}=\log 3 \cdot 865104 \times 3=\log 7 \cdot 59533^{12}=\cdot 000000393^{8}
\end{aligned}
$$

In the last two examples we had negative characteristics to deal with, and it will be noticed that after multiplying the decimal part of the $\log$. arithm by 2 there was a positive remainder of r , which is subtracted from twice the negative characteristic. Similarly in the cube there was a remainder of 2 , which was subtracted from three times the negative characteristic. This treatment of the matter is an obvious consequence of the mantissa being positive and the characteristic negative.

## Evolution by Logarithms

To find the root of a given number we must divide the logarithm of the number by the exponent of the root. Thus to find
the square root of a number we divide the log by 2 ;

| $"$ cube | $"$ | $"$ | $"$ | , | $3 ;$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $"$ fourth | $"$ | $"$ | $"$ | $"$ | $4 ;$ |

and so on.
For example :

$$
\begin{aligned}
& 2 / 537289=\log 5 \cdot 730208 \div 2=\log 2 \cdot 865104=733 \\
& \sqrt[3]{17} 443=\log 1 \cdot 241297 \div 3=\log 0 \cdot 413766=2 \cdot 5928 \\
& 4 / 2560000=\log 6 \cdot 408240 \div 4=\log 1 \cdot 602060=40 \\
& \sqrt[3]{ } \cdot 0081 \quad=\log 3 \cdot 908485 \div 3=\log 1 \cdot 302828=\cdot 20083 \\
& \sqrt[3]{ } \cdot 00081=\log 4 \cdot 908485 \div 3=\log 2 \cdot 969495=\cdot 093217
\end{aligned}
$$

In this last instance we had a negative characteristic to deal with, and the most convenient way of treating it was to add -2 to the 4 of the index, so obtaining a number, $\overline{6}$, which is exactly divisible by 3. To compensate for thus dealing with the index we must prefix an index of +2 to the mantissa, and divide this result also by 3 . The process thus becomes :

$$
\begin{aligned}
& \log 4+\overline{2} \ldots=\log 6 \quad \text { this } \div 3=\log \overline{2} \\
& \log 908485+2=\log 2 \cdot 908485 \text { this } \div 3=\log 0 \cdot 969495
\end{aligned}
$$

$\log \overline{4} \cdot 908485 \div 3=\log \overline{2} \cdot 969495$

This produces the same result as if we had stated our entire logarithm as negative, divided it by 3 , and subsequently converted it into a logarithm with a negative index and a positive mantissa. Thus :
is the same as

$$
\begin{aligned}
& \log -4.000000 \\
& \log +0^{\circ} 9084^{8} 5 \\
& \log -\frac{3^{\circ} 091515}{15}
\end{aligned}
$$

when both index and mantissa are negative.
This divided by $3=\log -1.030505$, the whole of which is still negative. But this equals $\log 2.969495$, where the index is negative and the mantissa positive, and this is the result obtained by dividing $\overline{4} \cdot 908485$ by 3 .

Thus the rule for dividing a logarithm with a negative index if the index is not exactly divisible by the divisor, is to add such a negative number to it as will make it exactly divisible, and prefix to the fractional part of the logarithm a positive integer equal to the negative integer added to the negative index. Of course, by adding a minus quantity to one part of the logarithm and a corresponding plus quantity to another part of it, the value of the logarithm is unaltered.

## COMPOUND INTEREST

## The Amount of I in any Number of Periods

Pages 269-316 contain M. Thoman's logarithmic tables of the amount of $£$ at the end of any number of years and the logarithm of the annuity which $£ 1$ will purchase. The great value of these tables, and the various uses to which they may be put, will be at once apparent when the use of logarithms is understood. On p. 9 we showed that the amount of $£ \mathrm{I}$ in any number of years-or, more generally, the amount of $I$ in any number of periods-is the amount of I in I period raised to the $n$th power. This is expressed as $(\mathrm{I}+i)^{n}$, where $i$ is the rate of interest and $n$ the number of years. M. Thoman uses the symbol $r$ as the equivalent of $\mathrm{I}+i$, which means the amount of $I$ in 1 period, but the modern practice is to use $i$ for the rate of interest and $\mathrm{I}+i$ for the amount of I in I period. Now, as a number may be raised to any power by multiplying the logarithm of the number by the index of the power, we can obviously obtain the amount of $£ \mathrm{I}$ in any number of years with very little trouble. Thus, if we want to know the amount of $£ \mathrm{I}$ in 25 years at $4 \%$, we have to find the value of $1.04^{25}$. The log of 1.04 is seen from p. 230 to be 0.017033 . This multiplied by 25 equals $\log 0.425825$, which, from p. 237 , we find to be 2.6658 , which agrees with the result given in the interest table on p. 70. On turning to Thoman's table on p. 291 the logarithm is seen to be 0.4258335 , and taking the natural number corresponding to this logarithm we get 266584 , which agrees with the 5 places of decimals in the interest table of p. 70. It thus appears that to obtain the amount of I at the end of any number of periods we must multiply the $\log$ of $\mathrm{r}+i$ at the end of i period by the number of periods. The natural number corresponding to the logarithm thus obtained gives the required result.

Further examples are appended.
What is the amount of $£ \mathrm{r}$ at the end of 73 years at $5 \frac{7}{8} \%$ per annum?

Turning to M. Thoman's table on p. 306 we find in the column headed $\log r^{n}$ year 73, $\log 1.8099$ r99, which is the logarithm of the answer. From the logarithmic table on p. 25 I we find that this corresponds to $64 \cdot 5535$.

## AMOUNT OF I IN ANY NUMBER OF PERIODS

What is the amount of $£ \mathrm{I}$ at the end of 27 years at $3 \frac{1}{5} \%$ per annum?

This rate of interest is not tabulated, so we must take the $\log$ of $(\mathrm{I}+i)^{27}$. Now, as $i=3 \frac{1}{8} \%$ or ${ }^{\circ} \mathrm{O}^{2}$, the value of $\mathrm{I}+i=\mathrm{r}^{\circ} \mathrm{O}^{2}$, $=\log 0.01368$, which is the logarithm given on p. 230. Multiplying this by 27 , we obtain as our answer $\log \cdot 36936=2 \cdot 3408$.

It will be seen that by means of logarithms enormous calculations may be made with the greatest ease. Thus suppose we want to know the amount to which $1 d$. will accumulate at $5 \%$ compound interest in 1900 years ; our answer in pence is $1.05^{1900}=\log 0.0211893$ $\times 1900=\log 40.25967$. To obtain the answer in pounds we subtract the $\log$ of 240 , namely 2.3802 I , thus leaving $\log 37.87946$ $=£ 75,763,500,000,000,000,000,000,000,000,000,000,000$.

If we wish to extend the calculation and show what income would be yielded from such an amount as this at $5 \%$ interest every second to every man, woman, and child on the face of the earth, we have simply to divide by 20 to find the annual income from this sum, then by $365 \frac{1}{4}$ to find the daily income, by 24 to find the income hourly, by 60 to find the income per minute, by 60 again to find the income per second, and finally by (say) $\mathrm{r}, 483$ millions to find the income in each second for every individual in the world. These divisions are readily accomplished by adding the logarithms of the numbers together and subtracting the total from the logarithm of the amount of $\mathrm{I} d$. at the end of 1900 years. Thus,

|  | $1.05^{1900}=\log 40 \cdot 259670$ |
| :---: | :---: |
| $240=\log 2 \cdot 38021 \mathrm{I}$ |  |
| $20=\log 1.301030$ |  |
| $365.25=\log 2.562590$ |  |
| $24=\log 1.380211$ |  |
| $60=\log 1 \cdot 778151$ |  |
| $60=\log \mathrm{I}_{7} 7815 \mathrm{I}$ |  |
| $1,483,000,000=\log 9.171141$ | $\log 20 \cdot 351485$ |
|  | log 19*908185 |

which gives us $£ 80,944,000,000,000,000,000$ per second as the income for every man, woman, and child in every second from the accumulations of $\mathrm{I} d$. at $5 \%$ compound interest for 1900 years.

We often require to know, not so much what $£_{1}$ will amount to in any number of times, but what various other amounts will come to. This is arrived at by the help of logarithms with very great ease. We have only to add the logarithm of the amount to the logarithm of the amount of $\mathfrak{£}_{1}$ in the given number of years to at once obtain the logarithm of the answer.

## COMPOUND INTEREST

What will $£_{4372}$ amount to in 46 years at $4 \%$ ?

$$
\begin{aligned}
\mathrm{I} \circ 4^{46} & =\log 0 \cdot 7835336(\text { p. 29r) } \\
437^{2} & =\log 3.6406802\left(\text { p. } 24^{2}\right) \\
I^{\circ} 04^{46} \times 437^{2} & =\log 4^{\circ} 4^{24213} 3^{8}=£ 26,559 .
\end{aligned}
$$

Again, what will $£ 987$ amount to at the end of 22 years at $3 \frac{7}{12} \%$ ?

$$
\begin{aligned}
& 3 \frac{7}{12}=3.58 \dot{j} \text {, so that } \mathrm{I}+i=1.0358 \dot{j}=\log 0.0152899 \text { (p. } 320 \text { ) } \\
& 1{ }^{\circ} 0358 j^{2 n}=\log 0 \cdot 0152899 \times 22=\log \quad 3363778 \\
& 987=\log 2.9943172=\log 2.9943172(\mathrm{p} .264) \\
& \mathrm{I}^{\prime} 035^{8} \mathrm{j}^{22} \times 987=\log 3.33^{06950}=£_{2141^{\circ} 4} .
\end{aligned}
$$

## Present Value of $£ \mathrm{r}$

On p. 10 we showed that $v=\frac{I}{I+i}$, where $v$ is the present value of $\mathfrak{E} \mathrm{r}$, and $v^{n}=\left(\frac{\mathrm{I}}{\mathrm{I}+i}\right)^{n}$, where $n$ represents the term. Hence to obtain the present value of $£ \mathrm{I}$ due at the end of any number of years we subtract the $\log$ of $(1+i)^{n}$ from the $\log$ of $\mathrm{I}^{n}$. Thus, suppose we require to know the present value of $£ \mathrm{I}$ due at the end of 20 years at $5 \%$, we have $(\mathrm{I}+i)^{n}=1 \cdot 05^{20}=\log \cdot 021189 \times 20$ $=\log 0.42378$ to be subtracted from $\mathrm{I}^{n}=\log 0 \cdot 000000$. Now $\log$ $0 \cdot 000000-\log 0 \cdot 42378=\log \overline{\mathrm{I}} \cdot 57^{622}=\cdot 3769$, this agreeing with the result given in the interest tables on p. 74. The $\log$ of $(\mathrm{r}+i)^{n}$ is obtained from the columns headed $\log r^{2}$ on p. 299, and by subtracting the logarithm there given from the $\log$ of I we obtain the logarithm of the present value of 1 due at the end of $n$ years. Further examples are appended.

What is the present value of $\mathscr{E}_{1}$ due at the end of 22 years at $4 \frac{7}{8} \%$ ?

From p. 298 we see that $\log (\mathrm{I}+i)^{n}=\log r^{n}=0.4547834$.

$$
\begin{gathered}
v^{n}=\left(\frac{\mathrm{I}}{\mathrm{I}+i}\right)^{n}=\log 0 \cdot 0000000-\log 0 \cdot 4547834=\log \overline{\mathrm{I}} \cdot 5452166 \\
=£ \cdot 35093 .
\end{gathered}
$$

What is the present value of $£ 1$ due at the end of 47 years at $2 \frac{3}{8} \%$ ?

This equals $\log 0.0000000-\log 0.4791140\left(\right.$ p. $\left.{ }^{278}\right)=\log$ $\overline{\mathrm{I}} \cdot 5208860=33 \mathrm{I} 8 \mathrm{r}$.

What is the present value of $\mathcal{E} \mathrm{r}$ due at the end of $3 \circ$ years at $3 \frac{1}{16} \%$ ?

## ANNUITY WHICH £I WILL PURCHASE

This rate of interest is equivalent to 3.0625 , and is not tabulated, so we must find from the table on p. 230 the logarithm of 1.030625 , multiply by 30 , and subtract it from the logarithm of 1 .

$$
\begin{aligned}
1 & =\log 0 \cdot 000000 \\
1 \cdot 030625^{30}=\log \cdot 0131007 \times 30 & =\log \frac{393021}{} \\
\frac{1}{1 \cdot 030625^{30}} & =\log \overline{1} \cdot 606979
\end{aligned}
$$

What is the present value of $\mathscr{E}_{1}$ due at the end of 25 years at 3尔 \% ?

This rate of interest also is not tabulated, but the logarithm corresponding to $\mathrm{I}+i$ when $i$ is at the rate of $3 \% \%$ is given in the column $\log r, p$. 320 . It is there seen to be 0.0163368 . Multiplying this by 25 we have $\log 0.40842$, which, subtracted from $\log \mathrm{r}$, leaves $\log \overline{\mathrm{I}} \cdot 59 \mathrm{r} 5$, corresponding to 39046 .

## Annuity which $£ \mathrm{I}$ will Purchase

On pp. 16 and 17 we explain the Sinking Fund Tables given on pp. 106-115. It is there shown that the Sinking Fund is obtained by dividing unity by the amount of $£ \mathrm{I}$ per annum. It is, however, further explained ( p .17 ) that in this table no provision is made for paying interest on the capital. If this has to be done, the amounts given in the Sinking Fund Table must be increased each year by the annual interest on $£ \mathrm{I}$. Thus, if the Sinking Fund required to replace $£ 1$ in ten years at $4 \%$ is $£ .08329$ r per annum, we must add the annual interest on $£ 1=\cdot 04$ to this amount, in order to obtain the annuity which $£_{1}$ will purchase for ten years at $4 \%$. The result of this addition is $(\cdot 083291+\cdot 04=) \cdot 123291$, the logarithm of which is $\overline{\mathrm{r}} .09093 \mathrm{r}$, which is the logarithm given in the column headed $a^{n}$ on p. 291. M. Thoman uses the symbol $a^{n}$ to represent this quantity, but in modern notation it is more usually expressed by the symbol $\frac{1}{a_{n}}$. It will, moreover, be noticed that in M. Thoman's tables the index of the logarithm is given as 9 instead of ${ }^{-1}$, as given above. The reason of this is that some people think it more convenient to avoid the negative characteristics of logarithms by adding to to the index, subtracting the negative index, when it occurs, from this 10 , and so always dealing with a positive index. The io that has been added is subsequently deducted from the index, and thus the same result is arrived at. The more usual and, we think, the more convenient plan is not to employ this artifice, but to
deal with negative characteristics, whenever they occur, in the manner already explained. Another point to be noticed in M. Thoman's logarithmic tables is that he puts a comma between the index and mantissa, and a decimal point between the 5th and 6th decimal places. It is more in accordance with modern English custom to put the decimal point between the index and mantissa of the logarithm, while there is nothing to be gained by putting any mark at all between the 5th and 6th decimal places. Thus o,17033.34 in Thoman $=0.1703334$ in modern notation; and in regard tonegative characteristics $9,09093.12$ in Thoman $=1.090933^{12}$ in modern notation, and so on throughout wherever the index is seen by inspection, as it readily can be, to have had 10 added to it.

From what has already been said, it will be seen that in dealing with annuities there are four things to be considered. One is the sum to which an annuity will amount in any number of years; another is the present value of an annuity for any number of years; the third is the annuity for any number of years which I or any other given amount will purchase; and the fourth is the sinking fund which will redeem a debt in a given number of years. The third and fourth of these only differ by the amount of the interest on the debt for one year or one period, as has just been explained. It is the third of these for which the logarithm is given in M. Thoman's tables on pp. 269-316 in the column headed $a^{n}$. The fourth is tabulated in natural numbers under the head of Sinking Fund on pp. 106-115. Dealing with the third of these first, namely the annuity which $£ \mathrm{r}$ will purchase for any number of years, we have to notice that it is the reciprocal of the present value of $£_{1}$ per annum tabulated in natural numbers on pp. 50-85. Obviously if the present value of an annuity of $£ 1$ per annum for 20 years at $4 \%$ is 1359033 (p. 70 ) an annuity for 20 years at $4 \%$, of which the present value is $£ \mathrm{r}$, is equivalent to $\frac{1}{\frac{1}{1} 59033}$ of $£ \mathrm{r}$. This equals $£ \circ 735^{817}$, the logarithm of which is $\overline{2} .866770$, thus agreeing with the logarithm given on p. 291, where, however, the logarithm is stated as $8,86677^{\circ} \circ$. This difference in the method of stating the logarithm has already been explained.

As another example we may take the present value of an annuity for 26 years at $2 \frac{3}{4} \%$. This is $£ 18.40226$ (p. 64), and taking the reciprocal of this amount we have ${ }^{\circ} 05434115=\log \overline{2} \cdot 735129$, which agrees with the logarithm given on p. 281.

Thus to find the annuity which I will purchase, we have only to take the natural number corresponding to the logarithm given on pp. 269-316 under the heading $\log a^{n}$.

A few examples may be added. What annuity for 27 years will $£$ I buy at $3 \frac{1}{4} \%$ ?

Ans. (p. 285) $\log 2 \cdot 7497045=056196$.
For 86 years at $5 \frac{1}{8} \%$ ?
Ans. (p. 300) $\log { }^{2} \cdot 7156373=0{ }^{\circ} 1956$.
For 7 years at $3 \%$ ?

If we require to know the annuity which any amount other than r will purchase, we have simply to multiply the annuity which I will purchase by the amount.

This is readily done by taking the logarithm of the amount, adding it to the logarithm of the annuity which I will purchase, and taking the natural number corresponding to the logarithm. Take, for example, the annuity for 27 years at $3 \frac{1}{4} \%$ that may be purchased for $£ 3,927$.

$$
3927=\log 3.59406 \mathrm{I}(\mathrm{p} .24 \mathrm{I})
$$

The annuity which I will purchase $=\log 2.749704$ (p. 285)

$$
" \quad \# \quad 3927 \quad, \quad=\log 2 \cdot 343765=£ 220 \cdot 68
$$

What annuity for 68 years may be purchased for $£ 5,737$, reckoning interest at $4 \frac{1}{2} \%$ ?

$$
5737=\log 3.758685 \text { (p. 249) }
$$

The annuity which I will buy $=\log 2.675548$ (p. 295)

$$
" \quad \Rightarrow \quad 5737 \quad, \quad=\log 2 \cdot 434233=£ 27 \mathrm{I}^{\circ} 79
$$

The annuity that may be bought for I at rates not given in the table may be calculated from the formula $\frac{\mathrm{I}}{a_{\bar{n}}}=\frac{i(\mathrm{I}+i)^{n}}{(\mathrm{I}+i)^{n}-\mathrm{I}}$ $=\log i+\log (\mathrm{I}+i)^{n}-\log \left[(\mathrm{I}+i)^{n}-\mathrm{I}\right]$.

$$
\begin{aligned}
& \text { What annuity for } 30 \text { years will } £ \text { r purchase at } 5 \% \text { ? } \\
& i={ }^{\circ} 05=\log \overline{2} \cdot 6989700 \text { (p. } 318 \text { ) } \\
& (\mathrm{r}+i)^{n}=1 \cdot{ }^{\circ} 5^{30}=\log 0.021 \mathrm{I} 893 \times 30=\log 0.6356790=4.32194 \\
& i(\mathrm{I}+i)^{n}=\quad .05 \times \mathrm{I}^{\circ} 05^{30}=\log \mathrm{I} 334649 \circ \\
& (\mathrm{I}+i)^{n-\mathrm{I}}=4.32194-1=\log 0052 \mathrm{I} 3918 \\
& \frac{i(\mathrm{r}+i)^{n}}{(\mathrm{r}+i)^{n}-\mathrm{I}}=\frac{.05 \times \mathrm{I} \cdot 05^{30}}{3.32 \mathrm{I} 94}=\log \overline{2.8132572}=.06505 \mathrm{I}
\end{aligned}
$$

This is the figure given on p. 299, save that the last figures of the logarithm are 70 instead of 72 , a difference that is inappreciable.

What annuity for to years will $£ 683$ purchase at 4 ' $\%$ ?

$$
\begin{aligned}
& i={ }^{\circ} \mathrm{O} \mathrm{Al}_{1}=\log { }^{2} \cdot 6127839 \text { (p. 319) } \\
& (\mathrm{I}+i)^{n}=\mathrm{I} \cdot 04 \mathrm{I}^{\mathrm{ro}}=\log 0.01745073 \times 10=\log 0.1745073=1.49454 \\
& i(\mathrm{I}+i)^{n}=.041 \times \mathrm{I}^{\circ} 0 \mathrm{I}^{10}=\log 27872912 \\
& (\mathrm{I}+i)^{n-1}=1.49454-\mathrm{I}=\log \mathrm{I} \cdot 6942014 \\
& \frac{i(\mathrm{I}+i)^{n}}{(\mathrm{I}+i)^{n}-\mathrm{I}}=\frac{.04 \mathrm{I} \times \mathrm{I} \cdot 04 \mathrm{I}^{10}}{49454}=\log \overline{\mathrm{I}}{ }^{0} 0930898 \\
& 683=\log 2 \cdot 8344207 \quad £
\end{aligned}
$$

Annuity $£ 683$ will buy for 10 years $=\log 1 \cdot 9275105=84.6273$

## Present Value of $£$ I per Annum

We have just seen that the present value of an annuity is the reciprocal of the amount of the annuity which 1 will purchase for the same period at the same rate of interest. In other words, the annuity which 1 will purchase and the present value of an annuity multiplied together produce unity-the period and the rate of interest, of course, being the same in both cases. The logarithms of the annuity which 1 will purchase are given in the column headed $a^{n}$, on pp. 269-316. By subtracting this tabulated logarithm from 0 , which is the $\log$ of I , we obtain the logarithm of the present value of an annuity of i .

What is the present value of an annuity of $£ 1$ per annum for 43 years at $3 \frac{7}{8} \%$ ?

$$
1=\log 0 \cdot 0000000
$$

Annuity 1 will purchase for 43 years

$$
\text { at } 3 \frac{7}{8} \% \quad . \quad . \quad . \quad . \quad=\log 2.6824736 \text { (p. 290) }
$$

Present value of $£_{1}$ per annum for 43 years at $3 \frac{7}{8} \% \quad . \quad . \quad .=\log 1 \cdot 3175^{264}=£^{20} 0^{\circ} 7743$

What is the present value of $\mathcal{E}^{1}$ per annum for 30 years at $5 \%$ ?

$$
1=\log 0 \cdot 0000000
$$

The annuity which I will purchase
for 30 years at $5 \%$. . $=\log \overline{2} \cdot 8132570$ (p. 299)
Present value of $£$ I per annum for
30 years at $5 \% \quad . \quad . \quad=\log 1 \cdot 1867430=£ 15 \cdot 37245$
This result may be seen in the table on p. 74. Although the present values of annuities are given in natural numbers on pp. $50-85$, it is often convenient to have the logarithms of the values rather than the natural numbers. Thus, suppose we want to know
the present value of an annuity of $£ 47^{\circ} 25$ per annum for 30 years at $5 \%$. To obtain the result we must multiply the value of $£ \mathrm{x}$ per annum by $47^{\circ} 25$, and this, as has been already explained, can be most readily done by the addition of the logarithms of the two numbers.

$$
\begin{aligned}
& \text { Present value of } £ 1 \text { per annum } \\
& \text { for } 30 \text { years at } 5 \% \quad . \quad=\log \mathrm{r} \cdot{ }^{1} 86743 \text { (p. 299) } \\
& 47 \cdot 25=\log \mathrm{r} \cdot 674402 \text { (p. 245) } \\
& 15.37245 \times 47^{\prime 25}=\log 2 \cdot 861145=£ 726.35 \text {, }
\end{aligned}
$$

which is the present value of an annuity of $£ 47^{\circ 25}$ per annum for 30 years at $5 \%$.

What is the present value of an annuity of $£ 8642$ for 68 years at $2 \pi \%$ ?

$$
\begin{aligned}
& 8642=\log 3.93^{66143} \text { (p. 260) } \\
& \text { Value of annuity of } £^{1}(\log 0 \\
& \left.-\log \overline{2} \cdot{ }^{2} 26937^{2}\right) \quad . \quad=\log 14730628 \text { (p. 282) } \\
& \text { Value of annuity of } £ 8642 \text { for } \\
& 68 \text { years at } 2 \frac{7}{8} \% \quad . \quad . \quad=\log 54096771=£ 256849 \text {. }
\end{aligned}
$$

The value of an annuity for some other rate of interest than is given in the tables may sometimes be needed, and we must therefore explain how the value may be arrived at.

We have already shown (p. 22I) that the present value of an annuity is the reciprocal of the annuity that 1 will purchase, and that the annuity which a will purchase may be obtained from the formula $\frac{i(\mathrm{I}+i)^{n}}{(\mathrm{I}+i)^{n}-\mathrm{I}}$. Hence the formula for finding the present value of an annuity is $\frac{(\mathrm{r}+i)^{n}-\mathrm{r}}{i(\mathrm{I}+i)^{n}}=\log \left[(\mathrm{r}+i)^{n}-\mathrm{r}\right]-\log i$ $-\log (1+i)^{n}$.

We may repeat the example already dealt with. What is the present value of $£ \mathrm{r}$ per annum for 30 years at $5 \%$ ?

$$
\begin{aligned}
& (\mathrm{I}+i)^{n}=1.05^{30}=\log 0.0211893 \times 30=\log 0.6356790=4.32194 \\
& (1+i)^{n}-\mathrm{r}=4.32194-\mathrm{r}=3.32194 \quad=\log 0.5213918 \\
& i=.05 \quad=\log \overline{2} \cdot 6989700 \\
& (\mathrm{I}+i)^{n}=\mathrm{r} \cdot 5^{30} \quad=\log 0.6356790 \\
& i(\mathrm{I}+i)^{n}={ }^{\circ} 05 \times \mathrm{r} \cdot 05^{30}=\log \mathrm{I} 3346490=\log 1.3346490
\end{aligned}
$$

If the logarithm here found is added to the logarithm found in the converse problem on p. 22r, we have

$$
\begin{aligned}
& \log r \cdot r 867428 \\
& \log \underset{2}{2} \cdot 813_{22572} \\
& \log 0 \cdot 0000000=I
\end{aligned}
$$

thus showing that the answers are reciprocals of each other.
What is the present value of $£ x$ per annum for 75 years at $37 \%$ ?

$$
\begin{aligned}
& 1 \cdot 037^{75}=\log 0 \cdot 0157788 \times 75=\log { }^{1} \times 834400=15.255 \\
& r \times 37^{75}-1=\quad 14.255=\log 1 \times 1539672 \\
& { }^{\circ} 037=\log \overline{2} \cdot 5682017 \\
& r \times 37^{75}=\log r \times 834100 \quad \log \times 75 \times 6 \times 17 \\
& \frac{1.037^{75}-1}{037 \times 1.037^{75}}=\log \underline{\underline{4} 4023555}=£^{2} 5^{\circ} 2555 .
\end{aligned}
$$

## The Amount of $£ \mathrm{I}$ per Annum

Another calculation that we sometimes require to make is the sum to which an annuity will amount in a given number of years at a specified rate of interest.

If we know the present value of the annuity, and if we know also the sum to which $£ \mathrm{r}$ will amount in the given period, we can, by multiplying the present value by the amount of $£ \mathrm{r}$, obtain the sum to which the annuity will amount in the period. Thus, suppose we wish to ascertain the amount of $\mathcal{L}^{\mathrm{x}}$ per annum for 20 years at $5 \%$. Turning to p. 74, we see that the present value of $£ \mathrm{I}$ per annum is 12.4622 I , and on the same page we see that the amount of $\mathscr{L}^{1}$ in 20 years is 2.6533 . Multiplying these two amounts together we have $33^{\circ} \circ 66$, which agrees with the amount of $£ \mathrm{r}$ per annum given on the same page.

The reason of this connection is plain, for since the possession of an annuity of $£ \mathrm{r}$ for 20 years at $5 \%$ is mathematically equivalent to having $£ 12.4622$ in ind now, and as the sum to which $£ 12.4622 \mathrm{x}$ will amount in 20 years is the amount of $£ \mathrm{x}$ in 20 years multiplied by 12.46221 ( $=2.6533 \times \mathrm{r} 2.4622 \mathrm{I}=33.066$ ), this must also be the sum to which an annuity of $£ \mathrm{r}$ will amount in 20 years at $5 \%$.

This result may very easily be obtained by logarithms from the tables on pp. 269-3x6. In the column headed $a^{n}$ we have, as already explained, the reciprocal of the present value of an annuity, and in the column headed $r^{2}$ we have the amount of $£ \mathrm{r}$, and we
make use of these two tables in the following way to obtain, as in the example just given, the amount of $£ \mathrm{I}$ per annum in 20 years at $5 \%$.

Turning to p. 299, we have
Value of annuity $=(\log 0-\log 2 \cdot 9044049=) \log 1.0955951$
Amount of $£ \mathrm{I} \quad=\log 0.4237860$
Amount of annuity in 20 years at $5 \%=\log 1^{2} 5193^{811}$
$=£ 33^{\circ} 066$, thus agreeing with the result previously obtained.
Some additional examples are appended.
What is the amount of $£ \mathrm{I}$ per annum at the end of 63 years at 3 妾 $\%$ ?

Value of annuity $=\log 1 \cdot 4259707$ (p. 285)
Amount of $£ \mathrm{I}=\log 0.8750738$ (p. 285)
Amount of annuity $=\log 2 \cdot 3010445=200.007$.
What is the amount of $£ 735$ per annum at the end of 34 years at $2 \frac{7}{8} \%$ ?

$$
\begin{aligned}
\text { Value of annuity } & =\log \mathrm{r} \times 3327200(\text { p. 282) } \\
\text { Amount of } £_{\mathrm{I}} & =\log 0.4185348 \text { (p. 282) } \\
735 & =\log 2.8662873(\text { p. 254 })
\end{aligned}
$$

Amount of $£ 735$ p.a. in 34 years $=\log 4 \cdot 6175421=£ 41,451 \cdot 68$.
It will be noticed that the logarithm of the annual payment is added to the other two logarithms, thus conveniently effecting the necessary multiplication.

## Sinking Fund

A reference to the remarks on $\mathrm{pp} .16,17$, and 219 will show the connection between the sinking fund and the annuity which $£^{1}$ will purchase, it will be seen that it is only necessary to deduct the rate of interest from the annuity which $£_{1}$ will purchase to obtain the sinking fund. Thus the sinking fund which will redeem a debt of $£ \mathrm{I}$ in 25 years at $4 \%$ is obtained by taking from p. 29I the annuity which I will purchase $=\log 2 \cdot 8062612=\cdot 064012$, and subtracting from this amount the rate of interest 04 : whence we have -O24012, which is the sinking fund given on p. II 2 .

Further examples as obtained by logarithms are appended.
What annual payment will redeem a debt of $£ \mathrm{I}$ in 65 years at $4 \frac{1}{8} \%$ ?

The annuity I will purchase (p. 292) $=\overline{\mathbf{2}} \cdot 6479998=\cdot 044463$
Subtract the interest for I year
$=.04125$
Sinking fund $\quad=\widetilde{003213}$
What is the annual sinking fund that will amount to $£ 337$ in 43 years at $2 \frac{5}{8} \%$ ?

$$
\begin{aligned}
\text { Annuity } \mathrm{r} \text { will buy } & =\log \overline{2} \cdot 5918772 \text { (p. 280) } \\
337 & =\log 2.5276299 \text { (p. 238) }
\end{aligned}
$$

Annuity 337 will buy $=\log 1 \cdot 1 / 95071=13 \cdot 16760$
Deduct interest on 337 for I year $=337 \times \frac{21}{8 \times 100}=8.84625$
Sinking fund to redeem 337 in 43 years $\quad=4.32135$
Or the calculation may be made in a slightly different way:-

$$
\begin{aligned}
& \text { Annuity r will buy }=\log 2 \cdot 5918772=039073 \\
& \text { Sinking fund to redeem I } \\
&=\circ 039073-02625=\log \overline{2} \cdot 1079896=\circ 012823 \\
& 337=\log 2.5276299
\end{aligned}
$$

Sinking fund to redeem $337=\log 0.6356195=£ 4.32135$

## Annuities for which the Rate of Interest on Capital is Different from the Rate for Sinking Fund

As explained on p. r8, we require for this calculation to know the annual sinking fund that will amount to $£ \mathrm{I}$ in a given period at the lower rate of interest, and to know also the annual interest upon $£ \mathrm{i}$. The present value of an annuity equal to the addition of these two is $I$, and the present value of an annuity of $I$ is the reciprocal of the present value just mentioned.

What annuity must be paid during 29 years to repay a debt of $£ \mathrm{r}$ by accumulation at $3 \frac{1}{4} \%$ and to pay interest on the loan at $4 \frac{1}{2} \%$ ?

The annuity which will amount to $£ 1$ in 29 years at $3 \frac{1}{4} \%$ is obtained by multiplying the annuity which 1 will purchase for 29 years by the present value of 1 due at the end of 29 years.

Present value of $£ \mathrm{r} \quad(\mathrm{p} .285)=\log 15971883$
Annuity to amount to $£ 1$ in 29 years $=\log { }_{2}{ }^{\circ} 3277027={ }^{2} 021267$
Annual interest on $£ \mathrm{I}$
Annual payment required

$$
\begin{aligned}
& =\stackrel{045}{.066267} \\
=\log \overline{2} .8212973 & =
\end{aligned}
$$

If, on the other hand, we want to know the present value of an annuity of $£ 1$ for 29 years on the condition that interest on the loan is being paid at $4 \frac{1}{2} \%$, and the principal is being replaced by accumulation at $3 \frac{1}{4} \%$, we must take the reciprocal of the above amount. This is $\log 0 \cdot 0-\log \overline{2} \cdot 8212973=1.1787027=£_{15}{ }^{\circ} 0905$.

What is the value of an annuity of $£ \mathrm{I}$ for 50 years yielding interest on capital at $5 \%$, and replacing capital when invested at $3 \%$ ?

$$
\begin{aligned}
& \text { Annuity } £_{\mathrm{I}} \text { will purchase ( } \mathrm{p} .283 \text { ) }=\log \overline{2} \cdot{ }^{2} 895642
\end{aligned}
$$

$$
\begin{aligned}
& \text { Annuity to amount to } E_{\mathrm{I}} \text { in } 50 \text { years }=\log 39477030=0088655 \\
& \text { Annual interest on } £ \mathrm{I} \\
& ={ }^{\circ} 0 \\
& \text { Annuity to pay } £ \mathrm{I} \text { and interest }=\log \overline{2} \cdot 7698608={ }^{\circ}{ }^{\circ} 88665
\end{aligned}
$$

Required value of annuity $=\log 0 \cdot 0-\log \overline{2} \cdot 7698608=\log$ $1.230139^{2}=£^{16.98788}$, which agrees with the amount given on p. 120.

As in other cases, the values or amounts of annuities other than $£ \mathrm{I}$ may be obtained by the addition of the logarithms.

## Logarithm of the Rate of Interest

The Tables on pp. 318-320 give the logarithm of the rate of interest under the heading $t$. This is in modern notation represented by the symbol $i$. On p. 318 this is given to 10 places of decimals for every rate given in M. Thoman's first Table (pp. 269-316). On p. 319 it is given for every $\frac{1}{10}$ th $\%$ up to $10 \%$, and on p. 320 for every $\frac{1}{12}$ th $\%$ also up to $10 \%$.

This Table is convenient for such calculations as the present value of $£ \mathrm{r}$ per annum, as may be seen from the first example on p. 222.

It has several times been pointed out that the more decimals are taken in the logarithm the more nearly exact will be the results. This is especially the case when the logarithm has to be multiplied.

## Logarithm of the Amount of I in I Period

This logarithm is given to 7 places of decimals on pp. 269-316 in the column $r^{2}$, but on p. 318 the logarithm is given to 10 places of decimals. As has just been said, the use of io places gives more nearly exact results than 7 places, though for most purposes 7 places are sufficient.

As an example of a fairly large difference, as differences go, take the amount of $£ \mathrm{I}$ for 90 years at $2 \frac{7}{8} \%:-$
$1{ }^{\circ} \mathbf{0 2 8 7 5 5 ^ { \circ }}($ see p .216$)=\log 0.0123098482(\mathrm{p} .318) \times 90$

$$
=\log 1 \cdot 1078863380=12 \cdot 8199544
$$

$\mathrm{r} \cdot 02875^{\circ 0}=\log 0 \cdot 0123098 \times 90=\log 1 \cdot 1078820=12.8198265$.
This only gives a difference of 25 shillings in the amount of $£ \mathrm{E} 0,000$ in 90 years, thus showing that 7 places are usually ample. Even this difference does not occur if we take the logarithm from p. 282, where it is seen to be $\log \mathrm{r} \cdot 1078863=12.8199533$, giving a difference of $£_{1}$ in the amount of one million pounds in 90 years.

The io-figure logarithms are useful, however, for the construction of a table of $(\mathrm{I}+i)^{n}$ (or $r^{n}$ ), as in pp. 269-316, where the multiplication is worked to 10 places, and the nearest 7 places are printed. This accounts for the smaller variation when $(\mathrm{I}+i)^{\infty}$ is taken from p. 282.

The tables on pp. 319 and 320 give $\log (1+i)$, or $\log r$, as M. Thoman called it, for every $\frac{1}{10}$ th and $\frac{1}{12}$ th $\%$, and it is more convenient to take these logarithms from this table than from the table of logarithms on pp. 230-266.

## The Logarithms of Log $r$

Under the heading of ' $\log ^{2} \gamma$ ' we have the logarithm of ' $\log r$.' Thus at $\frac{1}{2} \%{ }^{\prime} \log r^{\prime}=0.00216606$; and from p. 235 we see that this number $=\log 3.33567$, which agrees with the value of ' $\log ^{2} \gamma$ ' on p. 318.

We sometimes find it convenient to multiply a logarithm by taking the logarithm of the logarithm and adding the logarithm of the multiplier. This gives us a logarithm of the second order, as it were $\left(\log ^{2}\right)$, and the number corresponding to this $\log ^{2}$ is the $\log$ we require.

Thus to get the logarithm of $(1+i)^{87}$ when $i={ }^{\circ} 04$, we have

$$
\begin{aligned}
\log ^{2} r & =\log 2 \cdot 2312998(\text { p. } 318) \\
87 & =\log 1 \frac{9395193}{0.930} \\
\log (1+i)^{8_{7}} & =\log ^{2} \frac{1708191}{0}=\log 1.48190,
\end{aligned}
$$

thus agreeing with the figure given on p .29 I and with $\log (\mathrm{I}+i) \times 87$ by ordinary multiplication.

## TABLE <br> OF <br> <br> THE LOGARITHMS <br> <br> THE LOGARITHMS <br> of

## THE NATURAL NUMBERS <br> From 1 то 10,000

Log. 000. No. 100.

| No. | 0 | 1 | 2 | 3 | 4 | Difit. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 100 | 000000 | 000434 | 000868 | OOI301 | 001734 | 433 |
| IOI | 00432 I | 004751 | 005181 | 005609 | 006038 | 429 |
| 102 | 008600 | 009026 | 009451 | 009876 | 010300 | 425 |
| 103 | 012837 | O13259 | OI3680 | 014100 | 014521 | 421 |
| 104 | 017033 | -17451 | OI7868 | 018284 | 018700 | 416 |
| 105 | 021189 | 021603 | 022016 | 022428 | 022841 | 412 |
| 106 | 025306 | 025715 | 026125 | 026533 | 026942 | 409 |
| 107 | 029384 | 029789 | 030195 | 030600 | 031004 | 405 |
| 108 | 033424 | 033826 | 034227 | 034628 | 035029 | 401 |
| 109 | 037426 | 037825 | 038223 | -38620 | 039017 | 397 |
| 110 | 041393 | 041787 | 042182 | 042576 | 042969 | 393 |
| III | 045323 | 045714 | 046105 | 046495 | 046885 | 390 |
| 112 | 049218 | 049606 | 049993 | 050380 | 050766 | 387 |
| 113 | 053078 | 053463 | 053846 | 054230 | 054613 | 383 |
| II4 | 056905 | 057286 | 057666 | 058046 | 058426 | 380 |
| 115 | 060698 | 061075 | 061452 | 061829 | 062206 | 377 |
| 116 | 064458 | 064832 | 065206 | 065580 | 065953 | 374 |
| 117 | 068186 | 068557 | 068928 | 069298 | 069668 | 370 |
| 118 | 071882 | 072250 | 072617 | 072985 | 073352 | 367 |
| 119 | 075547 | 075912 | 076276 | 076640 | 077004 | 364 |
| 120 | 07918 I | 079543 | 079904 | 080266 | 080626 | 361 |
| 121 | 082785 | 083144 | 083503 | 083861 | 084219 | 358 |
| 122 | 086360 | 086716 | 087071 | 087426 | 087781 | 355 |
| 123 | 089905 | 090258 | 0906II | 090963 | 091315 | 352 |
| 124 | 093422 | 093772 | 094122 | 094471 | 094820 | 349 |
| 125 | 096910 | 097257 | 097604 | 097951 | 098298 | 347 |
| 126 | 100371 | 100715 | 101059 | 101403 | 101747 | 344 |
| 127 | 103804 | 104146 | 104487 | 104828 | 105169 | 341 |
| 128 | 107210 | 107549 | 107888 | 108227 | 108565 | 338 |
| 129 | 110590 | 110926 | I I I 263 | III 599 | II I934 | 336 |
| 130 | 113943 | I I4277 | II46II | I 14944 | 115278 | 333 |
| 131 | 117271 | 117603 | II7934 | 118265 | 118595 | 330 |
| 132 | 120574 | 120903 | 12123 I | 121560 | 121888 | 328 |
| 133 | 123852 | 124178 | 124504 | 124830 | 125156 | 326 |
| 134 | 127105 | 127429 | 127753 | 128076 | 128399 | 323 |
| 135 | 130334 | 130655 | 130977 | I31298 | 131619 | 321 |
| 136 | I 33539 | 133858 | 134177 | I 34496 | 134814 | 319 |
| 137 | ${ }^{1} 36721$ | 137037 | 137354 | 137671 | 137987 | 316 |
| 138 | I 39879 | 140194 | 140508 | 140822 | 141136 | 314 |
| 139 | 143015 | 143327 | 143639 | 143951 | 144263 | 312 |
| 140 | 146128 | 146438 | 146748 | 147058 | 147367 | 310 |
| 141 | 149219 | 149527 | 149835 | 150142 | 150449 | 307 |
| 142 | I 52288 | I 52594 | I 52900 | 153205 | 153510 | 305 |
| 143 | 155336 | 155640 | I55943 | I 56246 | I56549 | 303 |
| 144 | I 58362 | 158664 | 158965 | I 59266 | 159567 | 301 |
|  | 161368 | 161667 | 161967 | 162266 | 162564 | 299 |
| 146 | 164353 | 164650 | 164947 | 165244 | 165541 | 297 |
| 147 | 167317 | 167613 | 167908 | 168203 | 168497 | 295 |
| 148 | 170262 | 170555 | 170848 | 171141 | 171434 | 293 |
| 149 | I 73186 | 173478 | 173769 | 174060 | 17435 I | 291 |

For explanation see pp. 207-215

## Log. 175. No. 149.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 100 | 002166 | 002598 | 003029 | 003461 | 003891 | 431 |
| 101 | 006466 | 006894 | 00732 I | col748 | co8174 | 427 |
| 102 | 010724 | Orir 17 | O11570 | 011993 | 012415 | 423 |
| 103 | 014940 | 015360 | O15779 | 016197 | 016616 | 419 |
| 104 | 019116 | 019532 | or9947 | 020361 | 020775 | 415 |
| 105 | 023252 | 023664 | 024075 | 024486 | 024896 | 411 |
| 106 | 027350 | 027757 | 028164 | 028571 | 028978 | 407 |
| 107 | 031408 | 031812 | 032216 | 032619 | 033021 | 403 |
| 108 | 035430 | 035830 | 036230 | 036629 | 037028 | 399 |
| 109 | 039414 | 0398 II | 040207 | 040602 | 040998 | 396 |
| 110 | 043362 | 043755 | 044148 | 044540 | 044932 | 392 |
| III | 047275 | 047664 | 048053 | 048442 | 048830 | 389 |
| 112 | 051153 | 051538 | 051924 | 052309 | 052694 | 385 |
| 113 | 054996 | 055378 | 055760 | 056142 | 056524 | 382 |
| 114 | 058805 | 059185 | 059563 | 059942 | 060320 | 379 |
| 115 | 062582 | 062958 | 063333 | 063709 | 064083 | 375 |
| 116 | 066326 | 066699 | 06707 I | 067443 | 067815 | 372 |
| 117 | 070038 | 070407 | 070776 | 071145 | 071514 | 369 |
| 118 | 073718 | 074085 | 074451 | 074816 | 075182 | 366 |
| 119 | 077368 | 07773 I | 078094 | 078457 | 078819 | 363 |
| 120 | 080987 | 081347 | 081707 | 082067 | 082426 | 360 |
| 121 | 084576 | 084934 | 085291 | 085647 | 086004 | 357 |
| 122 | 088136 | 088490 | 088845 | 089198 | 089552 | 354 |
| 123 | 091667 | 092018 | 092370 | 092721 | 093071 | 351 |
| 124 | 095169 | 095518 | 095866 | 096215 | 096562 | 348 |
| 125 | 098644 | 098990 | 099335 | 099681 | 100026 | 345 |
| 126 | 102091 | 102434 | 102777 | 103119 | 103462 | 343 |
| 127 | 105510 | 105851 | 106191 | 106531 | 106871 | 340 |
| 128 | 108903 | 109241 | 109579 | 109916 | 110253 | 337 |
| 129 | 112270 | 112605 | 112940 | I 13275 | 113609 | 335 |
| 130 | 115611 | 115943 | 116276 | 116608 | 116940 | 332 |
| 131 | 118926 | 119256 | 119586 | 119915 | 120245 | 329 |
| 132 | 122216 | 122544 | 122871 | 123198 | 123525 | 327 |
| 133 | 125481 | 125806 | 126131 | 126456 | 126781 | 325 |
| 134 | 128722 | 129045 | 129368 | 129690 | 130012 | 322 |
|  | 131939 | 132260 | 132580 | 132900 | 133219 | 320 |
| 136 | 135133 | 135451 | 135769 | 136086 | 136403 | 318 |
| 137 | 138303 | 138618 | 138934 | 139249 | I 39564 | 315 |
| 138 | 141450 | 141763 | 142076 | 142389 | 142702 | 313 |
| 139 | 144574 | 144885 | 145196 | 145507 | 145818 | 311 |
| 140 | 147676 | 147985 | 148294 | 148603 | 148911 | 309 |
| 141 | 150756 | 151063 | 151370 | 151676 | 151982 | 306 |
| 142 | 153815 | 154120 | 154424 | 154728 | 155032 | 304 |
| 143 | 156852 | 157154 | 157457 | 157759 | 158061 | 302 |
| 144 | 159868 | 160168 | 160469 | 160769 | 161068 | 300 |
| 145 | 162863 | 163161 | 163460 | 163758 | 164055 | 298 |
| 146 | 165838 | 166134 | 166430 | 166726 | 167022 | 296 |
| 147 | 168792 | 169086 | 169380 | 169674 | 169968 | 294 |
| 148 | 171726 | 172019 | 172311 | 172603 | 172895 | 292 |
| 149 | 174641 | 174932 | 175222 | 175512 | 175802 | 290 |

Log. 176. No. 150.

| No. | 0 | 1 | 2 | 3 | 4 | Dift. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 150 | 176091 | 17638 I | 176670 | 176959 | 177248 | 289 |
| 151 | 178977 | 179264 | 179552 | 179839 | 180126 | 287 |
| 152 | 181844 | 182129 | 182415 | 182700 | 182985 | 285 |
| 153 | 184691 | 184975 | 185259 | 185542 | 185825 | 283 |
| 154 | 187521 | 187803 | 188084 | 188366 | 188647 | 281 |
| 155 | 190332 | 190612 | 190892 | 191171 | 191451 | 279 |
| 156 | 193125 | 193403 | 193681 | 193959 | 194237 | 278 |
| 157 | 195900 | 196176 | 196453 | 196729 | 197005 | 276 |
| 158 | 198657 | 198932 | 199206 | 19948 I | 199755 | 274 |
| 159 | 201397 | 201670 | 201943 | 202216 | 202488 | 273 |
| 160 | 204120 | 204391 | 204663 | 204934 | 205204 | 271 |
| 161 | 206826 | 207096 | 207365 | 207634 | 207904 | 269 |
| 162 | 209515 | 209783 | 210051 | 210319 | 210586 | 268 |
| 163 | 212188 | 212454 | 212720 | 212986 | 213252 | 266 |
| 164 | 214844 | 215109 | 215373 | 215638 | 215902 | 264 |
| 165 | 217484 | 217747 | 218010 | 218273 . | 218536 | 263 |
| 166 | 220108 | 220370 | 220631 | 220892 | 221153 | 261 |
| 167 | 222716 | 222976 | 223236 | 223496 | 223755 | 260 |
| 168 | 225309 | 225568 | 225826 | 226084 | 226342 | 258 |
| 169 | 227887 | 228144 | 228400 | 228657 | 228913 | 257 |
| 170 | 230449 | 230704 | 230960 | 231215 | 231470 | 255 |
| $\underline{71}$ | 232996 | 233250 | 233504 | 233757 | 234011 | 254 |
| 172 | 235528 | 235781 | 236033 | 236285 | 236537 | 252 |
| 173 | 238046 | 238297 | 238548 | 238799 | 239049 | 251 |
| 174 | 240549 | - 240799 | 241048 | 241297 | 241546 | 249 |
| 175 | 243038 | 243286 | 243534 | 243782 | 244030 | 248 |
| 176 | 245513 | 245759 | 246006 | 246252 | 246499 | 246 |
| 177 | 247973 | 248219 | 248464 | 248709 | 248954 | 245 |
| 178 | 250420 | 250664 | 250908 | 251151 | 251395 | 244 |
| 179 | 252853 | 253096 | 253338 | 253580 | 253822 | 242 |
| 180 | 255273 |  |  |  | 256237 | 241 |
| 181 | 257679 | 257918 | 258158 | 258398 | 258637 | 240 |
| 182 | 26007 I | 260310 | 260548 | 260787 | 261025 | 238 |
| 183 | 262451 | 262688 | 262925 | 263162 | 263399 | 237 |
| 184 | 264818 | 265054 | 265290 | 265525 | 26576 I | 236 |
| 185 | 267172 | 267406 | 267641 | 267875 | 268110 | 234 |
| 186 | 269513 | 269746 | 269980 | 270213 | 270446 | 233 |
| 187 | 271842 | 272074 | 272306 | 272538 | 272770 | 232 |
| 188 | 274158 | 274389 | 274620 | 274850 | 275081 | 231 |
| 189 | 276462 | 276692 | 276921 | 277151 | 277380 | 229 |
| 190 | 278754 | 278982 | 279211 | 279439 | 279667 | 228 |
| 191 | 281033 | 281261 | 281488 | 281715 | 281942 | 227 |
| 192 | 283301 | 283527 | 283753 | 283979 | 284205 | 226 |
| 193 | 285557 | 285782 | 286007 | 286232 | 286456 | 225 |
| 194 | 287802 | 288026 | 288249 | 288473 | 288696 | 224 |
| 195 | 290035 | 290257 | 290480 | 290702 | 290925 | 222 |
| 196 | 292256 | 292478 | 292699 | 292920 | 29314 I | 221 |
| 197 | 294466 | 294687 | 294907 | 295127 | 295347 | 220 |
| 198 | 296665 | 296884 | 297104 | 297323 | 297542 | 219 |
| 199 | 298853 | 299071 | 299289 | 299507 | 299725 | 218 |

For explanation see pp. 207-215

## Log. 300. No. 199.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 150 | 177536 | 177825 | 178113 | 178401 | 178689 | 288 |
| I5I | 180453 | 180699 | 180986 | 181272 | 181558 | 286 |
| 152 | 183270 | 183555 | 183839 | 184123 | 184407 | 284 |
| 153 | 186108 | 186391 | 186674 | 186956 | 187239 | 283 |
| 154 | 188928 | 189209 | 189490 | 189771 | 190051 | 281 |
| 155 | 191730 | 192010 | 192289 | 192567 | 192846 | 279 |
| 156 | 194514 | 194792 | 195069 | 195346 | 195623 | 277 |
| 157 | 197281 | 197556 | 197832 | 198107 | 198382 | 275 |
| ${ }^{1} 58$ | 200029 | 200303 | 200577 | 200850 | 201124 | 274 |
| 159 | 202761 | 203033 | 203305 | 203577 | 203848 | 272 |
| 160 | 205475 | 205746 | 206016 | 206286 | 206556 | 270 |
| 16I | 208173 | 208441 | 208710 | 208979 | 209247 | 269 |
| 162 | 210853 | 211121 | 211388 | 211654 | 211921 | 267 |
| 163 | 213518 | 213783 | 214049 | 214314 | 214579 | 265 |
| 164 | 216166 | 216430 | 216694 | 216957 | 217221 | 264 |
| 165 | 218798 | 219060 | 219323 | 219585 | 219846 | 262 |
| 166 | 221414 | 221675 | 221936 | 222196 | 222456 | 260 |
| 167 | 224015 | 224274 | 224533 | 224792 | 225051 | 259 |
| 168 | 226600 | 226858 | 227115 | 227372 | 227630 | 257 |
| 169 | 229170 | 229426 | 229682 | 229938 | 230193 | 256 |
| 170 | 231724 | 231979 | 232234 | 232488 | 232742 | 254 |
| 171 | 234264 | 234517 | 234770 | 235023 | 235276 | 253 |
| 172 | 236789 | 23704 I | 237292 | 237544 | 237795 | 251 |
| 173 | 239299 | 239550 | 239800 | 240050 | 240300 | 250 |
| 174 | 241795 | 242044 | 242293 | 242541 | 242790 | 249 |
| 175 | 244277 | 244525 | 244772 | 245019 | 245266 |  |
| 176 | 246745 | 246991 | 247237 | 247482 | 247728 | 246 |
| 177 | 249198 | 249443 | 249687 | 249932 | 250176 | 244 |
| ${ }^{178}$ | 251638 | 251881 | 252125 | 252368 | 2526 ro | 243 |
| 179 | 254064 | 254306 | 254548 | 254790 | 255031 | 242 |
| 180 | 256477 | 256718 | 256958 | 257198 | 257439 | 240 |
| 181 | 258877 | 259116 | 259355 | 259594 | 259833 | 239 |
| 182 | 261263 | 261501 | 261739 | 261976 | 262214 | 238 |
| 183 | 263636 | 263873 | 264109 | 264346 | 264582 | 236 |
| 184 | 265996 | 266232 | 266467 | 266702 | 266937 | 235 |
| 185 | 268344 | 268578 | 268812 | 269046 | 269279 | 234 |
| 186 | 270679 | 270912 | 271144 | 271377 | 271609 | 233 |
| 187 | 273001 | 273233 | 273464 | 273696 | 273927 | 231 |
| 188 | 275311 | 275542 | 275772 | 276002 | 276232 | 230 |
| 189 | 277609 | 277838 | 278067 | 278296 | 278525 | 229 |
| 190 | 279895 | 280123 | 280351 | 280578 | 280806 | 228 |
| 191 | 282169 | 282396 | 282622 | 282849 | 283075 | 226 |
| 192 | 28443 I | 284656 | 284882 | 285107 | 285332 | 225 |
| 193 | 286681 | 286905 | 287130 | 287354 | 287578 | 224 |
| 194 | 288920 | 289143 | 289366 | 289589 | 289812 | 223 |
| 195 |  | 291369 | 291591 | 291813 | 292034 | 222 |
| 196 | 293363 | 293584 | 293804 | 294025 | 294246 | 221 |
| 197 | 295567 | 295787 | 296007 | 296226 | 296446 | 220 |
| 198 | 297761 | 297979 | 298198 | 298416 | 298635 | 218 |
| 199 | 299943 | 300161 | 300378 | 300595 | 300813 | 217 |

Log. 301. No. 200.

| No. | 0 | 1 | 2 | 3 | 4 | Difr. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 200 | 301030 | 301247 | 301464 | 301681 | 301898 | 217 |
| 201 | 303196 | 303412 | 303628 | 303844 | 304059 | 216 |
| 202 | 305351 | 305566 | 305781 | 305996 | 306211 | 215 |
| 203 | 307496 | 307710 | 307924 | 308137 | 30835 I | 214 |
| 204 | 309630 | 309843 | 310056 | 310268 | 310481 | 213 |
| 205 | 311754 | 311966 | 312177 | 312389 | 312600 | 212 |
| 206 | 313867 | 314078 | 314289 | 314499 | 314710 | 211 |
| 207 | 315970 | 316180 | 316390 | 316599 | 316809 | 210 |
| 208 | 318063 | 318272 | 318481 | 318689 | 318898 | 209 |
| 209 | 320146 | 320354 | 320562 | 320769 | 320977 | 208 |
| 210 | 322219 | 322426 | 322633 | 322839 | 323046 | 207 |
| 211 | 324282 | 324488 | 324694 | 324899 | 325105 | 206 |
| 212 | 326336 | 326541 | 326745 | 326950 | 327155 | 205 |
| 213 | 328380 | 328583 | 328787 | 328991 | 329194 | 204 |
| 214 | 330414 | 330617 | 330819 | 331022 | 331225 | 203 |
| 215 | 332438 | 332640 | 332842 | 333044 | 333246 | 202 |
| 216 | 334454 | 334655 | 334856 | 335057 | 335257 | 201 |
| 217 | 336460 | 336660 | 336860 | 337060 | 337260 | 200 |
| 218 | 338456 | 338656 | 338855 | 339054 | 339253 | 199 |
| 2 I 9 | 340444 | 340642 | 340841 | 341039 | 341237 | 198 |
| 220 | 342423 | 342620 | 342817 | 343014 | 343212 | 197 |
| 221 | 344392 | 344589 | 344785 | 34498r | 345178 | 196 |
| 222 | 346353 | 346549 | 346744 | 346939 | 347135 | 195 |
| 223 | 348305 | 348500 | 348694 | 348889 | 349083 | 194 |
| 224 | 350248 | 350442 | 350636 | 350829 | 351023 | 194 |
| 225 | 352183 | 352375 | 352568 | 352761 | 352954 | 193 |
| 226 | 354108 | 354301 | 354493 | 354685 | 354876 | 192 |
| 227 | 356026 | 356217 | 356408 | 356599 | 356790 | 191 |
| 228 | 357935 | 358125 | 358316 | 358506 | 358696 | 190 |
| 229 | 359835 | 360025 | 360215 | 360404 | 360593 | 190 |
| 230 | 361728 | 361917 | 362105 | 362294 | 362482 | 189 |
| 231 | 363612 | 363800 | 363988 | 364176 | 364363 | 188 |
| 232 | 365488 | 365675 | 365862 | 366049 | 366236 | 187 |
| 233 | 367356 | 367542 | 367729 | 367915 | 368101 | 186 |
| 234 | 369216 | 369401 | 369587 | 369772 | 369958 | 185 |
| 235 | 371068 | 371253 | 371437 | 371622 | 371806 | 185 |
| 236 | 372912 | 373096 | 373280 | 373464 | 373647 | 184 |
| 237 | 374748 | 374932 | 375115 | 375298 | 375481 | 183 |
| 238 | 376577 | 376759 | 376942 | 377124 | 377306 | 182 |
| 239 | 378398 | 378580 | 378761 | 378943 | 379124 | 182 |
| 240 | 380211 | 380392 | 380573 | 380754 | 380934 | 181 |
| 241 | 382017 | 382197 | 382377 | 382557 | 382737 | 180 |
| 242 | 383815 | 383995 | 384174 | 384353 | 384533 | 179 |
| 243 | 385606 | 385785 | 385964 | 386142 | 38632 I | 179 |
| 244 | 387390 | 387568 | 387746 | 387923 | 388101 | 178 |
| 245 | 389166 | 389343 | 389520 | 389698 | 389875 | 177 |
| 246 | 390935 | 391112 | 391288 | 391464 | 39164 I | 176 |
| 247 | 392697 | 392873 | 393048 | 393224 | 393400 | 176 |
| 248 | 394452 | 394627 | 394802 | 394977 | 395152 | 175 |
| 249 | 396199 | 396374 | 396548 | 396722 | 396896 | 174 |

For explanation see pp. 207-215

## Log. 397. No. 249.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 200 | 302114 | 302331 | 302547 | 302764 | 302980 | 216 |
| 201 | 304275 | 304491 | 304706 | 304921 | 305136 | 215 |
| 202 | 306425 | 306639 | 306854 | 307068 | 307282 | 214 |
| 203 | 308564 | 308778 | 308991 | 309204 | 309417 | 213 |
| 204 | 310693 | 310906 | 311118 | 311330 | 311542 | 212 |
| 205 | 312812 | 313023 | 313234 | 313445 | 313656 | 211 |
| 206 | 314920 | 315130 | 315340 | 31555 I | 315760 | 210 |
| 207 | 317018 | 317227 | 317436 | 317646 | 317854 | 209 |
| 208 | 319106 | 319314 | 319522 | 319730 | 319938 | 208 |
| 209 | 321184 | 321391 | 321598 | 321805 | 322012 | 207 |
| 210 | 323252 | 323458 | 323665 | 323871 | 324077 | 206 |
| 211 | 325310 | 325516 | 325721 | 325926 | 326131 | 205 |
| 212 | 327359 | 327563 | 327767 | 327972 | 328176 | 204 |
| 213 | 329398 | 329601 | 329805 | 330008 | 330211 | 203 |
| 214 | 331427 | 331630 | 331832 | 332034 | 332236 | 202 |
| 215 | 333447 | 333649 | 333850 | 334051 | 334253 | 201 |
| 216 | 335458 | 335658 | 335859 | 336059 | 336260 | 200 |
| 217 | 337459 | 337659 | 337858 | 338058 | 338257 | 199 |
| 218 | 339451 | 339650 | 339849 | 340047 | 340246 | 199 |
| 219 | 341435 | 341632 | 341830 | 342028 | 342225 | 198 |
| 220 | 343409 | 343606 | 343802 | 343999 | 344196 | 197 |
| 221 | 345374 | 345570 | 345766 | 345962 | 346157 | 196 |
| 222 | 347330 | 347525 | 347720 | 347915 | 348110 | 195 |
| 223 | 349278 | 349472 | 349666 | 349860 | 350054 | 194 |
| 224 | 351216 | 351410 | 351603 | 351796 | 351989 | 193 |
|  | 353147 | 353339 | 353532 | 353724 | 353916 | 192 |
| 226 | 355068 | 355260 | 355452 | 355643 | 355834 | 192 |
| 227 | 356981 | 357172 | 357363 | 357554 | 357744 | 191 |
| 228 | 358886 | 359076 | 359266 | 359456 | 359646 | 190 |
| 229 | 360783 | 360972 | 361161 | 361350 | 361539 | 189 |
| 230 | 362671 | 362859 | 363048 | 363236 | 363424 | 188 |
| 231 | 364551 | 364739 | 364926 | 365113 | 365301 | 187 |
| 232 | 366423 | 3666 ro | 366796 | 366983 | 367169 | 187 |
| 233 | 368287 | 368473 | 368659 | 368845 | 369030 | 186 |
| 234 | 370143 | 370328 | 370513 | 370698 | 370883 | 185 |
| 235 | 371991 | 372175 | 372360 | 372544 | 372728 | 184 |
| 236 | 373831 | 374015 | 374198 | $3743^{82}$ | 374565 | 183 |
| 237 | 375664 | 375846 | 376029 | 376212 | 376394 | 183 |
| 238 | 377488 | 377670 | 377852 | 378034 | 378216 | 182 |
| 239 | 379306 | 379487 | 379668 | 379849 | 380030 | 181 |
| 240 | 381115 | 381296 | 381476 | 381656 | 381837 | 180 |
| 241 | 382917 | 383097 | 383277 | 383456 | 383636 | 180 |
| 242 | 384712 | 384891 | 385070 | 385249 | 385428 | 179 |
| 243 | 386499 | 386677 | 386856 | 387034 | 387212 | 178 |
| 244 | 388279 | 388456 | 388634 | 388811 | 388989 | 177 |
| 245 | 390051 | 390228 | 390405 | 390582 | 390759 | 177 |
| 246 | 391817 | 391993 | 392169 | 392345 | 392521 | 176 |
| 247 | 393575 | 393751 | 393926 | 394101 | 394277 | 175 |
| 248 | 395326 | 395501 | 395676 | 395850 | 396025 | 175 |
| 249 | 397071 | 397245 | 397419 | 397592 | 397766 | 174 |

## Log. 397. No. 250.

| No. | 0 | 1 | 2 | 3 | 4 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 250 | 397940 | 398114 | 398287 | 398461 | 398634 | 173 |
| 251 | 399674 | 399847 | 400020 | 400192 | 400365 | 173 |
| 252 | 401401 | 401573 | 401745 | 401917 | 402089 | 172 |
| ${ }^{253}$ | 403121 | 403292 | 403464 | 403635 | 403807 | ${ }^{171}$ |
| 254 | 404834 | 405005 | 405176 | 405346 | 405517 | 171 |
| 255 | 406540 | 406710 | 406881 | 407051 | 407221 | O |
| 255 | 408240 | 408410 | 408579 | 408749 | 408918 | 69 |
| 257 258 | 409933 | 410102 | 410271 | 410440 | 410609 | 169 |
| 258 259 | 411620 413300 | 411788 413467 | 411956 413635 | $\stackrel{412124}{413803}$ | 412293 413970 | 166 |
| 260 | 414973 | 415140 | 415307 | 415474 | 415641 | 167 |
| 261 | 416641 | 416807 | 416973 | 417139 | 417306 | 166 |
| 262 | 418301 | 418467 | 418633 | 418798 | 418964 | 165 |
| 263 | 419956 | 420121 | 420286 | 42045 I | 420616 | 165 |
| 264 | 421604 | 421768 | 421933 | 422097 | 422261 | 164 |
| 265 | 423246 | 423410 | 423574 | 423737 | 423901 | 163 |
| 266 | 424882 | 425045 | 425208 | 425371 | 425534 | 163 |
| 267 | 426511 | 426674 | 426836 | 426999 | 427151 | 162 |
|  | 428135 | 428297 | 428459 | 428621 | 428783 | 162 |
| 269 | 429752 | 429914 | 430075 | 430236 | 430398 | 61 |
| 270 | 431364 | 431525 | 431685 | 431846 | 432007 | 160 |
| 271 | 432969 | 433130 | 433290 | 433450 | 433610 | 160 |
| 272 | 434569 | 434729 | 434888 | 435048 | 435207 | 159 |
| 273 | 436163 | 436322 | 43648 I | 436640 | 436799 | 159 |
| 274 | 437751 | 437909 | 438067 | 438226 | 438384 | 158 |
| 275 | 439333 | 439491 | 439648 | 439806 | 439964 | 157 |
| 276 | 440909 | 441066 | 441224 | 441381 | 441538 | 157 |
| 277 | 442480 | 442637 | 442793 | 442950 | 443106 | 156 |
| 278 | 444045 | 444201 | 444357 | 444513 | 444669 | 156 |
| 279 | 445604 | 445760 | 445915 | 446071 | 446226 | 155 |
| 280 | 447158 | 447313 | 447468 | 447623 | 447778 | 155 |
| ${ }^{281}$ | 448706 | 44886I | 449015 | 449170 | 449324 | 154 |
| 282 | 450249 | 450403 | 450557 | 450711 | 450865 | 154 |
| 283 | 451786 | 451940 | 452093 | 452247 | 452400 | 153 |
| 284 | 453318 | 453471 | 453624 | 453777 | 453930 | 153 |
| 285 | 454845 |  | 455150 | 455302 | 455454 | 152 |
| 286 | 456366 | 456518 | 456670 | 456821 | 456973 | 152 |
| 287 288 | 457882 | 458053 | $45^{81184}$ | ${ }^{458336}$ | 458487 | 151 |
| 288 289 | 459392 460898 | 459543 461048 | 459694 46198 | 459845 461348 | 459995 461499 | 151 150 |
| 290 | 462398 | 462548 | 462697 | 462847 | 462997 | 149 |
| 291 | 463893 | 464042 | 464191 | 464340 | 464490 | 149 |
| 292 | 465383 | 465532 | 465680 | 465829 | 465977 | 148 |
| 293 | 466868 | 467016 | 467164 | 467312 | 467460 | 148 |
| 294 | 468347 | 468495 | 468643 | 468790 | 468938 | 147 |
| 295 | 469822 | 469969 | 470116 | 470263 | 470410 | 147 |
| 296 | 471292 | 471438 | 471585 | 471732 | 471878 | 146 |
| 297 | 472756 | 472903 | 473049 | 473195 | 473341 | 146 |
| 298 | 474216 475671 | 474362 475816 | 474508 475962 | 474653 | 474799 476252 | 146 |
| 299 | 475671 | 475816 | 475962 | 476107 | 476252 | 145 |

For explanation see pp. 207-215

## Log. 476. No. 299.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 250 | 398808 | 398981 | 399154 | 399328 | 399501 | 173 |
| 251 | 400538 | 400711 | 400883 | 401056 | 401228 | 173 |
| 252 | 402261 | 402433 | 402605 404320 | 402777 | 402949 | 172 <br> 171 <br> 171 |
| 253 254 | 403978 405688 | 404149 405858 | 404320 406029 | 404492 406199 | 404663 406370 | 171 <br> 171 |
| 255 | 407391 | 407561 | 407731 | 407901 | 408070 | 170 |
| 256 | 409087 | 409257 | 409426 | 409595 | 409764 | 169 |
| 257 | 410777 | 410946 | 41114 | 411283 | 411451 | 169 |
| 258 | 412461 | 412629 | 412796 | 412964 | 413132 | 168 |
| 259 | 414137 | 414305 | 414472 | 414639 | 414806 | 167 |
| 260 | 415808 | 415974 | 416141 | 416308 | 416474 | 167 |
| 26 r | 417472 | 417638 | 417804 | 417970 | 418135 | 166 |
| 262 | 419129 | 419295 | 419460 | 419625 | 41979 I | 165 |
| 263 | 42078I | 420945 | 421110 | 421275 | 421439 | 165 |
| 264 | 422426 | 422590 | 422754 | 422918 | 423082 | 164 |
| 265 | 424065 | 424288 | 424392 | 424555 | 424718 | 163 |
| 266 | 425697 | 425860 | 426023 | 426186 | 426349 | 163 |
| ${ }^{267}$ | 427324 | 427486 | 427648 | 427811 | 427973 | 162 |
| 268 | 428944 | 429106 | 429268 | 429429 | 429591 | 162 |
| 269 | 430559 | 430720 | 430881 | 431042 | 431203 | 161 |
| 270 | 432167 | 432328 | 432488 | 432649 | 432809 | 160 |
| 271 | $43377{ }^{\circ}$ | 433930 | 434090 | 434249 | 434409 | 160 |
| 272 | 435367 | 435526 | 435685 | 435844 | 436004 | 159 |
| 273 | 436957 | 437116 | 437275 | 437433 | 437592 | 159 |
| 274 | 438542 | 438701 | 438859 | 439017 | 439175 | 158 |
| 275 | 440122 | 440279 | 440437 | 440594 | 440752 | 157 |
| 276 | 441695 | 441852 | 442009 | 442163 | 442323 | 157 |
| 277 | 443263 | 443419 | ${ }^{4435736}$ | 443732 | 443849 | ${ }^{156}$ |
| 278 | 444825 | 444981 | 445137 | 445293 | 445449 | 156 |
| 279 | 446382 | 446537 | 446692 | 446848 | 447003 | 155 |
| 280 | 447933 | 448088 | 448242 | 448397 | 448552 | 155 |
| 281 | 449478 | 449633 | 449787 | 449941 | 450095 | 154 |
| 282 | 451018 | 451172 | 451326 | 451479 | 451633 | 154 |
| 283 | 452553 | 452706 | 452859 | 453012 | 453165 | 153 |
| 284 | 454082 | 454235 | 454387 | 454540 | 454692 | 153 |
| 285 | 455606 | 455758 | 455910 | 456062 | 456214 | 152 |
| 286 | 457125 | 457276 | 457428 | 457579 | 457731 | ${ }_{1}^{152}$ |
| 287 | 458638 | ${ }_{4}^{458789}$ | 458940 |  | 459242 <br> 460748 <br> 4 | 151 150 |
| 288 | 460146 | 460296 461799 | 460447 461948 | 460597 462098 | 460748 | 150 |
| 289 | 461649 | 461799 | 461948 | 462098 | 462248 | 150 |
| 290 | 463146 | 463296 | 463445 | 463594 | 463744 | 149 |
| 291 | 464639 | 464788 466274 | ${ }_{4}^{4649363}$ | ${ }_{4}^{465085}$ | 465234 466719 | 149 148 |
| 292 | 466126 | 466274 | 466423 | 466571 | 466719 | 148 |
| 293 | 467608 | 467756 | 467904 | 468052 | 468200 | 148 |
| 294 | 469085 | 469233 | 469380 | 469527 | 469675 | 147 |
| 295 | 470557 | 470704 | 470851 | 470998 | 471145 | 147 |
| 296 | 472025 | 472171 | 472318 | 472464 | 472610 | 146 |
| 297 298 | 473487 47494 | 473633 475090 | 473779 475235 |  | 474071 475526 | 146 146 |
| 298 | 474944 476397 | 475090 476542 |  | 47538 I 476832 | 475526 476976 | 146 145 |
| 299 | 476397 | 476542 | 476687 | 476832 | 476976 | 145 |

Log. 477. No. 300.

| No. | 0 | 1 | 2 | 3 | 4 | Diff, |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 300 | 477121 | 477266 | 477411 | 477555 | 477700 | 145 |
| 301 | 478566 | 478711 | 478855 | 478999 | 479143 | 144 |
| 302 | 480007 | 480151 | 480294 | 480438 | 480582 | 144 |
| 303 | 481443 | 481586 | 481729 | 48 I 872 | 482016 | 143 |
| 304 | 482874 | 483016 | 483159 | 483302 | 483445 | 143 |
| 305 | 484300 | 484442 | 484585 | 484727 | 484869 | 142 |
| 306 | 485721 | 485863 | 486005 | 486147 | 486289 | 142 |
| 307 | 487138 | 487280 | 48742 I | 487563 | 487704 | 141 |
| 308 | 488551 | 488692 | 488833 | 488974 | 489114 | 141 |
| 309 | 489958 | 490099 | 490239 | 490380 | 490520 | 140 |
| 310 | 491362 | 491502 | 491642 | 491782 | 491922 | 140 |
| 311 | 492760 | 492900 | 493040 | 493179 | 493319 | 139 |
| 312 | 494155 | 494294 | 494433 | 494572 | 494711 | 139 |
| 313 | 495544 | 495683 | 495822 | 495960 | 496099 | 138 |
| 314 | 496930 | 497068 | 497206 | 497344 | 497483 | 138 |
| 315 | 498311 | 498448 | 498586 | 498724 | 498862 | 138 |
| 316 | 499687 | 499824 | 499962 | 500099 | 500236 | 137 |
| 317 | 501059 | 501196 | 501333 | 501470 | 501607 | 137 |
| 318 | 502427 | 502564 | 502700 | 502837 | 502973 | 136 |
| 319 | 503791 | 503927 | 504063 | 504199 | 504335 | 136 |
| 320 | 505150 | 505286 | 505421 | 505557 | 505693 | 136 |
| 321 | 506505 | 506640 | 506776 | 506911 | 507046 | 135 |
| 322 | 507856 | 507991 | 508126 | 508260 | 508395 | 135 |
| 323 | 509203 | 509337 | 509471 | 509606 | 509740 | $\pm 34$ |
| 324 | 510545 | 510679 | 510813 | 510947 | 511081 | 134 |
| 325 | 511883 | 512017 | 512151 | 512284 | 512418 | 133 |
| 326 | 513218 | 513351 | 513484 | 513617 | 513750 | 133 |
| 327 | 514548 | 514681 | 514813 | 514946 | 515079 | 133 |
| 328 | 515874 | 516006 | 516139 | 516271 | 516403 | 132 |
| 329 | 517196 | 517328 | 517460 | 517592 | 517724 | 132 |
| 330 | 518514 | 518646 | 518777 | 518909 | 519040 | 131 |
| 33 I | 519828 | 519959 | 520090 | 520221 | 520353 | 131 |
| 332 | 521138 | 521269 | 521400 | 521530 | 521661 | 131 |
| 333 | 522444 | 522575 | 522705 | 522835 | 522966 | 130 |
| 334 | 523746 | 523876 | 524006 | 524136 | 524266 | 130 |
| 335 | 525045 |  |  |  |  |  |
| 336 | 526339 | 526469 | 526598 | 526727 | 526856 | 129 |
| 337 | 527630 | 527759 | 527888 | 528016 | 528145 | 129 |
| 338 | 528917 | 529045 | 529174 | 529302 | 529430 | 128 |
| 339 | 530200 | 530328 | 530456 | 530584 | 530712 | 128 |
| 340 | 531479 | 531607 | 531734 | 531862 | 531990 | 128 |
| 341 | 532754 | 532882 | 533009 | 533136 | 533264 | 127 |
| 342 | 534026 | 534153 | 534280 | 534407 | 534534 | 127 |
| 343 | 535294 | 535421 | 535547 | 535674 | 535800 | 126 |
| 344 | 536558 | 536685 | 536811 | 536937 | 537063 | 126 |
|  | 537819 | 537945 | 538071 | 538197 | 538322 | 126 |
| 346 | 539076 | 539202 | 539327 | 539452 | 539578 | 125 |
| 347 | 540329 | 540455 | 540580 | 540705 | 540830 | 125 |
| 348 | 541579 | 541704 | 541829 | 541953 | 542078 | 125 |
| 349 | 542825 | 542950 | 543074 | 543199 | 543323 | 124 |

Log. 543. No. 349.

| No. | 5 | 6 | 7 | 8 | 9 | Ditt. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 300 | 477844 | 477989 | 478133 | 478278 | 478422 | 145 |
| 301 | 479287 | 47943 I | 479575 | 479719 | 479863 | 144 |
| 302 | 480725 | 480869 | $48 \mathrm{IO12}$ | 481156 | 481299 | 144 |
| 303 | 482159 | 482302 | 482445 | 482588 | 482731 | 143 |
| 304 | 483587 | 483730 | 483872 | 484015 | 484157 | 143 |
| 305 | 485011 | 485153 | 485295 | 485437 | 485579 | 142 |
| 306 | 486430 | 486572 | 486714 | 486855 | 486997 | 142 |
| 307 | 487845 | 487986 | 488 I 27 | 488269 | 488410 | 141 |
| 308 | 489255 | 489396 | 489537 | 489677 | 489818 | 141 |
| 309 | 490661 | 490801 | 490941 | 49108I | 491222 | 140 |
| 310 | 492062 | 492201 | 492341 | 49248r | 49262I | 139 |
| 311 | 493458 | 493597 | 493737 | 493876 | 494015 | 139 |
| 312 | 494850 | 494989 | 495128 | 495267 | 495406 | 139 |
| 313 | 496238 | 496376 | 496515 | 496653 | 496791 | 138 |
| 314 | 497621 | 497759 | 497897 | 498035 | 498173 | 138 |
| 355 | 498999 | 499137 | 499275 | 499412 | 499550 | 138 |
| 316 | 500374 | 500511 | 500648 | 500785 | 500922 | 137 |
| 317 | 501744 | 501880 | 502017 | 502154 | 502291 | 137 |
| 318 | 503109 | 503246 | 503382 | 503518 | 503655 | 136 |
| 319 | 504471 | 504607 | 504743 | 504878 | 505014 | 136 |
| 320 | 505828 | 505964 | 506099 | 506234 | 506370 | 136 |
| 321 | 507181 | 507316 | 507451 | 507586 | 507721 | 135 |
| 322 | 508530 | 508664 | 508799 | 508934 | 509068 | 135 |
| 323 | 509874 | 510009 | 510143 | 510277 | 510411 | 134 |
| 324 | 511215 | 511349 | 5 II 482 | 511616 | 511750 | 134 |
| 325 | 512551 | 512684 | 512818 | 512951 | 513084 | 133 |
| 326 | 513883 | 514016 | 514149 | 514282 | 514415 | 133 |
| 327 | 515211 | 515344 | 515476 | 515609 | 515741 | 133 |
| 328 | 516535 | 516668 | 516800 | 516932 | 517064 | 132 |
| 329 | 517855 | 517987 | 518119 | 518251 | 518382 | 132 |
| 330 | 519171 | 519303 | 519434 | 519566 | 519697 | 131 |
| 331 | 520484 | 520615 | 520745 | 520876 | 521007 | 131 |
| 332 | 521792 | 521922 | 522053 | 522183 | 522314 | 131 |
| 333 | 523096 | 523226 | 523356 | 523486 | 523616 | 130 |
| 334 | 524396 | 524526 | 524656 | 524785 | 5249 r 5 | 130 |
| 335 | 525693 | 525822 | 525951 | 526081 | 526210 | 129 |
| 336 | 526985 | 527114 | 527243 | 527372 | 527501 | 129 |
| 337 | 528274 | 528402 | 52853 I | 528660 | 528788 | 129 |
| 338 | 529559 | 529687 | 529815 | 529943 | 530072 | 128 |
| 339 | 530840 | 530968 | 531096 | 531223 | 531351 | 128 |
| 340 | 532117 | 532245 | 532372 | 532500 | 532627 | 128 |
| 341 | 533391 | 533518 | 533645 | 533772 | 533899 | 127 |
| 342 | 534661 | 534787 | 534914 | 53504 I | 535167 | 127 |
| 343 | 535927 | 536053 | 536180 | 536306 | 536432 | 126 |
| 344 | 537189 | 537315 | 53744 I | 537567 | 537693 | 126 |
| 345 | 538448 | 538574 | 538699 | 538825 | 538951 | 126 |
| 346 | 539703 | 539829 | 539954 | 540079 | 340204 | 125 |
| 347 | 540955 | 541080 | 541205 | 541330 | 541454 | 125 |
| 348 349 | 542203 543447 | 542327 | 542452 | 542576 | 542701 | 125 |
| 349 | 543447 | 543571 | 543696 | 543820 | 543944 | 124 |

## Log. 544. No. 350.

| No. | 0 | 1 | 2 | 3 | 4 | Dift. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 350 | 544068 | 544192 | 544316 | 544440 | 544564 | 124 |
| 351 | 545307 | 545431 | 545555 | 545678 | 545802 | 124 |
| 352 | 546543 | 546666 | 546789 | 546913 | 547036 | 123 |
| 353 | 547775 | 547898 | 548021 | 548144 | 548267 | 123 |
| 354 | 549003 | 549126 | 549249 | 549371 | 549494 | 123 |
| 355 | 550228 | 550351 | 550473 | 550595 | 550717 | 122 |
| 356 | 551450 | 551572 | 551694 | 551816 | 551938 | 122 |
| 357 | 552668 | 552790 | 552911 | 553033 | 553155 | 121 |
| 358 | 553883 | 554004 | 554126 | 554247 | 554368 | 121 |
| 359 | 555094 | 555215 | 555336 | 555457 | 555578 | 121 |
| 360 | 556303 | 556423 | 556544 | 556664 | 556785 | 120 |
| 361 | 557507 | 557627 | 557748 | 557868 | 557988 | 120 |
| 362 | 558709 | 558829 | 558948 | 559068 | 559188 | 120 |
| 363 | 559907 | 560026 | 560146 | 560265 | 560385 | 119 |
| 364 | 56 I IOI | 561221 | 561340 | 561459 | 561578 | 119 |
| 365 | 562293 | 562412 | 562531 | 562650 | 562769 | 119 |
| 366 | 563481 | 563600 | 563718 | 563837 | 563955 | 119 |
| 367 | 564666 | 564784 | 564903 | 565021 | 565139 | 118 |
| 368 | 565848 | 565966 | 566084 | 566202 | 566320 | 118 |
| 369 | 567026 | 567144 | 567262 | 567379 | 567497 | 118 |
| 370 | 568202 | 568319 | 568436 | 568554 | 568671 | 117 |
| 371 | 569374 | 569491 | 569608 | 569725 | 569842 | 117. |
| 372 | 570543 | 570660 | 570776 | 570893 | 571010 | 117 |
| 373 | 571709 | 571825 | 571942 | 572058 | 572174 | 116 |
| 374 | 572872 | 572988 | 573104 | 573220 | 573336 | 116 |
| 375 | 574031 | 574147 | 574263 | 574379 | 574494 | 116 |
| 376 | 575188 | 575303 | 575419 | 575534 | 575650 | 115 |
| 377 | 576341 | 576457 | 576572 | 576687 | 576802 | 115 |
| 378 | 577492 | 577607 | 577722 | 577836 | 577951 | 115 |
| 379 | 578639 | 578754 | 578868 | 578983 | 579097 | 114 |
| 380 | 579784 | 579898 | 580012 | 580126 | 58024 I | 114 |
| 38 I | 580925 | 581039 | 581153 | 581267 | 581381 | 114 |
| 382 | 582063 | 582177 | 582291 | 582404 | 582518 | 114 |
| 383 | 583199 | 583312 | 583426 | 583539 | 583652 | 113 |
| 384 | 58433 I | 584444 | 584557 | 584670 | 584783 | 113 |
| 385 | 585461 | 585574 | 585686 | 585799 | 585912 | 113 |
| 386 | 586587 | 586700 | 586812 | 586925 | 587037 | 112 |
| 387 | 587711 | 587823 | 587935 | 588047 | 588160 | 112 |
| 388 | 588832 | 588944 | 589056 | 589167 | 589279 | 112 |
| 389 | 589950 | 590061 | 590173 | 590284 | 590396 | 112 |
| 390 | 591065 | 591176 | 591287 | 591399 | 591510 | 111 |
| 391 | 592177 | 592288 | 592399 | 592510 | 592621 | III |
| 392 | 593286 | 593397 | 593508 | 593618 | 593729 | III |
| 393 | 594393 | 594503 | 594614 | 594724 | 594834 | 110 |
| 394 | 595496 | 595606 | 595717 | 595827 | 595937 | 110 |
| 395 | 596597 | 596707 | 596817 | 596927 | 597037 | 110 |
| 396 | 597695 | 597805 | 597914 | 598024 | 598134 | 110 |
| 397 | 598791 | 598900 | 599009 | 599119 | 599228 | 109 |
| 398 | 599883 | 599992 | 600101 | 600210 | 600319 | 109 |
| 399 | 600973 | 601082 | 601191 | 601299 | 601408 | 109 |

For explanation see pp. 207-215

Log. 601. No. 399.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 350 | 544688 | 544812 | 544936 | 545060 | 545183 | 124 |
| 351 | 545925 | 546049 | 546172 | 546296 | 546419 | 124 |
| 352 | 54755 | 547282 | 547405 | 547529 | 547652 | 123 |
| 353 | 548389 | 548512 | 548635 | 548758 | 548881 | 123 |
| 354 | 549616 | 549739 | 54986 I | 549984 | 550106 | 123 |
| 355 | 550840 | 550962 | 551084 | 551206 | 551328 | 122 |
| 356 | 552060 | 552181 | 552303 | 552425 | 552547 | 122 |
| 357 | 553276 | 553398 | 553519 | 553640 | 553762 | 121 |
| 358 | 554489 | 554610 | 554731 | 554852 | 554973 | 121 |
| 359 | 555699 | 555820 | 555940 | 556061 | 556182 | 121 |
| 360 | 556905 | 557026 | 557146 | 557267 | 557387 | 120 |
| 361 | 558108 | 558228 | 558349 | 558469 | 558589 | 120 |
| 362 | 559308 | 559428 | 559548 | 559667 | 559787 | 120 |
| 363 | 560504 | 560624 | 560743 | 560863 | 560982 | 119 |
| 364 | 561698 | 561817 | 561936 | 562055 | 562174 | 119 |
| 365 | 562887 | 563006 | 563125 | 563244 | 563362 | 119 |
| 366 | 564074 | 564192 | 5643 II | 564429 | 564548 | 119 |
| 367 | 565257 | 565376 | 565494 | 565612 | 565730 | 118 |
| 368 | 566437 | 566555 | 566673 | 566791 | 566909 | 118 |
| 369 | 567614 | 567732 | 567849 | 567967 | 568084 | 118 |
| 370 | 568788 | 568905 | 569023 | 569140 | 569257 | 117 |
| 371 | 569959 | 570076 | 570193 | 570309 | 570426 | 117 |
| 372 | 571126 | 571243 | 571359 | 571476 | 571592 | 117 |
| 373 | 572291 | 572407 | 572523 | 572639 | 572755 | 116 |
| 374 | $57345{ }^{2}$ | 573568 | 573684 | 573800 | 573915 | 116 |
| 375 | 574610 | 574726 | 574841 | 574957 | 575072 | 116 |
| 376 | 575765 | 575880 | 575996 | 576111 | 576226 | 115 |
| 377 | 576917 | 577032 | 577147 | 577262 | 577377 | 115 |
| 378 | 578066 | 578181 | 578295 | 578410 | 578525 | 155 |
| 379 | 579212 | 579326 | 57944 T | 579555 | 579669 | 114 |
| 380 | 580355 | 580469 | 580583 | 580697 | 580811 | 114 |
| 38 I | 581495 | 581608 | 581722 | 581836 | 581950 | 114 |
| 382 | 58263 I | 582745 | 582858 | 582972 | 583085 | 114 |
| 383 | 583765 | 583879 | 583992 | 584105 | 584218 | 113 |
| 384 | 584896 | 585009 | 585122 | 585235 | 585348 | 113 |
| 385 | 586024 | 586137 | 586250 | 586362 | 586475 | 113 |
| 386 | 587149 | 587262 | 587374 | 587486 | 587599 | 112 |
| 387 | 588272 | 588384 | 588496 | 588608 | 588720 | 112 |
| 388 | 589391 | 589503 | 589615 | 589726 | 589838 | 112 |
| 389 | 590507 | 590619 | 590730 | 590842 | 590953 | 112 |
| 390 | 591621 | 591732 | 591843 | 591955 | 592066 | 111 |
| 391 | 592732 | 592843 | 592954 | 593064 | 593175 | III |
| 392 | 593840 | 593950 | 594061 | 594171 | 594282 | 111 |
| 393 | 594945 | 595055 | 595165 | 595276 | 595386 | 110 |
| 394 | 596047 | 596157 | 596267 | 596377 | 596487 | 110 |
| 395 | 597146 | 597256 | 597366 | 597476 | 597586 | 110 |
| 396 | 598243 | 598353 | 598462 | 598572 | 598681 | 110 |
| 397 | 599337 | 599446 | 599556 | 599665 | 599774 | 109 |
| 398 | 600428 | 600537 | 600646 | 600755 | 600864 | 109 |
| 399 | 601517 | 601625 | 601734 | 601843 | 601951 | 109 |

Log. 602. No. 400.

| No. | 0 | 1 | 2 | 3 | 4 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 400 | 602060 | 602169 | 602277 | 602386 | 602494 | 108 |
| 401 | 603144 | 603253 | 603361 | 603469 | 603577 | 108 |
| 402 | 604226 | 604334 | 604442 | 604550 | 604658 | 108 |
| 403 | 605305 | 605413 | 605521 | 605628 | 605736 | 108 |
| 404 | 606381 | 606489 | 606596 | 606704 | 606811 | 107 |
| 405 | 607455 | 607562 | 607669 | 607777 | 607884 | 107 |
| 406 | 608526 | 608633 | 608740 | 608847 | 608954 | 107 |
| 407 | 609594 | 609701 | 609808 | 609914 | 610021 | 107 |
| 408 | 610660 | 610767 | 610873 | 610979 | 6ı1086 | 106 |
| 409 | 611723 | 611829 | 6ı1936 | 612042 | 612148 | 106 |
| 410 | 612784 | 612890 | 612996 | 613102 | 613207 | 106 |
| 411 | 613842 | 613947 | 614053 | 614159 | 614264 | 106 |
| 412 | 614897 | 615003 | 6 5 5108 | 6 I 5213 | 615319 | 105 |
| 413 | 615950 | 616055 | 616160 | 616265 | 616370 | 105 |
| 414 | 617000 | 617105 | 617210 | 617315 | 617420 | 105 |
| 45 | 618048 | 6I8153 | 618257 | 618362 | 618466 | 105 |
| 416 | 619093 | 619198 | 619302 | 619406 | 619511 | 104 |
| 417 | 620136 | 620240 | 620344 | 620448 | 620552 | 104 |
| 418 | 621176 | 621280 | 621384 | 621488 | 621592 | 104 |
| 419 | 622214 | 622318 | 622421 | 622525 | 622628 | 104 |
| 420 | 623249 | 623353 | 623456 | 623559 | 623663 | 103 |
| 421 | 624282 | 624385 | 624488 | 624591 | 624695 | 103 |
| 422 | 625312 | 625415 | 625518 | 625621 | 625724 | 103 |
| 423 | 626340 | 626443 | 626546 | 626648 | 626751 | 103 |
| 424 | 627366 | 627468 | 627571 | 627673 | 627775 | 102 |
| 425 | 628389 | 628491 | 628593 | 628695 | 628797 | 102 |
| 426 | 629410 | 629512 | 629613 | 629715 | 629817 | 102 |
| 427 | 630428 | 630530 | 630631 | 630733 | 630835 | 102 |
| 428 | 631444 | 631545 | 631647 | 631748 | 631849 | IOI |
| 429 | 632457 | 632559 | 632660 | 632761 | 632862 | IOI |
| $43^{\circ}$ | 633468 | 633569 | 633670 | 633771 | 633872 | IOI |
| 431 | 634477 | 634578 | 634679 | 634779 | 634880 | 101 |
| 432 | 635484 | 635584 | 635685 | 635785 | 635886 | 100 |
| 433 | 636488 | 636588 | 636688 | 636789 | 636889 | 100 |
| 434 | 637490 | 637590 | 637690 | 637790 | 637890 | 100 |
|  | 638489 | 638589 | 638689 | 638789 | 638888 | 100 |
| 436 | 639486 | 639586 | 639686 | 639785 | 639885 | 100 |
| 437 | 64048 I | 64058 I | 640680 | 640779 | 640879 | 99 |
| 438 | 641474 | 641573 | 641672 | 641771 | 641871 | 99 |
| 439 | 642465 | 642563 | 642662 | 642761 | 642860 | 99 |
| 440 | 643453 | 64355 I | 643650 | 643749 | 643847 | 98 |
| 44 I | 644439 | 644537 | 644636 | 644734 | 644832 | 98 |
| 442 | 645422 | 645521 | 645619 | 645717 | 645815 | 98 |
| 443 | 646404 | 646502 | 646600 | 646698 | 646796 | 98 |
| 444 | 647383 | 647481 | 647579 | 647676 | 647774 | 98 |
|  | 648360 | 648458 | 648555 | 648653 | 648750 | 97 |
| 446 | 649335 | 649432 | 649530 | 649627 | 649724 | 97 |
| 447 | 650308 | 650405 | 650502 | 650599 | 650696 | 97 |
| 448 | 651278 | 651375 | 651472 | 651569 | 651666 | 97 |
| 449 | 652246 | 652343 | 652440 | 652536 | 652633 | 97 |

For explanation see pp. 207-215

Log. 653. No. 449.

| No. | 5 | 6 | 7 | 8 | 9 | Dif. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 400 | 602603 | 6027 II | 602819 | 602928 | 603036 | 108 |
| 401 | 603686 | 603794 | 603902 | 604010 | 604118 | 108 |
| 402 | 604766 | 604874 | 604982 | 605089 | 605197 | 108 |
| 403 | 605844 | 605951 | 606059 | 606166 | 606274 | 108 |
| 404 | 606919 | 607026 | 607133 | 607241 | 607348 | 107 |
| 405 | 607991 | 608098 | 608205 | 608312 | 608419 | 107 |
| 406 | 609061 | 609167 | 609274 | 609381 | 609488 | 107 |
| 407 | 610128 | 610234 | 610341 | 610447 | 610554 | 107 |
| 408 | 611192 | 611298 | 611405 | 611511 | 6116I7 | 106 |
| 409 | 612254 | 612360 | 612466 | $61257^{2}$ | 612678 | 106 |
| 410 | 613313 | 613419 | 613525 | 613630 | 613736 | 106 |
| 411 | 614370 | 614475 | 61458 I | 614686 | 614792 | 106 |
| 412 | 615424 | 615529 | 615634 | 615740 | 615845 | 105 |
| 413 | 616476 | 616581 | 616686 | 616790 | 6 I 6895 | 105 |
| 414 | 617525 | 617629 | 617734 | 617839 | 617943 | 105 |
| 415 | 618571 | 618676 | 618780 | 618884 | 618989 | 105 |
| 416 | 619615 | 619719 | 619824 | 619928 | 620032 | 104 |
| -417 | 620656 | 620760 | 620864 | 620968 | 621072 | 104 |
| 418 | 621695 | 621799 | 621903 | 622007 | 622110 | 104 |
| 419 | 622732 | 622835 | 622939 | 623042 | 623146 | 104 |
| 420 | 623766 | 623869 | 623973 | 624076 | 624179 | 103 |
| 42 I | 624798 | 624901 | 625004 | 625107 | 625210 | 103 |
| 422 | 625827 | 625929 | 626032 | 626 I 35 | 626238 | 103 |
| 423 | 626853 | 626956 | 627058 | 627161 | 627263 | 103 |
| 424 | 627878 | 627980 | 628082 | 628185 | 628287 | 102 |
| 425 | 628900 | 629002 | 629104 | 629206 | 629308 | 102 |
| 426 | 629919 | 630021 | 630123 | 630224 | 630326 | 102 |
| 427 | 630936 | 631038 | 631139 | 631241 | 631342 | 102 |
| 428 | 631951 | 632052 | 632153 | 632255 | 632356 | 101 |
| 429 | 632963 | 633064 | 633165 | 633266 | 633367 | 101 |
| 430 | 633973 | 634074 | 634175 | 634276 | 634376 | IOI |
| 43 I | 63498 I | 635081 | 635182 | 635283 | 635383 | IOI |
| 432 | 635986 | 636087 | 636187 | 636287 | 636388 | 100 |
| 433 | 636989 | 637089 | 637189 | 637290 | 637390 | 100 |
| 434 | 637990 | 638090 | 638190 | 638290 | 638389 | 100 |
|  | 638988 | 639088 |  | 639287 | 639387 | 100 |
| 436 | 639984 | 640084 | 640183 | 640283 | 640382 | 100 |
| 437 | 640978 | 641077 | 641177 | 641276 | 641375 | 99 |
| 438 | 641970 | 642069 | 642168 | 642267 | 642366 | 99 |
| 439 | 642959 | 643058 | 643156 | 643255 | 643354 | 99 |
| 440 | 643946 | 644044 | 644143 | 644242 | 644340 | 98 |
| 441 | 644931 | 645029 | 645127 | 645226 | 645324 | 98 |
| 442 | 645913 | 646011 | 6461 Io | 646208 | 646306 | 98 |
| 443 | 646894 | 646992 | 647089 | 647187 | 647285 | 98 |
| 444 | 647872 | 647969 | 648067 | 648165 | 648262 | 98 |
| 445 | 648848 | 648945 | 649043 | 649140 | 649237 | 97 |
| 446 | 649821 | 649919 | 650016 | 650113 | 650210 | 97 |
| 447 | 650793 | 650890 | 650987 | 651084 | 651181 | 97 |
| 448 | 651762 | 651859 | 651956 | 652053 | 652150 | 97 |
| 449 | 652730 | 652826 | 652923 | 653019 | 653116 | 97 |

## LOGARITHMS

Log. 653. No. 450.

| No. | 0 | 1 | 2 | 3 | 4 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 450 | 653213 | 653309 | 653405 | 653502 | 653598 | 96 |
| 451 | 654177 | 654273 | 654369 | 654465 | 654562 | 96 |
| 452 | 655138 | 655235 | 655331 | 655427 | 655523 | 96 |
| 453 | 656098 | 656194 | 656290 | 656386 | 656482 | 96 |
| 454 | 657056 | 657152 | 657247 | 657343 | 657438 | 96 |
| 455 | 658011 | 658107 | 658202 | 658298 | 658393 | 95 |
| 456 | 658965 | 659060 | 659155 | 659250 | 659346 | 95 |
| 457 | 659916 | 660011 | 660106 | 660201 | 660296 | 95 |
| 458 | 660865 | 660960 | 661055 | 661150 | 661245 | 95 |
| 459 | 661813 | 661907 | 662002 | 662096 | 662191 | 94 |
| 460 | 662758 | 662852 | 662947 | 663041 | 663135 | 94 |
| 461 | 663701 | 663795 | 663889 | 663983 | 664078 | 94 |
| 462 | 664642 | 664736 | 664830 | 664924 | 665018 | 94 |
| 463 | 66558 I | 665675 | 665769 | 665862 | 665956 | 94 |
| 464 | 666518 | 666612 | 666705 | 666799 | 666892 | 94 |
| 465 | 667453 | 667546 | 667640 | 667733 | 667826 | 93 |
| 466 | 668386 | 668479 | 668572 | 668665 | 668759 | 93 |
| 467 | 669317 | 669410 | 669503 | 669596 | 669689 | 93 |
| 468 | 670246 | 670339 | 67043 I | 670524 | 670617 | 93 |
| 469 | 671173 | 671265 | 671358 | 671451 | 671543 | 93 |
| 470 | 672098 | 672190 | 672283 | 672375 | 672467 | 92 |
| 471 | 673021 | 673113 | 673205 | 673297 | 673390 | 92 |
| 472 | 673942 | 674034 | 674126 | 674218 | 674310 | 92 |
| 473 | 674861 | 674953 | 675045 | 675137 | 675228 | 92 |
| 474 | 675778 | 675870 | 675962 | 676053 | 676145 | 92 |
| 475 | 676694 | 676785 | 676876 | 676968 | 677059 | 91 |
| 476 | 677607 | 677698 | 677789 | 677881 | 677972 | 91 |
| 477 | 678518 | 678609 | 678700 | 678791 | 678882 | 91 |
| 478 | 679428 | 679519 | 679610 | 679700 | 679791 | 91 |
| 479 | 680336 | 680426 | 680517 | 680607 | 680698 | 91 |
| 480 | 681241 | 681332 | 681422 | 681513 | 681603 | 90 |
| 48 I | 682145 | 682235 | 682326 | 682416 | 682506 | 90 |
| 482 | 683047 | 683137 | 683227 | 683317 | 683407 | 90 |
| 483 | 683947 | 684037 | 684127 | 684217 | 684307 | 90 |
| 484 | 684845 | 684935 | 685025 | 685114 | 685204 | 90 |
| 485 | 685742 | 68583 I | 685921 | 686010 | 686100 | 90 |
| 486 | 686636 | 686726 | 686815 | 686904 | 686994 | 89 |
| 487 | 687529 | 687618 | 687707 | 687796 | 687886 | 89 |
| 488 | 688420 | 688509 | 688598 | 688687 | 688776 | 89 |
| 489 | 689309 | 689398 | 689486 | 689575 | 689664 | 89 |
| 490 | 690196 | 690285 | 690373 | 690462 | 690550 | 89 |
| 491 | 691081 | 691170 | 691258 | 691347 | 691435 | 88 |
| 492 | 691965 | 692053 | 692142 | 692230 | 692318 | 88 |
| 493 | 692847 | 692935 | 693023 | 693111 | 693199 | 88 |
| 494 | 693727 | 693815 | 693903 | 693991 | 694078 | 88 |
|  | 694605 | 694693 | 694781 | 694868 | 694956 | 88 |
| 496 | 695482 | 695569 | 695657 | 695744 | 695832 | 87 |
| 497 | 696356 | 696444 | 696531 | 696618 | 696706 | 87 |
| 498 | 697229 | 697317 | 697404 | 697491 | 697578 | 87 |
| 499 | 698 I I | 698188 | 698275 | 698362 | 698449 | 87 |

For explanation see pp. 207-215

Log. 698. No. 499.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 450 | 653695 | 653791 | 653888 | 653984 | 654080 | 96 |
| 451 | 654658 | 654754 | 654850 | 654946 | 655042 | 96 |
| 452 | 655619 | 655715 | 655810 | 655906 | 656002 | 96 |
| 453 | 656577 | 656673 | 656769 | 656864 | 656960 | 96 |
| 454 | 657534 | 657629 | 657725 | 657820 | 657916 | 96 |
| 455 | 658488 | 658584 | 658679 | 658774 | 658870 | 95 |
| 456 | 659441 | 659536 | 65963 I | 659726 | 659821 | 95 |
| 457 | 660391 | 660486 | 660581 | 660676 | 660771 | 95 |
| 458 | 661339 | 661434 | 661529 | 661623 | 661718 | 95 |
| 459 | 662286 | 662380 | 662475 | 662569 | 662663 | 94 |
| 460 | 663230 | 663324 | 663418 | 663512 | 663607 | 94 |
| 461 | 664172 | 664266 | 664360 | 664454 | 664548 | 94 |
| 462 | 665112 | 665206 | 665299 | 665393 | 665487 | 94 |
| 463 | 666050 | 666143 | 666237 | 66633 I | 666424 | 94 |
| 464 | 666986 | 667079 | 667173 | 667266 | 667360 | 94 |
| 465 | 667920 | 668013 | 668106 | 668199 | 668293 | 93 |
| 466 | 668852 | 668945 | 669038 | 669131 | 669224 | 93 |
| 467 | 669782 | 669875 | 669967 | 670060 | 670153 | 93 |
| 468 | 670710 | 670802 | 670895 | 670988 | 671080 | 93 |
| 469 | 671636 | 671728 | 671821 | 671913 | 672005 | 92 |
| 470 | 672560 | 672652 | 672744 | 672836 | 672929 | 92 |
| 47 I | 673482 | 673574 | 673666 | 673758 | 673850 | 92 |
| 472 | 674402 | 674494 | 674586 | 674677 | 674769 | 92 |
| 473 | 675320 | 675412 | 675503 | 675595 | 675687 | 92 |
| 474 | 676236 | 676328 | 676419 | 676511 | 676602 | 92 |
| 475 | 677151 | 677242 | 677333 | 677424 | 677516 | 91 |
| 476 | 678063 | 678154 | 678245 | 678336 | 678427 | 9 I |
| 477 | 678973 | 679064 | 679155 | 679246 | 679337 | 9 I |
| 478 | 679882 | 679973 | 680063 | 680154 | 680245 | 91 |
| 479 | 680789 | 680879 | 680970 | 681060 | 681151 | 91 |
| 480 | 681693 | 681784 | 681874 | 681964 | 682055 | 90 |
| 481 | 682596 | 682686 | 682777 | 682867 | 682957 | 90 |
| 482 | 683497 | 683587 | 683677 | 683767 | 683857 | 90 |
| 483 | 684396 | 684486 | 684576 | 684666 | 684756 | 90 |
| 484 | 685294 | 685383 | 685473 | 685563 | 685652 | 90 |
| 485 | 686189 | 686279 | 686368 | 686458 | 686547 | 90 |
| 486 | 687083 | 687172 | 687261 | 687351 | 687440 | 89 |
| 487 | 687975 | 688064 | 688153 | 688242 | 688331 | 89 |
| 488 | 688865 | 688953 | 689042 | 68913I | 689220 | 89 |
| 489 | 689753 | 68984 I | 689930 | 6900I9 | 690107 | 89 |
| 490 | 690639 | 690728 | 690816 | 690905 | 690993 | 89 |
| 491 | 691524 | 691612 | 691700 | 691789 | 691877 | 88 |
| 492 | 692406 | 692494 | 692583 | 69267 I | 692759 | 88 |
| 493 | 693287 | 693375 | 693463 | 693551 | 693639 | 88 |
| 494 | 694166 | 694254 | 694342 | 694430 | 694517 | 88 |
| 495 |  |  |  |  |  | 88 |
| 496 | 695919 | 696007 | 696094 | 696182 | 696269 | 87 |
| 497 | 696793 | 696880 | 696968 | 697055 | 697142 | 87 |
| 498 | 697665 | 697752 | 697839 | 697926 | 698014 | 87 |
| 499 | 698535 | 698622 | 698709 | 698796 | 698883 | 87 |

## Log. 698. No. 500.

| No. | 0 | 1 | 2 | 3 | 4 | Difr. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 500 | 698970 | 699057 | 699144 | 699231 | 699317 | 87 |
| 501 | 699838 | 699924 | 700011 | 700098 | 700184 | 87 |
| 502 | 700704 | 700790 | 700877 | 700963 | 701050 | 86 |
| 503 | 701568 | 701654 | 701741 | 701827 | 701913 | 86 |
| 504 | 702431 | 702517 | 702603 | 702689 | 702775 | 86 |
| 505 | 703291 | 703377 | 703463 | 703549 | 703635 | 86 |
| 506 | 704151 | 704236 | 704322 | 704408 | 704494 | 86 |
| 507 | 705008 | 705094 | 705179 | 705265 | 705350 | 86 |
| 508 | 705864 | 705949 | 706035 | 706120 | 706206 | 85 |
| 509 | 706718 | 706803 | 706888 | 706974 | 707059 | 85 |
| 510 | 707570 | 707655 | 707740 | 707826 | 707911 | 85 |
| 511 | 708421 | 708506 | 708591 | 708676 | 708761 | 85 |
| 512 | 709270 | 709355 | 709440 | 709524 | 709609 | 85 |
| 513 | 710117 | 710202 | 710287 | 710371 | 710456 | 85 |
| 514 | 710963 | 711048 | 711132 | 711217 | 711301 | 84 |
| 515 | 711807 | 711892 | 711976 | 712060 | 712144 | 84 |
| 516 | 712650 | 712734 | 712818 | 712902 | 712986 | 84 |
| 517 | 713491 | 713575 | 713659 | 713742 | 713826 | 84 |
| 518 | 714330 | 714414 | 714497 | 714581 | 714665 | 84 |
| 519 | 715167 | 715251 | 715335 | 715418 | 715502 | 84 |
| 520 | 716003 | 716087 | 716170 | 716254 | 716337 | 83 |
| 521 | 716838 | 716921 | 717004 | 717088 | 717171 | 83 |
| 522 | 717671 | 717754 | 717837 | 717920 | 718003 | 83 |
| 523 | 718502 | 718585 | 718668 | 718751 | 718834 | 83 |
| 524 | 719331 | 719414 | 719497 | 719580 | 719663 | 83 |
| 525 | 720159 | 720242 | 720325 | 720407 | 720490 | 83 |
| 526 | 720986 | 721068 | 721151 | 721233 | 721316 | 83 |
| 527 | 721811 | 721893 | 721975 | 722058 | 722140 | 82 |
| 528 | 722634 | 722716 | 722798 | 722881 | 722963 | 82 |
| 529 | 723456 | 723538 | 723620 | 723702 | 723784 | 82 |
| 530 | 724276 | 724358 | 724440 | 724522 | 724604 | 82 |
| 531 | 725095 | 725176 | 725258 | 725340 | 725422 | 82 |
| 532 | 725912 | 725993 | 726075 | 726156 | 726238 | 82 |
| 533 | 726727 | 726809 | 726890 | 726972 | 727053 | 81 |
| 534 | 727541 | 727623 | 727704 | 727785 | 727866 | 81 |
|  | 728354 | 728435 | 728516 | 728597 | 728678 | 81 |
| 536 | 729165 | 729246 | 729327 | 729408 | 729489 | 8I |
| 537 | 729974 | 730055 | 730136 | 730217 | 730298 | 81 |
| 538 | 730782 | 730863 | 730944 | 731024 | 731105 | 8 I |
| 539 | 731589 | 731669 | 731750 | 731830 | 731911 | 81 |
| 540 | 732394 | 732474 | 732555 | 732635 |  | 80 |
| 54 I | 733197 | 733278 | 733358 | 733438 | 733518 | 80 |
| 542 | 733999 | 734079 | 734160 | 734240 | 734320 | 80 |
| 543 | 734800 | 734880 | 734960 | 735040 | 735120 | 80 |
| 544 | 735599 | 735679 | 735759 | 735838 | 735918 | 80 |
| 545 | 736397 | 736476 | 736556 | 736635 | 736715 | 80 |
| 546 | 737193 | 737272 | 737352 | 737431 | 737511 . | 79 |
| 547 | 737987 | 738067 | 738146 | 738225 | 738305 | 79 |
| 548 | 738781 | 738860 | 738939 | 739018 | 739097 | 79 |
| 549 | 739572 | 739651 | 739731 | 739810 | 739889 | 79 |

For explanation see pp. 207-215

Log. 740. No. 549.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 500 | 699404 | 69949 I | 699578 | 699664 | 699751 | 87 |
| 501 | 700271 | 700358 | 700444 | 70053 I | 700617 | 87 |
| 502 | 701136 | 701222 | 701309 | 701395 | 701482 | 86 |
| 503 | 701999 | 702086 | 702172 | 702258 | 702344 | 86 |
| 504 | 702861 | 702947 | 703033 | 703119 | 703205 | 86 |
| 505 | 703721 | 703807 | 703893 | 703979 | 704065 | 86 |
| 506 | 704579 | 704665 | 70475 I | 704837 | 704922 | 86 |
| 507 | 705436 | 705522 | 705607 | 705693 | 705778 | 86 |
| 508 | 706291 | 706376 | 706462 | 706547 | 706632 | 85 |
| 509 | 707144 | 707229 | 707315 | 707400 | 707485 | 85 |
| 510 | 707996 | 708081 | 708166 | 708251 | 708336 | 85 |
| 511 | 708846 | 708931 | 709015 | 709100 | 709185 | 85 |
| 512 | 709694 | 709779 | 709863 | 709948 | 710033 | 85 |
| 513 | 710540 | 710625 | 710710 | 710794 | 710879 | 85 |
| 514 | 711385 | 711470 | 711554 | 711639 | 711723 | 84 |
| 515 | 712229 | 712313 | 712397 | 712481 | 712566 | 84 |
| 516 | 713070 | 71354 | 713238 | 713323 | 713407 | 84 |
| 517 | 713910 | 713994 | 714078 | 714162 | 714246 | 84 |
| 518 | 714749 | 714833 | 714916 | 715000 | 715084 | 84 |
| 519 | 715586 | 715669 | 715753 | 715836 | 715920 | 84 |
| 520 | 716421 | 716504 | 716588 | 716671 | 716754 | 83 |
| 521 | 717254 | 717338 | 717421 | 717504 | 717587 | 83 |
| 522 | 718086 | 718169 | 718253 | 718336 | 718419 | 83 |
| 523 | 718917 | 719000 | 719083 | 719165 | 719248 | 83 |
| 524 | 719745 | 719828 | 719911 | 719994 | 720077 | 83 |
| 525. | 720573 | 720655 | 720738 | 720821 | 720903 | 83 |
| 526 | 721398 | 72148 I | 721563 | 721646 | 721728 | 83 |
| 527 | 722222 | 722305 | 722387 | 722469 | 722552 | 82 |
| 528 | 723045 | 723127 | 723209 | 723291 | 723374 | 82 |
| 529 | 723866 | 723948 | 724030 | 724112 | 724194 | 82 |
| 530 | 724685 | 724767 | 724849 | 724931 | 725013 | 82 |
| 531 | 725503 | 725585 | 725667 | 725748 | 725830 | 82 |
| 532 | 726320 | 726401 | 726483 | 726564 | 726646 | 82 |
| 533 | 727134 | 727216 | 727297 | 727379 | 727460 | 81 |
| 534 | 727948 | 728029 | 728110 | 728191 | 728273 | 81 |
| 535 | 728759 | 728841 | 728922 | 729003 | 729084 | 81 |
| 536 | 729570 | 729651 | 729732 | 729813 | 729893 | 81 |
| 537 | 730378 | 730459 | 730540 | 73062 I | 730702 | 8 I |
| 538 | 731186 | 731266 | 731347 | 731428 | 731508 | 8 I |
| 539 | 731991 | 732072 | 732152 | 732233 | 732313 | 8 I |
| 540 | 732796 | 732876 | 732956 | 733037 | 733117 | 80 |
| 541 | 733598 | 733679 | 733759 | 733839 | 733919 | 80 |
| 542 | 734400 | 734480 | 734560 | 734640 | 734720 | 80 |
| 543 | 735200 | 735279 | 735359 | 735439 | 735519 | 80 |
| 544 | 735998 | 736078 | 736157 | 736237 | 736317 | 80 |
|  | 736795 | 736874 | 736954 | 737034 | 737113 | 80 |
| 546 | 737590 | 737670 | 737749 | 737829 | 737908 | 79 |
| 547 | 738384 | 738463 | 738543 | 738622 | 738701 | 79 |
| 548 | 739177 | 739256 | 739335 | 739414 | 739493 | 79 |
| 549 | 739968 | 740047 | 740126 | 740205 | 740284 | 79 |

## Log. 740. No. 550.

| No. | 0 | 1 | 2 | 3 | 4 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 550 | 740363 | 740442 | 740521 | 740600 | 740678 | 79 |
| 551 | 741152 | 741230 | 741309 | 741388 | 741467 | 79 |
| 552 | 741939 | 742018 | 742096 | 742175 | 742254 | 79 |
| 553 | 742725 | 742804 | 742882 | 742961 | 743039 | 78 |
| 554 | 743510 | 743588 | 743667 | 743745 | 743823 | 78 |
| 555 | 744293 | 744371 | 744449 | 744528 | 744606 | 78 |
| 556 | 745075 | 745153 | 74523 I | 745309 | 745387 | 78 |
| 557 | 745855 | 745933 | 746011 | 746089 | 746167 | 78 |
| 558 | 746634 | 746712 | 746790 | 746868 | 746945 | 78 |
| 559 | 747412 | 747489 | 747567 | 747645 | 747722 | 78 |
| 560 | 748188 | 748266 | 748343 | 748421 | 748498 | 77 |
| 561 | 748963 | 749040 | 749118 | 749195 | 749272 | 77 |
| 562 | 749736 | 749814 | 749891 | 749968 | 750045 | 77 |
| 563 | 750508 | 750586 | 750663 | 750740 | 750817 | 77 |
| 564 | 751279 | 751356 | 751433 | 751510 | 751587 | 77 |
| 565 | 752048 | 752125 | 752202 | 752279 | 752356 | 77 |
| 566 | 752816 | 752893 | 752970 | 753047 | 753123 | 77 |
| 567 | 753583 | 753660 | 753736 | 753813 | 753889 | 77 |
| 568 | 754348 | 754425 | 754501 | 754578 | 754654 | 76 |
| 569 | 755112 | 755189 | 755265 | 755341 | 755417 | 76 |
| 570 | 755875 | 755951 | 756027 | 756103 | 756180 | 76 |
| 571 | 756636 | 756712 | 756788 | 756864 | 756940 | 76 |
| 572 | 757396 | 757472 | 757548 | 757624 | 757700 | 76 |
| 573 | 758155 | 758230 | 758306 | 758382 | 758458 | 76 |
| 574 | 758912 | 758988 | 759063 | 759139 | 759214 | 76 |
| 575 | 759668 | 759743 | 759819 | 759894 | 759970 | 75 |
| 576 | 760422 | 760498 | 760573 | 760649 | 760724 | 75 |
| 577 | 761176 | 761251 | 761326 | 761402 | 761477 | 75 |
| 578 | 761928 | 762003 | 762078 | 762153 | 762228 | 75 |
| 579 | 762679 | 762754 | 762829 | 762904 | 762978 | 75 |
| 580 | 763428 | 763503 | 763578 | 763653 | 763727 | 75 |
| 581 | 764176 | 764251 | 764326 | 764400 | 764475 | 75 |
| 582 | 764923 | 764998 | 765072 | 765147 | 765221 | 75 |
| 583 | 765669 | 765743 | 765818 | 765892 | 765966 | 74 |
| 584 | 766413 | 766487 | 766562 | 766636 | 766710 | 74 |
| 585 | 767156 | 767230 | 767304 | 767379 | 767453 | 74 |
| 586 | 767898 | 767972 | 768046 | 768120 | 768194 | 74 |
| 587 | 768638 | 768712 | 768786 | 768860 | 768934 | 74 |
| 588 | 769377 | 769451 | 769525 | 769599 | 769673 | 74 |
| 589 | 770115 | 770189 | 770263 | 770336 | 770410 | 74 |
| 590 | 770852 | 770926 | 770999 | 771073 | 771146 | 74 |
| 591 | 771587 | 771661 | 771734 | 771808 | 771881 | 73 |
| 592 | 772322 | 772395 | 772468 | 772542 | 772615 | 73 |
| 593 | 773055 | 773128 | 773201 | 773274 | 773348 | 73 |
| 594 | 773786 | 773860 | 773933 | 774006 | 774079 | 73 |
| 595 | 774517 | 774590 | 774663 | 774736 | 774809 | 73 |
| 596 | 775246 | 775319 | 775392 | 775465 | 775538 | 73 |
| 597 | 775974 | 776047 | 776120 | 776193 | 776265 | 73 |
| 598 | 776701 | 776774 | 776846 | 776919 | 776992 | 73 |
| 599 | 777427 | 777499 | 777572 | 777644 | 777717 | 72 |

For explanation see pp. 207-21 5

## Log. 778. No. 599.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 550 | 740757 | 740836 | 740915 | 740994 | 741073 | 79 |
| 551 | 741546 | 741624 | 741703 | 741782 | 741860 | 79 |
| 552 | 742332 | 742411 | 742489 | 742568 | 742647 | 79 |
| 553 | 743 II8 | 743196 | 743275 | 743353 | 74343 I | 78 |
| 554 | 743902 | 743980 | 744058 | 744156 | 744215 | 78 |
| 555 | 744684 | 744762 | 744840 | 744919 | 744997 | 78 |
| 556 | 745465 | 745543 | 745621 | 745699 | 745777 | 78 |
| 557 | 746245 | 746323 | 746401 | 746479 | 746556 | 78 |
| 558 | 747023 | 7471101 | 747179 | 747256 | 747334 | 78 |
| 559 | 747800 | 747878 | 747955 | 748033 | 748 If | 78 |
| 560 | 748576 | 748653 | 748731 | 748808 | 748885 | 77 |
| 561 | 749350 | 749427 | 749504 | 749582 | 749659 | 77 |
| 562 | 750123 | 750200 | 750277 | 750354 | 750431 | 77 |
| 563 | 750894 | 750971 | 751048 | 751125 | 751202 | 77 |
| 564 | 751664 | 751741 | 751818 | 751895 | 751972 | 77 |
| 565 | 752433 | 752509 | 752586 | 752663 | 752740 | 77 |
| 566 | 753200 | 753277 | 753353 | 753430 | 753506 | 77 |
| 567 | 753966 | 754042 | 754119 | 754195 | 754272 | 77 |
| 568 | 754730 | 754807 | 754883 | 754960 | 755036 | 76 |
| 569 | 755494 | 755570 | 755646 | 755722 | 755799 | 76 |
| 570 | 756256 | 756332 | 756408 | 756484 | 756560 | 76 |
| 571 | 757016 | 757092 | 757168 | 757244 | 757320 | 76 |
| 572 | 757775 | 757851 | 757927 | 758003 | 758079 | 76 |
| 573 | 758533 | 758609 | 758685 | 758761 | 758836 | 76 |
| 574 | 759290 | 759366 | 759441 | 759517 | 759592 | 76 |
| 575 | 760045 | 760121 | 760196 | 760272 | 760347 | 75 |
| 576 | 760799 | 760875 | 760950 | 761025 | 76 IIOI | 75 |
| 577 | 761552 | 761627 | 761702 | 761778 | 76 I 853 | 75 |
| 578 | 762303 | 762378 | 762453 | 762529 | 762604 | 75 |
| 579 | 763053 | 763128 | 763203 | 763278 | 763353 | 75 |
| 580 | 763802 | 763877 | 763952 | 764027 | 764 raI | 75 |
| 58 I | 764550 | 764624 | 764699 | 764774 | 764848 | 75 |
| 582 | 765296 | 765370 | 765445 | 765520 | 765594 | 75 |
| 583 | 766041 | 766115 | 766190 | 766264 | 766338 | 74 |
| 584 | 766785 | 766859 | 766933 | 767007 | 767082 | 74 |
| 585 | 767527 | 767601 | 767675 | 767749 | 767823 | 74 |
| 586 | 768268 | 768342 | 768415 | 768490 | 768564 | 74 |
| 587 | 769008 | 769082 | 769156 | 769230 | 769303 | 74 |
| 588 | 769746 | 769820 | 769894 | 769968 | 770042 | 74 |
| 589 | 770484 | 770557 | 770631 | 770705 | 770778 | 74 |
| 590 | 771220 | 771293 | 771367 | 771440 | 771514 | 74 |
| 591 | 771955 | 772028 | 772102 | 772175 | 772248 | 73 |
| 592 | 772688 | 772762 | 772835 | 772908 | 772981 | 73 |
| 593 | 773421 | 773494 | 773567 | 773640 | 773713 | 73 |
| 594 | 774152 | 774225 | 774298 | 774371 | 774444 | 73 |
|  | 774882 | 774955 | 775028 | 775100 | 775173 | 73 |
| 596 | 775610 | 775683 | 775756 | 775829 | 775902 | 73 |
| 597 | $77633^{8}$ | 776411 | 776483 | 776556 | 776629 | 73 |
| 598 | 777064 | 777137 | 777209 | 777282 | 777354 | 73 |
| 599 | 777789 | 777862 | 777934 | 778006 | 778079 | 72 |

## Log. 778. No. 600.

| No. | 0 | 1 | 2 | 3 | 4 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 600 | 778151 | 778224 | 778296 | 778368 | 778441 | 72 |
| 601 | 778874 | 778947 | 779019 | 779091 | 779163 | 72 |
| 602 | 779596 | 779669 | 779741 | 779813 | 779885 | 72 |
| 603 | 780317 | 780389 | 780461 | 780533 | 780605 | 72 |
| 604 | 781037 | 781109 | 781181 | 781253 | 781324 | 72 |
| 605 | 781755 | 781827 | 781899 | 781971 | 782042 | 72 |
| 606 | 782473 | 782544 | 782616 | 782688 | 782759 | 72 |
| 607 | 783189 | 783260 | 783332 | 783403 | 783475 | 71 |
| 608 | 783904 | 783975 | 784046 | 784118 | 784189 | 71 |
| 609 | 784517 | 784689 | 784760 | 784831 | 784902 | 71 |
| 6ro | 785330 | 785401 | 785472 | 785543 | 785615 | 71 |
| 611 | 786041 | 786112 | 786183 | 786254 | 786325 | 71 |
| 612 | 786751 | 786822 | 786893 | 786964 | 787035 | 71 |
| 613 | 787460 | 78753 I | 787602 | 787673 | 787744 | 71 |
| 614 | 788168 | 788239 | 788310 | 788381 | 788451 | 71 |
| 615 | 788875 | 788946 | 789016 | 789087 | 789157 | 71 |
| 616 | 789581 | 789651 | 789722 | 789792 | 789863 | 70 |
| 617 | 790285 | 790356 | 790426 | 790496 | 790567 | 70 |
| 618 | 790988 | 791059 | 791129 | 791199 | 791269 | 70 |
| 619 | 791691 | 791761 | 791831 | 791901 | 791971 | 70 |
| 620 | 792392 | 792462 | 792532 | 792602 | 792672 | 70 |
| 621 | 793092 | 793162 | 793231 | 793301 | 793371 | 70 |
| 622 | 793790 | 793860 | 793930 | 794000 | 794070 | 70 |
| 623 | 794488 | 794558 | 794627 | 794697 | 794767 | 70 |
| 624 | 795185 | 795254 | 795324 | 795393 | 795463 | 70 |
| 625 | 795880 | 795949 | 796019 | 796088 | 796158 | 69 |
| 626 | 796574 | 796644 | 796713 | 796782 | 796852 | 69 |
| 627 | 797268 | 797337 | 797406 | 797475 | 797545 | 69 |
| 628 | 797960 | 798029 | 798098 | 798167 | 798236 | 69 |
| 629 | 798651 | 798720 | 798789 | 798858 | 798927 | 69 |
| 630 | 799341 | 799409 | 799478 | 799547 | 799616 | 69 |
| 63 I | 800029 | 800098 | 800167 | 800236 | 800305 | 69 |
| 632 | 800717 | 800786 | 800854 | 800923 | 800992 | 69 |
| 633 | 801404 | 801472 | 801541 | 801609 | 801678 | 69 |
| 634 | 802089 | 802158 | 802226 | 802295 | 802363 | 69 |
| 635 | 802774 | 802842 | 802910 | 802979 | 803047 | 68 |
| 636 | 803457 | 803525 | 803594 | 803662 | 803730 | 68 |
| 637 | 804139 | 804208 | 804276 | 804344 | 804412 | 68 |
| 638 | 80482 I | 804889 | 804957 | 805025 | 805093 | 68 |
| 639 | 805501 | 805569 | 805637 | 805705 | 805773 | 68 |
| 640 | 806180 | 806248 | 806316 | 806384 | 806451 | 68 |
| 641 | 806858 | 806926 | 806994 | 80706I | 807129 | 68 |
| 642 | 807535 | 807603 | 807670 | 807738 | 807806 | 68 |
| 643 | 808211 | 808279 | 808346 | 808414 | 808481 | 67 |
| 644 | 808886 | 808953 | 80902I | 809088 | 809156 | 67 |
|  | 809560 | 809627 | 809694 | 809762 | 809829 | 67 |
| 646 | 810233 | 810300 | 810367 | 8 810434 | 810501 | 67 |
| 647 | 810904 | 810971 | 811039 | 8 811106 | 811173 | 67 |
| 648 | 811575 | $8 \mathrm{8r} 1642$ | 811709 | 811776 | 811843 | 67 |
| 649 | 812245 | 812312 | 812379 | 812445 | 812512 | 67 |

For explanation see pp. 207-215

## Log. 812. No. 649.

| No. | 5 | 6 | 7 | 8 | 9 | Diff |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 600 | 778513 | 778585 | 778658 | 778730 | 778802 | 72 |
| 601 | 779236 | 779308 | 779380 | 779452 | 779524 | 72 |
| 602 | 779957 | 780029 | 780101 | 780173 | 780245 | 72 |
| 603 | 780677 | 780749 | 780821 | 780893 | 780965 | 72 |
| 604 | 781396 | 781468 | 78 I 540 | 781612 | 781684 | 72 |
| 605 | 782114 | 782186 | 782258 | 782329 | 782401 | 72 |
| 606 | 782831 | 782902 | 782974 | 783046 | 783117 | 72 |
| 607 | 783546 | 783618 | 783689 | 783761 | 783832 | 71 |
| 608 | 784261 | 784332 | 784403 | 784475 | 784546 | 71 |
| 609 | 784974 | 785045 | 785116 | 785187 | 785259 | 71 |
| 610 | 785686 | 785757 | 785828 | 785899 | 785970 | 71 |
| 6ri | 786396 | 786467 | 786538 | 786609 | 786680 | 71 |
| 612 | 787106 | 787177 | 787248 | 787319 | 787390 | 7 I |
| 613 | 787815 | 787885 | 787956 | 788027 | 788098 | 71 |
| 614 | 788522 | 788593 | 788663 | 788734 | 788804 | 71 |
| 615 | 789228 | 789299 | 789369 | 789440 | 789510 | 71 |
| 616 | 789933 | 790004 | 790074 | 790144 | 790215 | 70 |
| 617 | 790637 | 790707 | 790778 | 790848 | 790918 | 70 |
| 618 | 791340 | 791410 | 791480 | 791550 | 791620 | 70 |
| 619 | 792041 | 792111 | 792181 | 792252 | 792322 | 70 |
| 620 | 792742 | 792812 | 792882 | 792952 | 793022 | 70 |
| 629 | 79344 I | 793511 | 79358 I | 793651 | 79372 I | 70 |
| 622 | 794139 | 794209 | 794279 | 794349 | 794418 | 70 |
| 623 | 794836 | 794906 | 794976 | 795045 | 795115 | 70 |
| 624 | 795532 | 795602 | 795672 | 795741 | 79581 | 70 |
| 625 | 796227 | 796297 | 796366 | 796436 | 796505 | 69 |
| 626 | 796921 | 796990 | 797060 | 797129 | 797198 | 69 |
| 627 | 797614 | 797683 | 797752 | 797821 | 797890 | 69 |
| 628 | 798305 | 798374 | 798443 | 798513 | 798582 | 69 |
| 629 | 798996 | 799065 | 799134 | 799203 | 799272 | 69 |
| 630 | 799685 | 799754 | 799823 | 799892 | 799961 | 69 |
| 631 | 800373 | 800442 | 80051 I | 800580 | 800648 | 69 |
| 632 | 801061 | 801129 | 801198 | 801266 | 801335 | 69 |
| 633 | 801747 | 801815 | 801884 | 801952 | 80202 I | 69 |
| 634 | 802432 | 802500 | 802568 | 802637 | 802705 | 69 |
| 635 | 803116 | 803184 | 803252 | 803321 | 803389 | 68 |
| 636 | 803798 | 803867 | 803935 | 804003 | 80407 I | 68 |
| 637 | 804480 | 804548 | 8046 r 6 | 804685 | 804753 | 68 |
| 638 | 805161 | 805229 | 805297 | 805365 | 805433 | 68 |
| 639 | 805841 | 805908 | 805976 | 806044 | 806112 | 68 |
| 640 | 806519 | 806587 | 806655 |  |  | 68 |
| $\mathrm{K}_{41}$ | 807197 | 807264 | 807332 | 807400 | 807467 | 68 |
| 642 | 807873 | 807941 | 808008 | 808076 | 808143 | 68 |
| 643 | 808549 | 808616 | 808684 | 808751 | 808818 | 67 |
| 644 | 809223 | 809290 | 809358 | 809425 | 809492 | 67 |
| 645 | 809896 | 809964 | 810031 | 810098 | $8 \mathrm{ro165}$ | 67 |
| 646 | 810569 | 8 I 0636 | 810703 | 810770 | $8 \mathrm{ro837}$ | 67 |
| 647 | 811240 | 811307 | 811374 | 8 Cl 1441 | 8 CII 08 | 67 |
| 648 | 811910 | 811977 | 812044 | 812111 | 812178 | 67 |
| 649 | 812579 | 812646 | 812713 | 812780 | 812847 | 67 |

## Log. 812. No. 650.

| No. | 0 | 1 | 2 | 3 | 4 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 650 | 812913 | 812980 | 813047 | 813114 | 8 I 318 I | 67 |
| 651 | 813581 | ${ }_{81} 13648$ | 813714 | 813781 | 81 3848 | 67 |
| 652 | 814248 | 814314 | 8 I 438 I | 814447 | 8 I 4514 | 67 |
| 653 | 814913 | 814980 | 815046 | 815113 | 815179 | 66 |
| 654 | 815578 | 815644 | 815711 | 815777 | 815843 | 66 |
| 655 | 816241 | 816308 | 816374 | 816440 | 816506 | 66 |
| 656 | 816904 | 816970 | 817036 | 817102 | 817169 | 66 |
| 657 | 817565 | 817631 | 817698 | 817764 | 817830 | 66 |
| 658 | 818226 | 818292 | 818358 | 818424 | 818490 | 66 |
| 659 | 818885 | 818951 | 819017 | 819083 | 819149 | 66 |
| 660 | 819544 | 819610 | 819676 | 819741 | 819807 | 66 |
| 66r | 820201 | 820267 | 820333 | 820399 | 820464 | 66 |
| 662 | 820858 | 820924 | 820989 | 821055 | 821120 | 66 |
| 663 | 821514 | 821579 | 821645 | 821710 | 821775 | 65 |
| 664 | 822168 | 822233 | 822299 | 822364 | $82243{ }^{\circ}$ | 65 |
| 665 | 822822 | 822887 | 822952 | 823018 | 823083 | 65 |
| 666 | 823474 | 823539 | 823605 | 823670 | 823735 | 65 |
| 667 | 824126 | 82419 I | 824256 | 824321 | 824386 | 65 |
| 668 | 824776 | 824841 | 824906 | 824971 | 825036 | 65 |
| 669 | 825426 | 825491 | 825556 | 825621 | 825686 | 65 |
| 670 | 826075 | 826140 | 826204 | 826269 | 826334 | 65 |
| 67 r | 826723 | 826787 | 826852 | 826917 | 826981 | 65 |
| 672 | 827369 | 827434 | 827499 | 827563 | 827628 | 65 |
| 673 | 828015 | 828080 | 828144 | 828209 | 828273 | 64 |
| 674 | 828660 | 828724 | 828789 | 828853 | 828918 | 64 |
| 675 | 829304 | 829368 | 829432 | 829497 | 829561 | 64 |
| 676 | 829947 | 830011 | 830075 | 830139 | 830204 | 64 |
| 677 | 830589 | 830653 | 830717 | 830781 | 830845 | 64 |
| 678 | 831230 | 831294 | 831358 | 831422 | 831486 | 64 |
| 679 | 831870 | 831934 | 831998 | 832062 | 832126 | 64 |
| 680 | 832509 | 832573 | 832637 | 832700 | 832764 | 64 |
| 681 | 833147 | 8332 II | 833275 | 833338 | 833402 | 64 |
| 682 | 833784 | 833848 | 833912 | 833975 | 834039 | 64 |
| 683 | 834421 | 834484 | 834548 | 83461 I | 834675 | 64 |
| 684 | 835056 | 835120 | 835183 | 835247 | 835310 | 63 |
| 685 | 835691 | 835754 | 835817 | 835881 | 835944 |  |
| 686 | 836324 | 836387 | 836451 | 836514 | 836577 | 63 |
| 687 | 836957 | 837020 | 837083 | 837146 | 837210 | 63 |
| 688 | 837588 | 837652 | 837715 | 837778 | 83784 I | 63 |
| 689 | 838219 | 838282 | 838345 | 838408 | 838471 | 63 |
| 690 |  | 838912 | 838975 | 839038 | 839101 | 63 |
| 69 r | 839478 | 83954 I | 839604 | 839667 | 839729 | 63 |
| 692 | 840106 | 840169 | 840232 | 840294 | 840357 | 63 |
| 693 | 840733 | 840796 | 840859 | 84092 I | 840984 | 63 |
| 694 | 841359 | 841422 | 841485 | 841547 | 841610 | 63 |
| 695 | 841985 | 842047 | 842110 | 842172 | 842235 | 62 |
| 696 | 842609 | 842672 | 842734 | 842796 | 842859 | 62 |
| 697 | 843233 | 843295 | 843357 | 843420 | 843482 | 62 |
| 698 | 843855 | 843918 | 843980 | 844042 | 844104 | 62 |
| 699 | 844477 | 844539 | 844601 | 844664 | 844726 | 62 |

For explanation see pp. 207-215

Log. 845. No. 699.

| No. | 5 | 6 | 7 | 8 | 9 | Diff, |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 650 | 813247 | 813314 | 8 I 3381 | 813448 | 8 8 3514 | 67 |
| 651 | 813914 | 813981 | 814048 | 814114 | 8 I 418 I | 67 |
| 652 | 814581 | 814647 | 814714 | 814780 | 814847 | 67 |
| 653 | 815246 | 815312 | 815378 | 815445 | -815511 | 66 |
| 654 | 815910 | 815976 | 816042 | 816109 | 816175 | 66 |
| 655 | 816573 | 816639 | 816705 | 816771 | 816838 | 66 |
| 656 | 817235 | 817301 | 817367 | 817433 | 817499 | 66 |
| 657 | 817896 | 817962 | 8 8 8028 | 818094 | 818160 | 66 |
| 658 | 818556 | 818622 | 8 I 8688 | 818754 | 818820 | 66 |
| 659 | 819215 | 819281 | 819346 | 819412 | 819478 | 66 |
| 660 | 819873 | 819939 | 820004 | 820070 | 820136 | 66 |
| 66 I | 820530 | 820595 | 82066I | 820727 | 820792 | 66 |
| 662 | 821186 | 821251 | 821317 | 821382 | 821448 | 66 |
| 663 | 821841 | 821906 | 821972 | 822037 | 822103 | 65 |
| 664 | 822495 | 822560 | 822626 | 822691 | 822756 | 65 |
| 665 | 823148 | 823213 | 823279 | 823344 | 823409 | 65 |
| 666 | 823800 | 823865 | 823930 | 823996 | 824061 | 65 |
| 667 | 824451 | 824516 | 824581 | 824646 | 824711 | 65 |
| 668 | 825101 | 825166 | 825231 | 825296 | 825361 | 65 |
| 669 | 825751 | 825815 | 825880 | 825945 | 826010 | 65 |
| 670 | 826399 | 826464 | 826528 | 826593 | 826658 | 65 |
| 671 | 827046 | 827111 | 827175 | 827240 | 827305 | 65 |
| 672 | 827692 | 827757 | 82782 I | 827886 | 827951 | 65 |
| 673 | 828338 | 828402 | 828467 | 828531 | 828595 | 64 |
| 674 | 828982 | 829046 | 829111 | 829175 | 829239 | 64 |
| 675 | 829625 | 829690 | 829754 | 829818 | 829882 | 64 |
| 676 | 830268 | 830332 | 830396 | 830460 | 830525 | 64 |
| 677 | 830909 | 830973 | 831037 | 831102 | 831166 | 64 |
| 678 | 831550 | 831614 | 831678 | 831742 | 831806 | 64 |
| 679 | 832189 | 832253 | 832317 | 832381 | 832445 | 64 |
| 680 | 832828 | 832892 | 832956 | 833020 | 833083 | 64 |
| 681 | 833466 | 833530 | 833593 | 833657 | 83372 I | 64 |
| 682 | 834103 | 834166 | 834230 | 834294 | 834357 | 64 |
| 683 | 834739 | 834802 | 834866 | 834929 | 834993 | 64 |
| 684 | 835373 | 835437 | 835500 | 835564 | 835627 | 63 |
| 685 | 836007 | 836071 |  |  |  |  |
| 686 | 836641 | 836704 | 836767 | 836830 | 836894 | 63 |
| 687 | 837273 | 837336 | 837399 | 837462 | 837525 | 63 |
| 688 | 837904 | 837967 | 838030 | 838093 | 838156 83886 | 63 |
| 689 | 838534 | 838597 | 838660 | 838723 | 838786 | 63 |
| 690 | 839164 | 839227 | 839289 | 839352 | 839415 | 63 |
| 691 | 839792 | 839855 | 839918 | 839981 | 840043 | 63 |
| 692 | 840420 | 840482 | 840545 | 840608 | 840671 | 63 |
| 693 | 841046 | 841109 | 841172 | 841234 | 841297 | 63 |
| 694 | 841672 | 841735 | 841797 | 841860 | 841922 | 63 |
|  | 842297 | 842360 | 842422 | 842484 | 842547 | 62 |
| 696 | 842921 | 842983 | 843046 | 843108 | 843170 | 62 |
| 697 | 843544 | 843606 | 843669 | 843731 | 843793 | 62 |
| 698 | 844166 | 844229 | 844291 | 844353 | 844415 | 62 |
| 699 | 844788 | 844850 | 844912 | 844974 | 845036 | 62 |

Log. 845. No. 700.

| No. | 0 | 1 | 2 | 3 | 4 | Diff |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 700 | 845098 | 845160 | 845222 | 845284 | 845346 | 62 |
| 701 | 845778 | 845780 | $8{ }^{845842}$ | 845904 | 845966 846585 | 62 |
| 702 703 | 846337 846955 8 | 846399 847017 | 846461 847079 | 846523 847141 | 846585 847202 | 62 62 |
| 704 | 847573 | 847634 | 847696 | 847758 | 847819 | 62 |
| 705 | 848189 | 848251 | 848312 | 848374 | 848435 | 62 |
| 706 | 848805 | 848866 | 848928 | 848989 | 849051 | 61 |
| 707 | 849419 | 84948 I | 849542 | 849604 | 849665 | ${ }^{61}$ |
| 708 | 850033 | 850095 | 850156 | 850217 | 850279 | 61 |
| 709 | 850646 | 850707 | 850769 | 850830 | 850891 | 6I |
| 710 | 851258 | 851320 | 851381 | 851442 | 851503 | 61 |
| 711 | 851870 | 851931 | 851992 | 852053 | 852114 | 61 |
| 712 | 852480 | 852541 | 852602 | 852663 | 852724 | 61 |
| 713 | 853090 | 853150 | 853211 | 853272 | 853333 | 61 |
| 714 | 853698 | 853759 | 853820 | 85388 I | 853941 | 61 |
| 715 | 854306 | 854367 | 854428 | 854488 | 854549 | 61 |
| ${ }_{7}^{76}$ | 854913 | 854974 | 855034 | 855095 | 855156 | 61 |
| 717 | 855519 | 855580 | 855640 | 855701 | 855761 | 61 |
| 718 | 856124 | 856185 | 856245 | 856306 | 856366 | 60 |
| 719 | 856729 | 856789 | 856850 | 856910 | 856970 | 60 |
| 720 | 857332 | 857393 | 857453 | 857513 | 857574 | 60 |
| 725 | 857935 | 857995 | 858056 | 858116 | 858176 | 60 |
| 722 | 858537 | 858597 | 858657 | 858718 | 858778 | 60 |
| 723 | 859138 | 859198 | 859258 | 859318 | 859379 | 60 |
| 724 | 859739 | 859799 | 859859 | 859918 | 859978 | 60 |
| 725 | 860338 | 860398 | 860458 | 860518 | 860578 | 60 |
| 726 | 860937 | 860996 | 861056 | 86 HII 6 | 861176 | 60 |
| 777 | ${ }_{861534}$ | 861594 | 861654 | 861714 | 861773 | 60 |
| 728 | 862131 | 86219 I | 862251 | 862310 | 862370 | 60 |
| 729 | 862728 | 862787 | 862847 | 862906 | 862966 | 60 |
| 730 | 863323 | 863382 | 863442 | 863501 | 863561 | 59 |
| 7331 | 863917 | 863977 | 864036 | 864096 | 86455 | 59 |
| 732 | 864511 | 864570 | 864630 | 864689 | 864748 | 59 |
| 733 | 865104 | 865163 | 865222 | 865282 | 865341 | 59 |
| 734 | 865696 | 865755 | 865814 | 865874 | 865933 | 59 |
| 735 | ${ }_{866287}$ | 866346 | 866405 | 866465 | 866524 | 59 |
| 736 | 866878 | 866937 | 866996 | 867055 | 867114 | 59 |
| 737 | 867467 868056 | ${ }^{867526}$ | 867585 | 867644 | ${ }^{867703}$ | 59 |
| 738 |  |  |  | ${ }_{868821} 8683$ | ${ }_{868292}$ | 59 |
| 739 | 868644 | 868703 | 868762 | 868821 | 868879 | 59 |
| 740 | 869232 | 869290 | ${ }_{869349}$ | 869408 | 869466 | 59 |
|  | 869818 870404 8 | ${ }_{8}^{869877}{ }^{8}$ | 869935 870521 8 | 869994 870579 8 | 870053 | 59 |
| 742 743 | 870494 870989 | 870462 <br> 871047 | 870521 871106 | 870579 871164 | 870638 871223 | ${ }_{58}^{58}$ |
| 744 | 871573 | 871631 | 871690 | 871748 | 871806 | 58 |
| 745 | 872156 | 872215 | 872273 | 872331 | 872389 | 58 |
| 746 | 872739 | 872797 | 872855 | 872913 | 872972 | 58 |
| 747 | 873321 873902 | 873379 | 873437 | 873495 | 873553 | 58 |
| 748 | 873902 87448 | 873960 87540 | 874018 874598 | 874076 | 874134 | 58 |
| 749 | 874482 | 874540 | 874598 | 874656 | 874714 | 58 |

For explanation see pp. 207-215

Log. 875. No. 749.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 700 | 845408 | 845470 | 845532 | 845594 | 845656 | 62 |
| 701 | 846028 | 846090 | 846151 | 846213 | 846275 | 62 |
| 702 | 846646 | 846708 | 846770 | 846832 | 846894 | 62 |
| 703 | 847264 | 847326 | 847388 | 847449 | 847511 | 62 |
| 704 | 84788I | 847943 | 848004 | 848066 | 848128 | 62 |
| 705 | 848497 | 848559 | 848620 | 848682 | 848743 | 62 |
| 706 | 849112 | 849174 | 849235 | 849297 | 849358 | 61 |
| 707 | 849726 | 849788 | 849849 | 84991 I | 849972 | 61 |
| 708 | 850340 | 850401 | 850462 | 850524 | 850585 | 61 |
| 709 | 850952 | 851014 | 851075 | 851136 | 851197 | 61 |
| 710 | 851564 | 851625 | 851686 | 851747 | 851809 | 61 |
| 711 | 852175 | 852236 | 852297 | 852358 | 852419 | 61 |
| 712 | 852785 | 852846 | 852907 | 852968 | 853029 | 6 I |
| 713 | 853394 | 853455 | 853516 | 853577 | 853637 | 61 |
| 714 | 854002 | 854063 | 854124 | 854185 | 854245 | 61 |
| 715 | 854610 | 854670 | 854731 | 854792 | 854852 | 61 |
| 716 | 855216 | 855277 | 855337 | 855398 | 855459 | 61 |
| 717 | 855822 | 855882 | 855943 | 856003 | 856064 | 61 |
| 718 | 856427 | 856487 | 856548 | 856608 | 856668 | 60 |
| 719 | 85703 I | 857091 | 857152 | 857212 | 857272 | 60 |
| 720 | 857634 | 857694 | 857755 | 857815 | 857875 | 60 |
| 721 | 858336 | 858297 | 858357 | 858417 | 858477 | 60 |
| 722 | 858838 | 858898 | 858958 | 859018 | 859078 | 60 |
| 723 | 859439 | 859499 | 859559 | 859619 | 859679 | 60 |
| 724 | 860038 | 860098 | 860158 | 860218 | 860278 | 60 |
| 725 | 860637 | 860697 | 860757 | 860817 | 860877 | 60 |
| 726 | 861236 | 861295 | 861355 | 861415 | 861475 | 60 |
| 727 | 861833 | 861893 | 861952 | 862012 | 862072 | 60 |
| 728 | 862430 | 862489 | 862549 | 862608 | 862668 | 60 |
| 729 | 863025 | 863085 | 863144 | 863204 | 863263 | 60 |
| 730 | 863620 | 863680 | 863739 | 863799 | 863858 | 59 |
| 731 | 864214 | 864274 | 864333 | 864392 | 864452 | 59 |
| 732 | 864808 | 864867 | 864926 | 864985 | 865045 | 59 |
| 733 | 865400 | 865459 | 865519 | 865578 | 865637 | 59 |
| 734 | 865992 | 866051 | 866110 | 866169 | 866228 | 59 |
| 735 | 866583 | 866642 | 866701 | 866760 | 866819 | 59 |
| 736 | 867173 | 867232 | 867291 | 867350 | 867409 | 59 |
| 737 | 867762 | 86782 I | 867880 | 867939 | 867998 | 59 |
| 738 | 868350 | 868409 | 868468 | 868527 | 868586 | 59 |
| 739 | 868938 | 868997 | 869056 | 869114 | 869173 | 59 |
| 740 | 869525 | 869584 | 869642 | 869701 | 869760 | 59 |
| 741 | 870111 | 870170 | 870228 | 870287 | 870345 | 59 |
| 742 | 870696 | 870755 | 870813 | 870872 | 870930 | 58 |
| 743 | 871281 | 871339 | 871398 | 871456 | 871515 | 58 |
| 744 | 871865 | 871923 | 871981 | 872040 | 872098 | 58 |
|  |  | 872506 | 872564 | 872622 | 872681 | 58 |
| 746 | 873030 | 873088 | 873146 | 873204 | 873262 | 58 |
| 747 | 873611 | 873669 | 873727 | 873785 | 873844 | 58 |
| 748 | 874192 | 874250 | 874308 | 874366 | 874424 | 58 |
| 749 | 874772 | 874830 | 874888 | 874945 | 875003 | 58 |

Log. 875. No. 750.

| No. | 0 | 1 | 2 | 3 | 4 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 750 | 875061 | 875119. | 875177 | 875235 | 875293 | 58 |
| 751 | 875640 | 875698 | 875756 | 875813 | 87587 I | 58 |
| 752 | 876218 | 876276 | 876333 | 876391 | 876449 | 58 |
| 753 | 876795 | 876853 | 876910 | 876968 | 877026 | 58 |
| 754 | 87737 I | 877429 | 877487 | 877544 | 877602 | 58 |
| 755 | 877947 | 878004 | 878062 | 878119 | 878177 | 57 |
| 756 | 878522 | 878579 | 878637 | 878694 | 878752 | 57 |
| 757 | 879096 | 879153 | 879211 | 879268 | 879325 | 57 |
| 758 | 879669 | 879726 | 879784 | 879841 | 879898 | 57 |
| 759 | 880242 | 880299 | 880356 | 880413 | 880471 | 57 |
| 760 | 880814 | 880871 | 880928 | 880985 | 881042 | 57 |
| 761 | 881385 | 881442 | 881499 | 881556 | 881613 | 57 |
| 762 | 881955 | 882012 | 882069 | 882126 | 882183 | 57 |
| 763 | 882525 | 882581 | 882638 | 882695 | 882752 | 57 |
| 764 | 883093 | 883150 | 883207 | 883264 | 88332 I | 57 |
| 765 | 883661 | 883718 | 883775 | 883832 | 883888 | 57 |
| 766 | 884229 | 884285 | 884342 | 884399 | 884455 | 57 |
| 767 | 884795 | 884852 | 884909 | 884965 | 885022 | 57 |
| 768 | 885361 | $8854{ }^{18}$ | 885474 | 885531 | 885587 | 57 |
| 769 | 885926 | 885983 | 886039 | 886096 | 886152 | 56 |
| 770 | 886491 | 886547 | 886604 | 886660 | 886716 | 56 |
| 771 | 887054 | 887 III | 887167 | 887223 | 887280 | 56 |
| 772 | 887617 | 887674 | 887730 | 887786 | 887842 | 56 |
| 773 | 888179 | 888236 | 888292 | 888348 | 888404 | 56 |
| 774 | 888741 | 888797 | 888853 | 888909 | 888965 | 56 |
|  | 889302 | 889358 | 889414 | 889470 | 889526 | 56 |
| 776 | 889862 | 889918 | 889974 | 890030 | 890086 | 56 |
| 777 | 890421 | 890477 | 890533 | 890589 | 890645 | 56 |
| 778 | 890980 | 891035 | 891091 | 891147 | 891203 | 56 |
| 779 | 891537 | 891593 | 891649 | 891705 | 891760 | 56 |
| 780 | 892095 | 892150 | 892206 | 892262 | 892317 | 56 |
| 781 | 892651 | 892707 | 892762 | 892818 | 892873 | 56 |
| 782 | 893207 | 893262 | 893318 | 893373 | 893429 | 56 |
| 783 | 893762 | 893817 | 893873 | 893928 | 893984 | 55 |
| 784 | 894316 | 89437 I | 894427 | 894482 | 894538 | 55 |
| 785 | 894870 | 894925 | 894980 | 895036 | 895091 | 55 |
| 786 | 895423 | 895478 | 895533 | 895588 | 895644 | 55 |
| 787 | 895975 | 896030 | 896085 | 896140 | 896195 | 55 |
| 788 | 896526 | 896581 | 896636 | 896692 | 896747 | 55 |
| 789 | 897077 | 897132 | 897187 | 897242 | 897297 | 55 |
| 790 | 897627 | 897682 | 897737 | 897792 |  | 55 |
| 791 | 898176 | 898231 | 898886 | 89834 I | 898396 | 55 |
| 792 | 898725 | 898780 | 898835 | 898890 | 898944 | 55 |
| 793 | 899273 | 899328 | 899383 | 899437 | 899492 | 55 |
| 794 | 899821 | 899875 | 899930 | 899985 | 900039 | 55 |
| 795 | 900367 | 900422 | 900476 | 900531 | 900586 | 55 |
| 796 | 900913 | 900968 | 901022 | 901077 | 901131 | 55 |
| 797 | 901458 | 901513 | 901567 | 901622 | 901676 | 54 |
| 798 | 902003 | 902057 | 902112 | 902166 | 902221 | 54 |
| 799 | 902547 | 902601 | 902655 | 902710 | 902764 | 54 |

For explanation see pp. 207-215

Log. 903. No. 799.

| No. | 5 | 6 | 7 | 8 | 9 | Dif. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 750 | 875351 | 875409 | 875466 | 875524 | 875582 | 58 |
| 755 | 875929 | 875987 | 876045 | 876102 | 876160 | 58 |
| 752 | 876507 | 876564 | 876622 | ${ }_{8}^{876680}$ | 876737 | 58 |
| 753 | 877083 877659 | 877141 | 877199 | 877256 | 877384 | 58 |
| 754 | 877659 | 877717 | 877774 | 877832 | 877889 | 58 |
| 755 | 878234 | 878292 | 878349 | 878407 | 878464 | 57 |
| 756 | 878809 | 878866 | 878924 | 878981 | 879039 | 57 |
| 757 | ${ }_{8}^{879383}$ | 889440 | 879497 | 879555 | 879612 | 57 |
| 758 | 879956 | 880013 | 880070 | 880127 | 880185 | 57 |
| 759 | 880528 | 880585 | 880642 | 880699 | 880756 | 57 |
| 760 | 881099 | 88ı156 | 881213 | 88 r 27 x | 881328 | 57 |
| 761 | 881670 | 881727 | 881784 | 881841 | 88.898 | 57 |
| 762 | 882240 | 882297 | 882354 | 882411 | 882468 | 57 |
| 763 | 882809 | 882866 | 882923 | 882980 | 883037 | 57 |
| 764 | 883377 | 883434 | 883491 | 883548 | 883605 | 57 |
| 765 | 883945 | 884002 | 884059 | 884115 | 884172 | 57 |
|  | 884512 | 884569 | 884625 | 884682 | 884739 | 57 |
| 767 | 885078 88544 | 885155 885700 | 885192 | 885248 | 885305 | 57 |
|  | 885644 | 885700 88626 | 885757 | ${ }^{885813}$ | 885870 | 57 |
| 769 | 886209 | 886265 | 88632 T | 886378 | 886434 | 56 |
| 770 | 886773 | 886829 | 886885 | 886942 | 886998 | 56 |
| 771 | 887336 | 887392 | ${ }^{887449}$ | 887505 | 887561 | 56 |
| 772 | 888898 | 887955 | 888051 | 888067 | 888123 | 56 |
| 773 | 888460 | 888516 | 888573 | 888629 | 888685 | 56 |
| 774 | 88902I | 889077 | 889134 | 889190 | 889246 | 56 |
| 775 | 889582 | 889638 | 889694 | 889750 | 889806 | 56 |
| 776 | 890141 | 890197 | 890253 | 890309 | 890365 | 56 |
| 777 | 890700 | 890756 | 890812 | 890868 | 890924 | 56 |
| 778 | 891259 | 891314 | 891378 | 891426 | 891482 | 56 |
| 779 | 891816 | 891872 | 891928 | 891983 | 892039 | 56 |
| 780 | 892373 | 892429 | 892484 | 892540 | 892595 | 56 |
| 781 | 892929 | 892985 | ${ }_{8} 83040$ | 893096 | 893551 | 56 |
| 788 | ${ }_{893484}$ | 893540 | ${ }_{893595}$ | 893651 | 893706 | 56 |
| 783 | 894039 | 894094 | 894150 | 894205 | 894261 | 55 |
| 784 | 894593 | 894648 | 894704 | 894759 | 894814 | 55 |
| 785 | 895146 | 895201 | 895257 | 895312 | 895367 | 55 |
| 786 | 895699 | 895754 | 895809 | 895864 | 895920 | 55 |
| 787 | 896251 | 896306 | 896361 | 896456 | 896471 | 55 |
| 788 | ${ }_{8}^{896802}$ | 896857 | 896912 | 896967 | 897022 | 55 |
| 789 | 897352 | 897407 | 897462 | 897517 | 897572 | 55 |
| 790 | 897902 | 897957 | 898012 | 898067 | 898122 | 55 |
| 795 | 898451 | 898506 | 898561 | 898615 | 898670 | 55 |
| 792 | 898999 | 899054 | 899109 | 899164 | 899218 | 55 |
| 793 | 899547 | 899602 | 899656 | 899711 | 899766 | 55 |
| 794 | 900094 | 900149 | 900203 | 900258 | 900312 | 55 |
| 795 | 900640 | 900695 | 900749 | 900804 | 900859 | 55 |
| 796 | 901186 | 901240 | 901295 | 901349 | 901404 | 55 |
| 797 | 901731 | 901785 | 901840 902384 | 901894 | 901948 | 54 |
| 798 | 902275 902818 | 902329 902873 | 902384 902927 | 902438 902981 | ${ }_{902492} 9036$ | 54 |
| 799 | 902818 | 902873 | 902927 | 902981 | 903036 | 54 |

Log. 903. No. 800.

| No. | 0 | 1 | 2 | 3 | 4 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 800 | 903090 | 903144 | 903199 | 903253 | 903307 | 54 |
| 801 | 903633 | 903687 | 903741 | 903795 | 903849 | 54 |
| 802 | 904174 | 904229 | 904283 | 904337 | 904391 | 54 |
| 803 | 904716 | 904770 | 904824 | 904878 | 904932 | 54 |
| 804 | 905256 | 905310 | 905364 | 905418 | 905472 | 54 |
| 805 | 905796 | 905850 | 905904 | 905958 | 906012 | 54 |
| 806 | 906335 | 906389 | 906443 | 906497 | 906551 | 54 |
| 807 | 906874 | 906927 | 906981 | 907035 | 907089 | 54 |
| 808 | 907411 | 907465 | 907519 | 907573 | 907626 | 54 |
| 809 | 907949 | 908002 | 908056 | 908110 | 908163 | 54 |
| 810 | 908485 | 908539 | 908592 | 908649 | 908699 | 54 |
| 8II | 909021 | 909074 | 909128 | 909181 | 909235 | 54 |
| 812 | 909556 | 909610 | 909663 | 909716 | 909770 | 53 |
| 813 | 910091 | 910144 | 910197 | 910251 | 910304 | 53 |
| 814 | 910624 | 910678 | 910731 | 910784 | 910838 | 53 |
| 815 | 911158 | 911211 | 911264 | 911317 | 911371 | 53 |
| 8 r 6 | 911690 | 911743 | 911797 | 911850 | 911903 | 53 |
| 817 | 912222 | 912275 | 912328 | 912381 | 912435 | 53 |
| 818 | 912753 | 912806 | 912859 | 912913 | 912966 | 53 |
| 819 | 913284 | 913337 | 913390 | 913443 | 913496 | 53 |
| 820 | 913814 | 913867 | 913920 | 913973 | 914026 | 53 |
| 821 | 914343 | 914396 | 914449 | 914502 | 914555 | 53 |
| 822 | 914872 | 914925 | 914977 | 915030 | 915083 | 53 |
| 823 | 915400 | 915453 | 915505 | 915558 | 915611 | 53 |
| 824 | 915927 | 915980 | 916033 | 916085 | 916138 | 53 |
| 825 | 916454 | 916507 | 916559 | 916612 | 916664 | 53 |
| 826 | 916980 | 917033 | 917085 | 917138 | 917190 | 53 |
| 827 | 917506 | 917558 | 917611 | 917663 | 917716 | 52 |
| 828 | 918030 | 918083 | 918135 | 918188 | 918240 | 52 |
| 829 | 918555 | 918607 | 918659 | 918712 | 918764 | 52 |
| 830 | 919078 | 919130 | 919183 | 919235 | 919287 | 52 |
| 831 | 919601 | 919653 | 919706 | 919758 | 919810 | 52 |
| 832 | 920123 | 920176 | 920228 | 920280 | 920332 | 52 |
| 833 | 920645 | 920697 | 920749 | 920801 | 920853 | 52 |
| 834 | 921166 | 921218 | 921270 | 921322 | 921374 | 52 |
| 835 | 921686 | 921738 | 921790 | 921842 | 921894 | 52 |
| 836 | 922206 | 922258 | 922310 | 922362 | 922414 | 52 |
| 837 | 922725 | 922777 | 922829 | 922881 | 922933 | 52 |
| 838 | 923244 | 923296 | 923348 | 923399 | 923451 | 52 |
| 839 | 923762 | 923814 | 923865 | 923917 | 923969 | 52 |
| 840 | 924279 | 924331 | 924383 | 924434 | 924486 | 52 |
| 841 | 924796 | 924848 | 924899 | 924951 | 925003 | 52 |
| 842 | 925312 | 925364 | 925415 | 925467 | 925518 | 52 |
| 843 | 925828 | 925879 | 92593 I | 925982 | 926034 | 51 |
| 844 | 926342 | 926394 | 926445 | 926497 | 926548 | 51 |
| 845 | 926857 | 926908 | 926959 | 927011 | 927062 | 51 |
| 846 | 927370 | 927422 | 927473 | 927524 | 927576 | 51 |
| 847 | 927883 | 927935 | 927986 | 928037 | 928088 | 51 |
| 848 | 928396 | 928447 | 928498 | 928549 | 928601 | 51 |
| 849 | 928908 | 928959 | 929010 | 929061 | 929112 | 51 |

For explanation see pp. 207-215

Log. 929. No. 849.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 800 | 903361 | 903416 | 903470 | 903524 | 903578 | 54 |
| 801 | 903904 | 903958 | 904012 | 904066 | 904120 | 54 |
| 802 | 904445 | 904499 | 904553 | 904607 | 904661 | 54 |
| 803 | 904986 | 905040 | 905094 | 905148 | 905202 | 54 |
| 804 | 905526 | 905580 | 905634 | 905688 | 905742 | 54 |
| 805 | 906066 | 906119 | 906173 | 906227 | 906281 | 54 |
| 806 | 906604 | 906658 | 906712 | 906766 | 906820 | 54 |
| 807 | 907143 | 907196 | 907250 | 907304 | 907358 | 54 |
| 808 | 907680 | 907734 | 907787 | 907841 | 907895 | 54 |
| 809 | 908217 | 908270 | 908324 | 908378 | 90843I | 54 |
| 810 | 908753 | 908807 | 908860 | 908914 | 908967 | 54 |
| 811 | 909289 | 909342 | 909396 | 909449 | 909503 | 54 |
| 812 | 909823 | 909877 | 909930 | 909984 | 910037 | 53 |
| 813 | 910358 | 9104II | 910464 | 910518 | 910571 | 53 |
| 814 | 910891 | 910944 | 910998 | 911051 | 911104 | 53 |
| 815 | 911424 | 911477 | 911530 | 911584 | 911637 | 53 |
| 816 | 911956 | 912009 | 912063 | 912116 | 912169 | 53 |
| 817 | 912488 | 912541 | 912594 | 912647 | 912700 | 53 |
| 818 | 913019 | 913072 | 913125 | 913178 | 913231 | 53 |
| 819 | 913549 | 913602 | 913655 | 913708 | 913761 | 53 |
| 820 | 914079 | 914132 | 914184 | 914237 | 914290 | 53 |
| 821 | 914608 | 914660 | 914713 | 914766 | 914819 | 53 |
| 822 | 915136 | 915189 | 915241 | 915294 | 915347 | 53 |
| 823 | 915664 | 915716 | 915769 | 915822 | 915875 | 53 |
| 824 | 916191 | 916243 | 916296 | 916349 | 916401 | 53 |
| 825 | 916717 | 916770 | 916822 | 916875 | 916927 | 53 |
| 826 | 917243 | 917295 | 917348 | 917400 | 917453 | 53 |
| 827 | 917768 | 917820 | 917873 | 917925 | 917978 | 52 |
| 828 | 918293 | 918345 | 918397 | 918450 | 918502 | 52 |
| 829 | 918816 | 918869 | 91892 I | 918973 | 919026 | 52 |
| 830 | 919340 | 919392 | 919444 | 919496 | 919549 | 52 |
| 831 | 919862 | 919914 | 919967 | 920019 | 920071 | 52 |
| 832 | 920384 | 920436 | 920489 | 920541 | 920593 | 52 |
| 833 | 920906 | 920958 | 921010 | 921062 | 921114 | 52 |
| 834 | 921426 | 921478 | 921530 | 921582 | 921634 | 52 |
|  | 921946 | 921998 | 922050 | 922102 | 922154 | 52 |
| 836 | 922466 | 922518 | 922570 | 922622 | 922674 | 52 |
| 837 | 922985 | 923037 | 923089 | 923140 | 923192 | 52 |
| 838 838 | 923503 | 923555 | 923607 | 923658 | 923710 | 52 |
| 839 | 924021 | 924072 | 924124 | 924176 | 924228 | 52 |
| 840 | 924538 | 924589 | 924641 | 924693 | 924744 | 52 |
| 841 | 925054 | 925 106 | 925157 | 925209 | 925261 | 52 |
| 842 | 925570 | 925621 | 925673 | 925725 | 925776 | 52 |
| 843 | 926085 | 926137 | 926188 | 926240 | 926291 | 51 |
| 844 | 926600 | 926651 | 926702 | 926754 | 926805 | 51 |
| 845 | 927114 | 927165 | 927216 | 927268 | 927319 | 51 |
| 846 | 927627 | 927678 | 927730 | 927781 | 927832 | 51 |
| 847 | 928140 | 928191 | 928242 | 928293 | 928345 | 51 |
| 848 | 928652 | 928703 | 928754 | 928805 | 928857 | 51 |
| 849 | 929163 | 929215 | 929266 | 929317 | 929368 | 51 |

## Log. 929. No. 850.

| No. | 0 | 1 | 2 | 3 | 4 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 850 | 929419 | 929470 | 929521 | 929572 | 929623 | 51 |
| 851 | 929930 | 929981 | 930032 | 930083 | 930134 | 51 |
| 852 | 930440 | 930491 | 930542 | 930592 | 930643 | 51 |
| 853 | 930949 | 931000 | 93105 I | 931102 | 931153 | 51 |
| 854 | 931458 | 931509 | 931560 | 931610 | 931661 | 51 |
| 855 | 931966 | 932017 | 932068 | 932118 | 932169 | 51 |
| 856 | 932474 | 932524 | 932575 | 932626 | 932677 | 51 |
| 857 | 932981 | 933031 | 933082 | 933133 | 933183 | 51 |
| 858 | 933487 | 933538 | 933589 | 933639 | 933690 | 51 |
| 859 | 933993 | 934044 | 934094 | 934145 | 934195 | 51 |
| 860 | 934498 | 934549 | 934599 | 934650 | 934700 | 50 |
| 861 | 935003 | 935054 | 935104 | 935154 | 935205 | 50 |
| 862 | 935507 | 935558 | 935608 | 935658 | 935709 | 50 |
| 863 | 936011 | 936061 | 936111 | 936162 | 936212 | 50 |
| 864 | 936514 | 936564 | 936614 | 936665 | 936715 | 50 |
| 865 | 937016 | 937066 | 937117 | 937167 | 937217 | 50 |
| 866 | 937518 | 937568 | 937618 | 937668 | 937718 | 50 |
| 867 | -938019 | 938069 | 938119 | 938169 | 938219 | 50 |
| 868 | 938520 | $93857{ }^{\circ}$ | 938620 | 938670 | 938720 | 50 |
| 869 | 939020 | 939070 | 939120 | 939170 | 939220 | 50 |
| 870 | 939519 | 939569 | 939619 | 939669 | 939719 | 50 |
| 871 | 940018 | 940068 | 940118 | 940168 | 940218 | 50 |
| 872 | 940516 | 940566 | 940616 | 940666 | 940716 | 50 |
| 873 | 941014 | 941064 | 941114 | 941163 | 941213 | 50 |
| 874 | 94151 I | 941561 | 941611 | 941660 | 941710 | 50 |
| 875 | 942008 | 942058 | 942107 | 942157 | 942207 | 50 |
| 876 | 942504 | 942554 | 942603 | 942653 | 942702 | 50 |
| 877 | 943000 | 943049 | 943099 | 943148 | 943198 | 49 |
| 878 | 943495 | 943544 | 943593 | 943643 | 943692 | 49 |
| 879 | 943989 | 944038 | 944088 | 944137 | 944186 | 49 |
| 880 | 944483 | 944532 | 944581 | 944631 | 944680 | 49 |
| 88I | 944976 | 945025 | 945074 | 945124 | 945173 | 49 |
| 882 | 945469 | 945518 | 945567 | 945616 | 945665 | 49 |
| 883 | 945961 | 946010 | 946059 | 946108 | 946157 | 49 |
| 884 | 946452 | 946501 | 946551 | 946600 | 946649 | 49 |
| 885 | 946943 | 946992 | 947041 | 947090 | $94714{ }^{\circ}$ | 49 |
| 886 | 947434 | 947483 | 947532 | 947581 | 947630 | 49 |
| 887 | 947924 | 947973 | 948022 | 948070 | 948119 | 49 |
| 888 | 948413 | 948462 | 94851 I | 948560 | 948609 | 49 |
| 889 | 948902 | 948951 | 948999 | 949048 | 949097 | 49 |
| 890 | 949390 | 949439 | 949488 | 949536 | 949585 | 49 |
| 891 | 949878 | 949926 | 949975 | 950024 | 950073 | 49 |
| 892 | 950365 | 950414 | 950462 | 950511 | 950560 | 49 |
| 893 | 950851 | 950900 | 950949 | 950997 | 951046 | 49 |
| 894 | 951338 | 951386 | 951435 | 951483 | 951532 | 49 |
|  | 951823 | 951872 | 951920 | 951969 | 952017 | 48 |
| 896 | 952308 | 952356 | 952405 | 952453 | 952502 | 48 |
| 897 | 952792 | 952841 | 952889 | 952938 | 952986 | 48 |
| 898 | 953276 | 953325 | 953373 | 95342 I | 953470 | 48 |
| 899 | 953760 | 953808 | 953856 | 953905 | 953953 | 48 |

For explanation see pp. 207-215

Log. 954. No. 899

| No. | 5 | 6 | 7 | 8 | 9 | Difif |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 850 | 929674 | 929725 | 929776 | 929827 | 929879 | 51 |
| 851 | 930185 | 930236 | 930287 | 930338 | 930389 | 51 |
| 852 | 930694 | 930745 | 930796 | 930847 | 930898 | 51 |
| 853 | 931204 | 931254 | 931305 | 931356 | 931407 | 51 |
| 854 | 931712 | 931763 | 931814 | 931865 | 931915 | 51 |
| 855 | 932220 | 932271 | 932322 | 932372 | 932423 | 51 |
| 856 | 932727 | 932778 | 932829 | 932879 | $93293{ }^{\circ}$ | 51 |
| 857 | 933234 | 933285 | 933335 | 933386 | 933437 | 51 |
| 858 | 933740 | 933791 | 933841 | 933892 | 933943 | 51 |
| 859 | 934246 | 934296 | 934347 | 934397. | 934448 | 51 |
| 860 | 934751 | 93480I | 934852 | 934902 | 934953 | 50 |
| 86r | 935255 | 935306 | 935356 | 935406 | 935457 | 50 |
| 862 | 935759 | 935809 | 935860 | 935910 | 935960 | 50 |
| 863 | 936262 | 936313 | 936363 | 936413 | 936463 | 50 |
| 864 | 936765 | 936815 | 936865 | 936916 | 936966 | 50 |
| 865 | 937267 | 937317 | 937367 | 937418 | 937468 | 50 |
| 866 | 937769 | 937819 | 937869 | 937919 | 937969 | 50 |
| 867 | 938269 | 938320 | 938370 | 938420 | 938470 | 50 |
| 868 | 938770 | 938820 | 938870 | 938920 | 938970 | 50 |
| 869 | 939270 | 939320 | 939369 | 939419 | 939469 | 50 |
| 870 | 939769 | 939819 | 939869 | 939918 | 939968 | 50 |
| 871 | 940267 | 940317 | 940367 | 940417 | 940467 | 50 |
| 872 | 940765 | 940815 | 940865 | 940915 | 940964 | 50 |
| 873 | 941263 | 941313 | 941362 | 941412 | 941462 | 50 |
| 874 | 941760 | 941809 | 941859 | 941909 | 941958 | 50 |
| 875 | 942256 | 942306 | 942355 | 942405 | 942455 | 50 |
| 876 | 942752 | 942801 | 94285 I | 942901 | 942950 | 50 |
| 877 | 943247 | 943297 | 943346 | 943396 | 943445 | 49 |
| 878 | 943742 | 943791 | 943841 | 943890 | 943939 | 49 |
| 879 | 944236 | 944285 | 944335 | 944384 | 944433 | 49 |
| 880 | 944729 | 944779 | 944828 | 944877 | 944927 | 49 |
| 88 I | 945222 | 945272 | 945321 | 945370 | 945419 | 49 |
| 882 | 945715 | 945764 | 945813 | 945862 | 945912 | 49 |
| 883 | 946207 | 946256 | 946305 | 946354 | 946403 | 49 |
| 884 | 946698 | 946747 | 946796 | 946845 | 946894 | 49 |
|  | $947189$ |  | 947287 | 947336 |  | 49 |
| 886 | 947679 | 947728 | 947777 | 947826 | 947875 | 49 |
| 887 | 948168 | 948217 | 948266 | 948315 | 948364 | 49 |
| 888 | 948657 | 948706 | 948755 | 948804 | 948853 | 49 |
| 889 | 949146 | 949195 | 949244 | 949292 | 949341 | 49 |
| 890 | 949634 | 949683 | 949731 | 949780 | 949829 | 49 |
| 891 | 950121 | 950170 | 950219 | 950267 | 950316 | 49 |
| 892 | 950608 | 950657 | 950706 | 950754 | 950803 | 49 |
| 893 | 951095 | 951143 | 951192 | 951240 | 951289 | 49 |
| 894 | 951580 | 951629 | 951677 | 951726 | 951775 | 49 |
| 895 | 952066 | 952114 | 952163 | 952211 | 952260 | 48 |
| 896 | 952550 | 952599 | 952647 | 952696 | 952744 | 48 |
| 897 | 953034 | 953083 | 953131 | 953180 | 953228 | 48 |
| 898 | 953518 | 953566 | 953615 | 953663 | 953711 | 48 |
| 899 | 954001 | 954049 | 954098 | 954146 | 954194 | 48 |

Log. 954. No. 900.

| No. | 0 | 1 | 2 | 3 | 4 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 900 | 954243 | 954291 | 954339 | 954387 | 954435 | 48 |
| 901 | 954725 | 954773 | 954821 | 954869 | 954918 | 48 |
| 902 | 955207 | 955255 | 955303 | 955351 | 955399 | 48 |
| 903 | 955688 | 955736 | 955784 | 955832 | 955880 | 48 |
| 904 | 956168 | 956216 | 956265 | 956313 | 956361 | 48 |
| 905 | 956649 | 956697 | 956745 | 956793 | 956840 | 48 |
| 906 | 957128 | 957176 | 957224 | 957272 | 957320 | 48 |
| 907 | 957607 | 957655 | 957703 | 957751 | 957799 | 48 |
| 908 | 958086 | 958134 | 958181 | 958229 | 958277 | 48 |
| 909 | 958564 | 958612 | 958659 | 958707 | 958755 | 48 |
| 910 | 959041 | 959089 | 959137 | 959185 | 959232 | 48 |
| 9 II | 959518 | 959566 | 959614 | 959661 | 959709 | 48 |
| 912 | 959995 | 960042 | 960090 | 960138 | 960185 | 48 |
| 913 | 960471 | 960518 | 960566 | 960613 | 96066 I | 48 |
| 914 | 960946 | 960994 | 961041 | 961089 | 961136 | 47 |
| 915 | 961421 | 961469 | 961516 | 961563 | 961611 | 47 |
| 916 | 961895 | 961943 | 961990 | 962038 | 962085 | 47 |
| 9 7 | 962369 | 962417 | 962464 | 962511 | 962559 | 47 |
| 9 I 8 | 962843 | 962890 | 962937 | 962985 | 963032 | 47 |
| 919 | 963316 | 963363 | 963410 | 963457 | 963504 | 47 |
| 920 | 963788 | 963835 | 963882 | 963929 | 963977 | 47 |
| 921 | 964260 | 964307 | 964354 | 964401 | 964448 | 47 |
| 922 | 964731 | 964778 | 964825 | 964872 | 964919 | 47 |
| 923 | 965202 | 965249 | 965296 | 965343 | 965390 | 47 |
| 924 | 965672 | 965719 | 965766 | 965813 | 965860 | 47 |
| 925 | 966142 | 966189 | 966236 | 966283 | 966329 | 47 |
| 926 | 966611 | 966658 | 966705 | 966752 | 966799 | 47 |
| 927 | 967080 | 967127 | 967173 | 967220 | 967267 | 47 |
| 928 | 967548 | 967595 | 967642 | 967688 | 967735 | 47 |
| 929 | 968016 | 968062 | 968109 | 968156 | 968203 | 47 |
| 930 | 968483 | 968530 | 968576 |  | 968670 | 47 |
| 931 | 968950 | 968996 | 969043 | 969090 | 969136 | 47 |
| 932 | 969416 | 969463 | 969509 | 969556 | 969602 | 47 |
| 933 | 969882 | 969928 | 969975 | 970021 | 970068 | 47 |
| 934 | 970347 | 970393 | 970440 | 970486 | 970533 | 46 |
| 935 | 970812 | 970858 | 970904 | 970951 | 970997 | 46 |
| 936 | 971276 | 971322 | 971369 | 971415 | 971461 | 46 |
| 937 | 971740 | 971786 | 971832 | 971879 | 971925 | 46 |
| 938 | 972203 | 972249 | 972295 | 972342 | 972388 | 46 |
| 939 | 972666 | 972712 | 972758 | 972804 | 972851 | 46 |
| 940 | 973128 | 973174 | 973220 | 973266 | 973313 | 46 |
| 941 | 973590 | 973636 | 973682 | 973728 | 973774 | 46 |
| 942 | 974051 | 974097 | 974143 | 974189 | 974235 | 46 |
| 943 | 974512 | 974558 | 974604 | 974650 | 974696 | 46 |
| 944 | 974972 | 975018 | 975064 | 975110 | 975156 | 46 |
|  |  | 975478 |  |  | 975616 | 46 |
| 946 | 975891 | 975937 | 975983 | 976029 | 976075 | 46 |
| 947 | 976350 | 976396 | 976442 | 976488 | 976533 | 46 |
| 948 | 976808 | 976854 | 976900 | 976946 | 976992 | 46 |
| 949 | 977200 | 977312 | 977358 | 977403 | 977449 | 46 |

For explanation see pp. 207-215

Log. 977. No. 949.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 900 | 954484 | 954532 | 954580 | 954628 | 954677 | 48 |
| 901 | 954966 | 955014 | 955062 | 955110 | 955158 | 48 |
| 902 | 955447 | 955495 | 955543 | 955592 | 955640 | 48 |
| 903 | 955928 | 955976 | 956024 | 956072 | 956120 | 48 |
| 904 | 956409 | 956457 | 956505 | 956553 | 956601 | 48 |
| 905 | 956888 | 956936 | 956984 | 957032 | 957080 | 48 |
| 906 | 957368 | 957416 | 957464 | 957512 | 957559 | 48 |
| 907 | 957847 | 957894 | 957942 | 957990 | 958038 | 48 |
| 908 | 958325 | 958373 | 958421 | 958468 | 958516 | 48 |
| 909 | 958803 | 958850 | 958898 | 958946 | 958994 | 48 |
| 910 | 959280 | 959328 | 959375 | 959423 | 959471 | 48 |
| 9 II | 959757 | 959804 | 959852 | 959900 | 959947 | 48 |
| 912 | 960233 | 960280 | 960328 | 960376 | 960423 | 48 |
| 913 | 960709 | 960756 | 960804 | 960851 | 960899 | 48 |
| 914 | 961184 | 961231 | 961279 | 961326 | 961374 | 47 |
| 915 | 961658 | 961706 | 961753 | 961801 | 961848 | 47 |
| 916 | 962132 | 962180 | 962227 | 962275 | 962322 | 47 |
| 917 | 962606 | 962653 | 9627 O1 | 962748 | 962795 | 47 |
| 918 | 963079 | 963126 | 963174 | 963221 | 963268 | 47 |
| 919 | 963552 | 963599 | 963646 | 963693 | 96374 I | 47 |
| 920 | 964024 | 964071 | 964118 | 964165 | 964212 | 47 |
| 921 | 964495 | 964542 | 964590 | 964637 | 964684 | 47 |
| 922 | 964966 | 965013 | 965061 | 965108 | 965155 | 47 |
| 923 | 965437 | 965484 | 965531 | 965578 | 965625 | 47 |
| 924 | 965907 | 965954 | 96600r | 966048 | 966095 | 47 |
| 925 | 966376 | 966423 | 966470 | 966517 | 966564 | 47 |
| 926 | 966845 | 966892 | 966939 | 966986 | 967033 | 47 |
| 927 | 967314 | 967361 | 967408 | 967454 | 967501 | 47 |
| 928 | 967782 | 967829 | 967875 | 967922 | 967969 | 47 |
| 929 | 968249 | 968296 | 968343 | 968390 | 968436 | 47 |
| 930 | 968716 | 968763 | 968810 | 968856 | 968903 | 47 |
| 931 | 969183 | 969229 | 969276 | 969323 | 969369 | 47 |
| 932 | 969649 | 969695 | 969742 | 969789 | 969835 | 47 |
| 933 | 970114 | 970161 | 970207 | 970254 | 970300 | 47 |
| 934 | 970579 | 970626 | 970672 | 970719 | 970765 | 46 |
| 935 | 971044 | 971090 | 971137 | 971183 | 971229 | 46 |
| 936 | 971508 | 971554 | 971601 | 971647 | 971693 | 46 |
| 937 | 971971 | 972018 | 972064 | 972110 | 972157 | 46 |
| 938 | 972434 | 972481 | 972527 | 972573 | 972619 | 46 |
| 939 | 972897 | 972943 | 972989 | 973035 | 973082 | 46 |
| 940 | 973359 | 973405 | 973451 | 973497 | 973543 | 46 |
| 941 | 973820 | 973866 | 973913 | 973959 | 974005 | 46 |
| 942 | 974281 | 974327 | 974374 | 974420 | 974466 | 46 |
| 943 | 974742 | 974788 | 974834 | 974880 | 974926 | 46 |
| 944 | 975202 | 975248 | 975294 | $97534{ }^{\circ}$ | 975386 | 46 |
| 945 |  | 975707 | 975753 | 975799 |  | - 46 |
| 946 | 976121 | 976167 | 976212 | 976258 | 976304 | - 46 |
| 947 | 976579 | 976625 | 976671 | 976717 | 976763 | 46 |
| 948 | 977037 | 977083 | 977129 | 977175 | 977220 | 46 |
| 949 | 977495 | 977541 | 977586 | 977632 | 977678 | 46 |

Log. 977. No. 950.

| No. | 0 | 1 | 2 | 3 | 4 | Diff, |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 950 | 977724 | 977769 | 977815 | 977861 | 977906 | 46 |
| 951 | 97818 I | 978226 | 978272 | 978317 | 978363 | 46 |
| 952 | 978637 | 978683 | 978728 | 978774 | 978819 | 46 |
| 953 | 979093 | 979138 | 979184 | 979230 | 979275 | 46 |
| 954 | 979548 | 979594 | 979639 | 979685 | 979730 | 46 |
| 955 | 980003 | 980049 | 980094 | 980140 | 980185 | 45 |
| 956 | 980458 | 980503 | 980549 | 980594 | 980640 | 45 |
| 957 | 980912 | 980957 | 981003 | 981048 | 98 I 093 | 45 |
| 958 | 981366 | 98141 I | 981456 | 981501 | 981547 | 45 |
| 959 | 981819 | 981864 | 981909 | 981954 | 982000 | 45 |
| 960 | 982271 | 982316 | 982362 | 982407 | 982452 | 45 |
| 96I | 982723 | 982769 | 982814 | 982859 | 982904 | 45 |
| 962 | 983175 | 983220 | 983265 | 983310 | 983356 | 45 |
| 963 | 983626 | 983671 | 983716 | 983762 | 983807 | 45 |
| 964 | 984077 | 984122 | 984167 | 984212 | 984257 | 45 |
| 965 | 984527 | 984572 | 984617 | 984662 | 984707 | 45 |
| 966 | 984977 | 985022 | 985067 | 985112 | 985157 | 45 |
| 967 | 985426 | 985471 | 985516 | 985561 | 985606 | 45 |
| 968 | 985875 | 985920 | 985965 | 986010 | 986055 | 45 |
| 969 | 986324 | 986369 | 986413 | 986458 | 986503 | 45 |
| 970 | 986772 | 986817 | 986861 | 986906 | 986951 | 45 |
| 971 | 987219 | 987264 | 987309 | 987353 | 987398 | 45 |
| 972 | 987666 | 987711 | 987756 | 987800 | 987845 | 45 |
| 973 | 988113 | 988157 | 988202 | 988247 | 988291 | 45 |
| 974 | 988559 | 988604 | 988648 | 988693 | 988737 | 45 |
| 975 | 989005 | 989049 | 989094 | 989138 | 989183 | 45 |
| 976 | 989450 | 989494 | 989539 | 989583 | 989628 | 44 |
| 977 | 989895 | 989939 | 989983 | 990028 | 990072 | 44 |
| 978 | 990339 | 990383 | 990428 | 990472 | 990516 | 44 |
| 979 | 990783 | 990827 | 990871 | 990916 | 990960 | 44 |
| 980 | 991226 | 991270 | 991315 | 991359 | 991403 | 44 |
| 98I | 991669 | 991713 | 991758 | 991802 | 991846 | 44 |
| 982 | 992111 | 992156 | 992200 | 992244 | 992288 | 44 |
| 983 | 992554 | 992598 | 992642 | 992686 | 992730 | 44 |
| 984 | 992995 | 993039 | 993083 | 993127 | 993172 | 44 |
| 985 | 993436 | 993480 | 993524 | 993568 | 993613 | 44 |
| 986 | 993877 | 993921 | 993965 | 994009 | 994053 | 44 |
| 987 | 994317 | 99436I | 994405 | 994449 | 994493 | 44 |
| 988 | 994757 | 994801 | 994845 | 994889 | 994933 | 44 |
| 989 | 995196 | 995240 | 995284 | 995328 | 995372 | 44 |
| 990 | 995635 | 995679 | 995723 | 995767 | 9958 II | 44 |
| 991 | 996074 | 996117 | 996161 | 996205 | 996249 | 44 |
| 992 | 996512 | 996555 | 996599 | 996643 | 996687 | 44 |
| 993 | 996949 | 996993 | 997037 | 997080 | 997124 | 44 |
| 994 | 997386 | $99743{ }^{\circ}$ | 997474 | 997517 | 997561 | 44 |
| 995 | 997823 | 997867 | 997910 | 997954 | 997998 | 44 |
| 996 | 998259 | 998303 | 998347 | 998390 | 998434 | 44 |
| 997 | 998695 | 998739 | 998782 | 998826 | 998869 | 44 |
| 998 | 999131 | 999174 | 999218 | 999261 | 999305 | 44 |
| 999 | 999565 | 999609 | 999652 | 999696 | 999739 | 43 |

For explanation see pp. 207-215

## Log. 999. No. 999.

| No. | 5 | 6 | 7 | 8 | 9 | Diff. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 950 | 977952 | 977998 | 978043 | 978089 | 978135 | 46 |
| 951 | 978409 | 978454 | 978500 | 978546 | 978591 | 46 |
| 952 | 978865 | 978911 | 978956 | 979002 | 979047 | 46 |
| 953 | 97932 I | 979366 | 979412 | 979457 | 979503 | 46 |
| 954 | 979776 | 979821 | 979867 | 979912 | 979958 | 46 |
| 955 | 980231 | 980276 | 980322 | 980367 | 980412 | 45 |
| 956 | 980685 | 980730 | 980776 | 98082 I | 980867 | 45 |
| 957 | 981139 | 981184 | 981229 | 981275 | 981320 | 45 |
| 958 | 981592 | 981637 | 981683 | 981728 | 981773 | 45 |
| 959 | 982045 | 982090 | 982135 | 982181 | 982226 | 45 |
| 960 | 982497 | 982543 | 982588 | 982633 | 982678 | 45 |
| 961 | 982949 | 982994 | 983040 | 983085 | 983130 | 45 |
| 962 | 983401 | 983446 | 983491 | 983536 | 98358 I | 45 |
| 963 | 983852 | 983897 | 983942 | 983987 | 984032 | 45 |
| 964 | 984302 | 984347 | 984392 | 984437 | 984482 | 45 |
| 965 | 984752 | 984797 | 984842 | 984887 | 984932 | 45 |
| 966 | 985202 | 985247 | 985292 | 985337 | 985382 | 45 |
| 967 | 985651 | 985696 | 985741 | 985786 | 985830 | 45 |
| 968 | 986100 | 986144 | 986189 | 986234 | 986279 | 45 |
| 969 | 986548 | 986593 | 986637 | 986682 | 986727 | 45 |
| 970 | 986996 | 987040 | 987085 | 987130 | 987175 | 45 |
| 971 | 987443 | 987488 | 987532 | 987577 | 987622 | 45 |
| 972 | 987890 | 987934 | 987979 | 988024 | 988068 | 45 |
| 973 | 988336 | 988381 | 988425 | 988470 | 988514 | 45 |
| 974 | 988782 | 988826 | 988871 | 988916 | 988960 | 45 |
| 975 | 989227 | 989272 | 989316 | 989361 | 989405 | 45 |
| 976 | 989672 | 989717 | 989761 | 989806 | 989850 | 44 |
| 977 | 990117 | 990161 | 990206 | 990250 | 990294 | 44 |
| 978 | 990561 | 990605 | 990650 | 990694 | 990738 | 44 |
| 979 | 991004 | 991049 | 991093 | 991137 | 991182 | 44 |
| 980 | 991448 | 991492 | 991536 | 991580 | 991625 | 44 |
| 98 I | 991890 | 991935 | 991979 | 992023 | 992067 | 44 |
| 982 | 992333 | 992377 | 99242 I | 992465 | 992509 | 44 |
| 983 | 992774 | 992819 | 992863 | 992907 | 992951 | 44 |
| 984 | 993216 | 993260 | 993304 | 993348 | 993392 | 44 |
|  |  | 993701 | 993745 | 993789 | 993833 | 44 |
| 986 | 994097 | 994141 | 994185 | 994229 | 994273 | 44 |
| 987 | 994537 | 994581 | 994625 | 994669 | 994713 | 44 |
| 988 | 994977 | 995021 | 995065 | 995108 | 995152 | 44 |
| 989 | 995416 | 995460 | 995504 | 995547 | 995591 | 44 |
| 990 | 995854 | 995898 | 995942 | 995986 | 996030 | 44 |
| 991 | 996293 | 996337 | 996380 | 996424 | 996468 | 44 |
| 992 | 99673 I | 996774 | 996818 | 996862 | 996906 | 44 |
| 993 | 997168 | 997212 | 997255 | 997299 | 997343 | 44 |
| 994 | 997605 | 997648 | 997692 | 997736 | 997779 | 44 |
|  | 998041 | 998085 | 998129 | 998172 | 998216 | 44 |
| 996 | 998477 | 99852 I | 998564 | 998608 | 998652 | 44 |
| 997 | 998913 | 998956 | 999000 | 999043 | 999087 | 44 |
| 998 | 999348 | 999392 | 999435 | 999479 | 999522 | 44 |
| 999 | 999783 | 999826 | 999870 | 999913 | 999957 | 43 |

## LOGARITHMS OF NUMBERS

| No. | Log. | No. | Log. | No. | Log. | No. | Log. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 000000 | 51 | 707570 | 101 | 004321 | 151 | 178977 |
| 2 | 301030 | 52 | 716003 | 102 | 008600 | 152 | 181844 |
| 3 | 477121 | 53 | 724276 | 103 | OI2837 | 153 | 184691 |
| 4 | 602060 | 54 | 732394 | 104 | 017033 | 154 | 187521 |
| 5 | 698970 | 55 | 740363 | 105 | 021189 | 155 | 190332 |
| 6 | 778151 | 56 | 748188 | 106 | 025306 | 156 | 193125 |
| 7 | 845098 | 57 | 755875 | 107 | 029384 | 157 | 195900 |
| 8 | 903090 | 58 | 763428 | 108 | 033424 | 158 | 198657 |
| 9 | 954243 | 59 | 770852 | 109 | 037426 | 159 | 201397 |
| 10 | 000000 | 00 | 778151 | 110 | 041393 | 160 | 204120 |
| II | 041393 | 61 | 785330 | II | 045323 | 16I | 206826 |
| 12 | 079181 | 62 | 792392 | 112 | 049218 | 162 | 209515 |
| 13 | 113943 | 63 | 799341 | 113 | 053078 | 163 | 212188 |
| 14 | 146128 | 64 | 806180 | 114 | 056905 | 164 | 214844 |
| 15 | 176091 | 65 | 812913 | 115 | 060698 | 165 | 217484 |
| 16 | 204120 | 66 | 819544 | 116 | 064458 | 166 | 220108 |
| 17 | 230449 | 67 | 826075 | 117 | 068186 | 167 | 222716 |
| 18 | 255273 | 68 | 832509 | 118 | 071882 | 168 | 225309 |
| 19 | 278754 | 69 | 838849 | 119 | 075547 | 169 | 227887 |
| 20 | 301030 | 70 | 845098 | 120 | 079181 | 170 | 230449 |
| 2 I | 322219 | 7 I | 851258 | 121 | 082785 | 171 | 232996 |
| 22 | 342423 | 72 | 857333 | 122 | 086360 | 172 | 235528 |
| 23 | 361728 | 73 | 863323 | 123 | 089905 | 173 | 238046 |
| 24 | 38021 I | 74 | 869232 | 124 | 093422 | 174 | 240549 |
| 25 | 397940 | 75 | 875061 | 125 | 096910 | 175 | 243038 |
| 26 | 414973 | 76 | 880814 | 126 | 100371 | 176 | 245513 |
| 27 | 431364 | 77 | 886491 | 127 | 103804 | 177 | 247973 |
| 28 | 447158 | 78 | 892095 | 128 | 107210 | 178 | 250420 |
| 29 | 462398 | 79 | 897627 | 129 | 110590 | 179 | 252853 |
| 30 | 477121 | 80 | 903090 | 130 | 113943 | 180 | 255273 |
| 31 | 491362 | 81 | 908485 | 131 | 117271 | 181 | 257679 |
| 32 | 505150 | 82 | 913814 | 132 | 120574 | 182 | 260071 |
| 33 | 518514 | 83 | 919078 | 133 | 123852 | 183 | 262451 |
| 34 | 531479 | 84 | 924279 | 134 | 127105 | 184 | 264818 |
| 35 | 544068 | 85 | 929419 | I35 | 130334 | 185 | 267172 |
| 36 | 556303 | 86 | 934498 | 136 | 133539 | 186 | 269513 |
| 37 | 568202 | 87 | 939519 | 137 | 136721 | 187 | 271842 |
| 38 | 579784 | 88 | 944483 | 138 | 139879 | 188 | 274158 |
| 39 | 591065 | 89 | 949390 | 139 | 143015 | 189 | 276462 |
| 40 | 602060 | 90 | 954243 | 140 | 146128 | 190 | 278754 |
| 4 I |  | 91 |  |  |  | 191 | 281033 |
| 42 | 623249 | 92 | 963788 | 142 | 152288 | r92 | 283301 |
| 43 | 633468 | 93 | 968483 | 143 | 155336 | 193 | 285557 |
| 44 | 643453 | 94 | 973128 | 144 | 158362 | 194 | 287802 |
| 45 | 653213 | 95 | 977724 | 145 | 161368 | 195 | 290035 |
| 46 | 662758 | 96 | 982271 | 146 | 164353 | 196 | 292256 |
| 47 | 672098 | 97 | 986772 | 147 | 167317 | 197 | 294466 |
| 48 | 681241 | 98 | 991226 | 148 | 170262 | 198 | 296665 |
| 49 | 690196 | 99 | 995635 | 149 | 173186 | 199 | 298853 |
| 50 | 698970 | 100 | 000000 | 150 | 176091 | 200 | 301030 |

For explanation see pp. 207-215

# LOGARITHMIC TABLES <br> of <br> <br> COMPOUND INTEREST AND ANNUITIES 

 <br> <br> COMPOUND INTEREST AND ANNUITIES}

BY
FÉDOR THOMAN

## TABLE I.

SHOWING
(A) The Logarithms of the Amount of $£ I$ at the end of any number of years from 1 to 100 years.
$\log r^{n}$.
(B) The Logarithms of the Annuity $\mathcal{E} a$ per annum which $\mathcal{E}_{1}$ will purchase for any number of years from 1 to 100 years.

$$
\log a^{n}
$$

In the notation used in the explanation on pages $216-228$, the symbol $(1+i)^{n}$ is employed instead of M. Thoman's symbol $r^{z t}$, and $\frac{\mathrm{I}}{a_{\vec{n}!}}$ instead of his symbol $a^{n}$.

Table 1. Shewing: 1st Logarithm of the amount of $£ 1$. at the end of any number of years.

1 2nd the Logarithm of the annuity $1 \quad$ \& 2 per annum which $£ 1$. will purchase for any number of years.

| Years | Log. $r^{\text {ma }}$. | Log. $a^{n}$. | Log. $a^{n}$. | Log. $r^{n}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,00216.61 | 0,00216.61 | 8,34757.77 | 0,11046.91 | 51 |
| 2 | 0,00433.21 | 9,70221 77 | 8,34018-12 | $0,11263^{\circ} 5^{2}$ | 52 |
| 3 | 0,00649.82 | 9,52720 73 | 8,33294.45 | 0, 11488013 | 53 |
| 4 | 0,00866.42 | 9,40334 84 | $8.32586 \cdot 16$ | 0,11696*73 | 54 |
| 5 | 0,01083.03 | 9,30751.74 | 8,31892.67 | 0, I1913.34 | 55 |
| 6 | 0,01299.64 | 9,22941 ${ }^{\text {- }}$ 43 | $8,31213.45$ | 0,12129.95 | 56 |
| 7 | 0,01516.24 | 9,16354.47 | $8,30547 \% 9$ | $0,12346 \cdot 55$ | 57 |
| 8 | 0,017.32.85 | 9,10662.90 | 8,29895.81 | 0,12563.16 | 58 |
| 9 | 0,01949.46 | 9.05655.18 | 8,29256.45 | 0,12779.76 | 59 |
| 10 | $0,02166.06$ | 9,01 186.88 | 8,28629*48 | 0,12996*37 | 60 |
| 11 | 0,02382-67 | 8,97154.97 | 8,28014.49 | 0,13212.98 | 61 |
| 12 | 0,02599.27 | 8,93483.38 | 8,27411 08 | 0,13429. 58 | 62 |
| 13 | 0,02815.88 | 8,90114*35 | 8,26818-87 | 0,13646.19 | 63 |
| 14 | 0,03032.49 | 8,87002.97 | 8,26237.52 | $0,13862 \cdot 80$ | 64 |
| 15 | 0,03249 ${ }^{\circ} 9$ | 8,84113.64 | 8,25666.70 | 0, 14079.40 | 65 |
| 16 | 0,03465.70 | 8,81417*67 | 8.25106 .05 | 0,14296.01 | 66 |
| 17 | 0,03682:30 | 8,7889r.6I | 8,24555:30 | 0,14512.61 | 67 |
| 18 | 0,03898.91 | 8,76515.97 | 8,24014 ${ }^{\circ} 12$ | 0,14729.22 | 68 |
| 19 | 0,04115.52 | 8,74274.50 | 8, $23482 \cdot 25$ | 0,14945.83 | 69 |
| 20 | 0,04332:12 | 8,72153.41 | 8,22959-42 | 0,15162.43 | 70 |
| 21 | 0,04548*73 | 8,70140'94 | 8,22445.35 | $0,15379^{\circ} \mathrm{O}$ | 71 |
| 22 | 0,0476:34 | 8,68226.97 | 8,21939.82 | 0,15595.64 | 72 |
| 23 | 0,04981.94 | 8,66402.73 | 8,21442.58 | 0,15812.25 | 73 |
| 24 | $0,05108 \cdot 5$ | 8,64660'57 | 8,20953.39 | 0,16028.86 | 74 |
| 25 | 0,0541515 | 8,6299.'79 | 8,20472'05 | 0,16245.46 | 75 |
| 26 | 0,05631.76 | 8,61396.47 | 8. $19998 \cdot 33$ | $0,16462.07$ | 76 |
| 27 | 0,0-84837 | 8,5986, 34 | 8,19532.05 | 0,16678.68 | 77 |
| 28 | 0,ohoti4.97 | 8,58,389*75 | 8,19073 ${ }^{\circ}$ | 0,16895.28 | 78 |
| 29 | 0,0628I•58 | 8,56971.49 | 8,18621 ${ }^{\circ} \mathrm{O}$ | 0,1711189 | 79 |
| 30 | 0,06498.19 | 8,55604-81 | 8,18175.89 | 0,17328.49 | 80 |
| $3{ }^{1}$ | 0,06714.79 | 8,54286.33 | 8,17737.46 | 0, 17545'10 | 81 |
| 32 | $0,06931 \cdot 40$ | 8,53012.96 | 8,17305.56 | 0,17761'71 | 82 |
| 33 | 0,07148.00 | 8,51781-95 | 8,16880-04 | 0,17978*31 | 83 |
| 34 | 0,07364.61 | 8,50590'74 | $8,16460 \cdot 73$ | 0,18194.92 | 84 |
| 35 | 0,07581.22 | 8,49437 ${ }^{\circ}$ | 8,16047-48 | 0,18411 $\cdot 52$ | 85 |
| 36 | 0,07797.82 | 8,48318.69 | $8,15640 \cdot 16$ | 0, 18628.13 | 86 |
| 37 | 0,08014.43 | 8,47233.78 | 8, 15238.6i | 0, 18844.74 | 87 |
| 38 | 0,08231 03 | 8,46180.52 | 8,14842.72 | 0,19061-34 | 88 |
| 39 | 0,08447'64 | 8,45157.26 | 8,14452.35 | 0,19277*95 | 89 |
| 40 | 0,08664.25 | 8,44162.47 | 8,14067.37 | 0,19494.56 | 90 |
| 41 | 0,08880.85 | 8,43194\%75 | 8,13687.67 | 0,19711'16 | 91 |
| 42 | 0,09097.46 | 8,42252.77 | 8,13313.12 | 0,1992777 | 92 |
| 43 | 0,09314.07 | 8,41335*33 | 8,12943.61 | $0,20144.37$ | 93 |
| 44 | 0,09530.67 | 8,4044131 | 8,12579.04 | 0,20360:98 | 94 |
| 45 | 0,09747.28 | 8,39569.62 | 8,12219.29 | 0,20577.59 | 95 |
| 46 | 0,09963.88 | 8,38719.30 | $8,11864.27$ | 0,20794•19 | 96 |
| 47 | 0,10180.49 | 8,37889*42 | 8,11513.86 | 0,21010.80 | 97 |
| 48 | 0,10397 10 | 8,37079.11 | 8,1116799 | 0,21227.41 | 98 |
| 49 | 0,10613'70 | $8,36287.57$ | 8,10826.55 | $0,21444^{\circ} \mathrm{I}$ | 99 |
| 50 | $0,10830 \cdot 31$ | 8,35514'03 | $\begin{aligned} & 8,10489.45 \\ & 7,69897 \cdot 00 \end{aligned}$ | 0,21660.62 | $\left\lvert\, \begin{aligned} & 100 \\ & \text { Perp } \end{aligned}\right.$ |

1
Per Cent.

| Years | Log. re". | Log. $a^{n}$. | Log. $a^{n}$. | Log. ${ }^{\text {en }}$ | Year |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,00432.14 | 0,00432.14 | 8,40013"73 | 0,22039 ${ }^{\circ} \mathrm{I}$ | 51 |
| 2 | 0,00864.27 | 9,70544.67 | 8,39368.10 | 0,22471 14 | 52 |
| 3 | $0,01296.41$ | 9,53150.71 | 8,38738 20 | 0,22903.28 | 53 |
| 4 | 0,01728.55 | 9,40871.66 | $8,38123.39$ | 0,2,3335.42 | 54 |
| 5 | 0,02160.69 | 9,31395.11 | 8,37523.13 | 0,23767.56 | 55 |
| 6 | 0,02592.82 | 9,23691.09 | $8,36936 \cdot 88$ | 0,24199.69 | 56 |
| 7 | 0,03024.96 | 9,17110.14 | 8,36364'13 | 0,246.31-83 | 57 |
| 8 | 0,03457'10 | 9,11624-34 | 8,35804.40 | 0,25063.97 | 58 |
| 9 | 0,03889.24 | 9,06722'10 | 8,35257'23 | 0,25496.11 | 59 |
| 10 | 0,04321]37 | 9,02359.02 | 8,34722.17 | 0,25928.24 | 60 |
| 11 | 0,04753.51 | 8,984,32.06 | 8,34198.82 | 0,26360:38 | 61 |
| 12 | 0,05185.65 | 8,94865•15 | 8,33686.80 | 0,26-920.52 | 62 |
| 13 | 0,05617.79 | $8,91600 \cdot 53$ | 8,33185.73 | 0,27224.65 | 63 |
| 14 | 0,06049'92 | 8,88593.30 | 8,32695'27 | 0,276156 | 64 |
| 15 | 0,06482.06 | 8,85807.85 | $8,32215.04$ | 0,28088.93 | 65 |
| 16 | $0,06914.20$ | $8,83215.49$ | 8,31744.74 | 0,2852107 | 66 |
| 17 | 0,07346.34 | 8,80792•76 | 8,31284.06 | 0,28953.20 | 67 |
| 18 | 0,07778.47 | $8,78520.21$ | 8,30832.70 | 0,29,385.34 | 68 |
| 19 | 0,08210.61 | $8,76381.54$ | $8,30390 \cdot 41$ | 0,29817.48 | 69 |
| 20 | $\cdot 0,08642 \cdot 75$ | 8,74362.98 | 8,29956** ${ }^{7}$ | 0,30249.62, | 70 |
| 21 | 0,09074.88 | 8,72452.77 | 8,29531-85 | $0,30681 \cdot 75$ | 71 |
| 22 | 0,09507.02 | 8,70640.81 | 8,29115.10 | $0,31113.89$ | 72 |
| 23 | 0,09939'16 | 8,68918.31 | 8,28706.38 | 0,31546.03 | 73 |
| 24 | 0,10371-30 | 8,67277.62 | 8,28305.45 | 0,31978•7 | 74 |
| 25 | 0, 10803.43 | $8,65712.04$ | 8,27912-12 | 0,32410.30 | 75 |
| 26 | 0,11235.57 | 8,64215.65 | 8,27526.16 | $0,32842 \cdot 44$ | 76 |
| 27 | 0,11667.71 | 8,62783.20 | 8,27147.36 | 0,33274.58 | 77 |
| 28 | 0,12099.85 | 8,61410.00 | 8,26775.54 | 0,33706.72 | 78 |
| 29 | 0,12531.98 | 8,60091-87 | 8,26410.51 | 0,34138.85 | 79 |
| 30 | 0,12964•12 | 8,58825.06 | 8,26052*10 | 0,34570'99 | 80 |
| ? | $0,13396 \cdot 26$ | 8,57606.17 | 8,25700.14 | 0,35003.13 | 81 |
| $3-$ | $0,13828 \cdot 40$ | 8,56432'14 | $8,25354 \times 42$ | $0,35435 \cdot 27$ | 82 |
| 33 | $0,14260 \cdot 53$ | 8,55300'19 | 8,25014.80 | 0,35867.40 | 83 |
| 34 | $0,14692 \cdot 67$ | 8,54207.78 | 8,24681 18 | 0,36299.54 | 84 |
| 35 | $0,15124.81$ | 8,53152.59 | 8,24353.36 | 0,36731.68 | 85 |
| 36 | 0, 15556.95 | 8,52132.52 | 8,24031.21 | 0,37163.81 | 86 |
| 37 | 0,15989.08 | 8,51145.62 | 8,23714.56 | 0,37595.95 | 87 |
| 38 | 0,16421.22 | 8,50190•10 | 8,23403.34 | 0,38028.09 | 88 |
| 39 | $0,16853.36$ | 8,49264.30 | $8,23097.39$ | 0,38460.23 | 89 |
| 40 | $0,17285^{\circ} 50$ | 8,48366.72 | 8,22796.52 | 0,38892.36 | 90 |
| 41 | 0,17717.63 | 8,47495.92 | 8,22500.72 | 0,39324:50 | 91 |
| 42 | 0,18149 77 | 8,46650.62 | 8,22209.81 | 0,39756.64 | 92 |
| 43 | $0,18581 \cdot 91$ | 8,45829.59 | 8,21923.68 | 0,40188.78 | 93 |
| 44 | $0,19014{ }^{\circ} \mathrm{O}$ | 8,45031'70 | 8,21642.22 | 0,40620'91 | 94 |
| 45 | 0,19446.18 | 8,44255.89 | 8,21365.35 | $0,41053.05$ | 95 |
| 46 | 0,19878.32 | 8,43501 ${ }^{8} 7$ | 8,21092.03 | $0,41485 \cdot 19$ | 96 |
| 47 | $0,20310.46$ | 8,42766.63 | 8,20824.89 | 0,41917.33 | 971 |
| 48 | 0,20742.59 | $8,42051.42$ | 8,20561'12 | 0,42349*46 | 98 |
| 49 | 0,21174.73 | 8,41354.69 | 8,20301*53 | 0,42781.60 | 99 |
| 5 | $0,21606.87$ | 8,40675.69 | $\begin{aligned} & 8.20046 \cdot 04 \\ & 8,00000 \cdot 0 \end{aligned}$ | 0,43213.74 | $\begin{aligned} & 100 \\ & \text { Perp } \end{aligned}$ |


| Years | Log. $r^{\text {n }}$. | Log. $a^{\text {n }}$. | Log. $a^{n}$. | Log. ${ }^{\text {m }}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,00646.60 | 0,00646.60 | 8,45016.73 | 0,32976.82 | 51 |
| 2 | 0,01293.21 | 9,70865\%1 | 8,44455.80 | $0,33623.42$ | 52 |
| 3 | $0,019.3981$ | 9,53577.87 | 8,43910.15 | 0,34270.02 | 53 |
| 4 | $0,02586.42$ | 9,41404*49 | 8,43379'19 | $0,34916.63$ | 54 |
| 5 | 0,03233 ${ }^{0}$ | 9,32033.19 | 8,42862'34 | 0,35563.23 | 55 |
| 6 | $0,03879.63$ $0,04526.23$ | $9,24433.95$ $9,18057.36$ | 8,4235909 | 0,36209-84 | 56 |
| 7 | $0,04526.23$ $0,05172.83$ | 9,18057736 | 8,41868.90 | 0,36856.44 | 57 |
| 8 | $0,05172.83$ $0,05819.44$ | 9,12575'45 | $8,41391 \cdot 32$ $8,4092.87$ | 0,37503.04 | 58 |
| 10 | 0,06466.04 | $9,07776 \cdot 69$ $9,03516.62$ | $8,40925 \cdot 87$ $8,40472 \cdot 13$ | $0,38149 \cdot 5$ $0,38796.25$ | 59 |
| 11 | 0,07112.65 | 8,99692.23 | 8,40029 69 | 0,39442.86 | 61 |
| 12 | $0,07759.25$ | $8,96227.45$ | 8,39598-15 | 0,40089.46 | 62 |
| 13 | 0,08405.85 | 8,93064'52 | 8,39177.13 | 0,40736.07 | 63 |
| 14 | $0,09052.46$ | 8,90158.54 | $8,38766 \cdot 27$ | 0,41382.67 | 64 |
| 15 | 0,09699.06 | 8,87473.89 | $8,38365 \cdot 27$ | 0,42029 27 | 65 |
| 16 | 0, 10345.67 | 8,84981 ${ }^{\circ} 9$ | $8,37973.78$ | 0,42675.88 | 66 |
| 17 | 0,10992. 27 | 8,82659 08 | 8,37591-50 | 0,43322.48 | 67 |
| 18 | 0,11638.88 | 8,80486.00 | 8,37218-13 | $0,43969{ }^{\circ} 09$ | 68 |
| 19 | 0,12285.48 | $8,78446 \cdot 37$ | 8,36853*40 | 0,44615.69 | 69 |
| 20 | 0,12932.08 | 8,76526.42 | 8,36497 ${ }^{\text {o1 }}$ | 0,45262.30 | 70 |
| 21 | 0,13578.69 | 8,74714.37 | $8,36148 \cdot 74$ | 0,45908.90 | 71 |
| 22 | 0,14225.29 | $8,73000 \cdot 10$ | $8,35808 \cdot 32$ | 0,46555.50 | 72 |
| 23 | $0,14871.90$ | 8,71374.88 | $8,35475.53$ | $0,47202 \cdot 11$ | 73 |
| 24 | 0,15518.50 | 8,69831 $\cdot 03$ | 8,35150'12 | 0,47848.71 | 74 |
| 25 | 0,16165.11 | $8,6836 \mathrm{r} \cdot 84$ | $8,34831 \cdot 89$ | $0,48495.32$ | 75 |
| 26 | 0,168II 71 | $8,66961 \cdot 41$ | 8,34520.62 | 0,49141.92 | 76 |
| 27 | $0,17458 \cdot 31$ | $8,65624 \cdot 46$ | $8,34216 \cdot 13$ | $0,49788.52$ | 77 |
| 28 | 0,18104.92 | 8,64346*33 | $8,33918 \cdot 21$ | $0,50435 \cdot 13$ | 78 |
| 29 | 0, $1875 \mathrm{I} \cdot 52$ | $8,63122.84$ | 8,33626.68 | 0,51081.73 | 79 |
| 30 | $0,19398 \cdot 13$ | 8,61950:22 | 8,33341•34 | 0,51728.34 | 80 |
| 31 | 0,20044'73 | 8,60825'10 | 8,33062.05 | 0,52374*94 | 81 |
| 32 | 0,20691.34 | $8,59744^{\prime} 40$ | $8,32788 \cdot 65$ | 0,53021•55 | 82 |
| 33 | 0,21337.94 | 8,58705'3.3 | 8,32520:95 | -,53668.15 | O3 |
| 34 | 0,21984.54 | $8,57705.37$ | $8,32258.81$ | 0,54314.75 | 84 |
| 35 | 0,22631-15 | $8,56742 \cdot 20$ | $8,32002 \cdot 07$ | 0,54961-36 | 85 |
| 36 | 0,2327775 | 8,55813.71 | 8,31750.61 | 0,55607.96 | 86 |
| 37 | 0,23924.36 | 8,54917.95 | $8,31504.28$ | 0,56254.57 | 87 |
| 38 | 0,24570'96 | 8,54053.14 | $8,35262.96$ | 0,56901•17 | 88 |
| 39 | 0,25217'56 | 8,53217.62 | $8,31026 \cdot 49$ | 0,5754778 | 89 |
| 40 | 0,25864* 17 | 8,52409.87 | 8,30794.79 | 0,58194*38 | 90 |
| 41 | $0,26510 \cdot 77$ | 8,51628.49 | $8,30567 \times 71$ | $0,58840 \cdot 98$ | 91 |
| 42 | 0,27157.38 | 8,50872.18 | $8,30345^{\circ} 14$ | 0,59487.59 | 92 |
| 43 | 0,27803.98 | 8,50139.68 | 8,3012697 | 0,60134'19 | 93 |
| 44 | 0,28450-59 | 8,49429.90 | 8,29913.08 | 0,60780.80 | 94 |
| 45 | 0,2909719 | 8,48741 78 | 8,29703.39 | 0,61427.40 | 95 |
| 46 | 0,29743.79 | 8,48074:32 | 8,29497.78 | 0,62074.01 | 96 |
| 47 | $0,30390 \cdot 40$ | 8,47426.61 | 8,29296.14 | 0,62720.61 | 97 |
| 48 | 0,3103700 | 8,4679779 | 8,29098.41 | 0,63367.21 | 98 |
| 49 | $0,31683.61$ | 8,46187.03 | 8,289a4*46 | 0,64013.83 | 99 |
| 50 | $0,32330.21$ | 8,45593.57 | $\begin{aligned} & 8,28714 \cdot 24 \\ & 8,17609 \cdot 13 \end{aligned}$ | $0,64660.42$ | $\begin{aligned} & 100 \\ & \text { 10erp. } \end{aligned}$ |


| $1 \frac{6}{8}$ Per Cent. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | Log. F. | Log. $a^{\text {m }}$. | Log. $a^{\text {² }}$. | Log. Fe. | Years |
| 1 | 0,00700.06 | 0,00700.06 | 8,46228•76 | 0,35702.85 | 51 |
| 2 | 0,01400'11 | 9,70945.67 | 8,45687. 59 | 0,36402.90 | 52 |
| 3 | 0,02100'17 | 9,53684.22 | 8,45161.58 | 0,37102.96 | 53 |
| 4 | 0,02800:22 | 9,41537.09 | 8,44650'12 | 0,37803.02 | 54 |
| 5 | 0,03500. 28 | 9,32191-89 | 8,44152.64 | $0,38503.07$ | 5.5 |
| 6 | 0,04200'34 | 9,24618.62 | 8,43668.64 | $0,39203 \cdot 13$ | 56 |
| 7 | 0,04900'39 | 9,18267.86 | 8,43197.57 | 0,39903.18 | 57 |
| 8 | 0,05600-45 | 9,12811.63 | 8,42738.97 | 0,40603.24 | 58 |
| 9 | 0,06300.50 | 9,08038.42 | 8,42292.39 | $0,41303^{\circ} 3^{\circ}$ | 59 |
| 10 | 0,07000. 56 | 9,03803.76 | 8,41857:38 | 0,42003.35 | 60 |
| $1 \pm$ | 0,07700.61 | 9,00004.66 | 8,4143.3.55 | 0,42703.41 | 61 |
| 12 | 0,08400'67 | $8,96565 \cdot 02$ | 8,41020.47 | 0,43403.46 | 62 |
| 13 | $0,60100 \cdot 73$ | 8,93427 09 | 8,40617.81 | 0,44103.52 | 63 |
| 14 | 0,09800:78 | 8,9054, 97 | 8,40225'20 | 0,44803:38 | 64 |
| 15 | $0,10500 \cdot 84$ | 8,87886.05 | 8,39842.30 | 0,45503.63 | 65 |
| 16 | 0,1120089 | 8,85418.64 | 8,39468•79 | 0,46203.69 | 66 |
| 17 | 0,1190095 | 8,8,3120.29 | $8,39104 \cdot 37$ | 0,46903.74 | 67 |
| 18 | 0,12601 01 | 8,80971.52 | 8,38748.73 | 0,47603.80 | 68 |
| 19 | 0,13301-06 | 8,78956.07 | 8,38401 59 | $0,48303.85$ | 69 |
| 20 | 0,14001*12 | 8,77060.16 | 8,38062'69 | 0,49003.91 | 79 |
| 21 | 0,14701'17 | 8,75272 ${ }^{\circ}$ - | 8,3773'•79 | 0,49703.97 | 71 |
| 22 | 0,15401.23 | 8,73581.51 | 8,37408.61 | 0,50404.02 | 72 |
| 23 | 0,16101.28 | 8,71979.91 | 8,37092'93 | 0,51104.08 | 73 |
| 24 | 0,16801 34 | 8,70459.55 | 8,36784*51 | 0,51804'13 | 74 |
| 25 | 0,17501'40 | 8,69013.73 | $8,36483 \cdot 15$ | 0,52504.19 | 75 |
| 26 | 0,18201.45 | $8,67636.51$ | 8,36188.64 | 0,53204.25 | 76 |
| 27 | 0,18gor 51 | $8,66322 \cdot 65$ | $8,35900 \cdot 78$ | 0,53904:30 | 77 |
| 28 | 0,19601.56 | 8,65067.47 | 8,35619:36 | $0,54604.36$ | 78 |
| 29 | 0,20301.62 | 8,63866.80 | $8,35344^{2} 23$ | 0,55304*41 | 79 |
| 30 | 0,21001 68 | 8,62716-86 | 8,35075 18 | 0,56004*47 | 80 |
| 31 | 0,21701•73 | 8,61614.29 | 8,34812.05 | -, 56704.5 | 81 |
| 32 | 0,22401 79 | 8,60555.99 | 8,34554.67 | 0,57404.58 | 82 |
| 33 | 0,23Ior.84 | 8,595.39'20 | 8,34,302.89 | 0,58104.64 | 8.3 |
| 34 | 0,23801 90 | $8,58561 \cdot 38$ | $8,34056 \cdot 55$ | 0,58804.69 | 84 |
| 35 | 0,24501'96 | 8,57620:21 | 8,33815:50 | 0,59504*75 | 85 |
| 36 | 0,25202'01 | 8,56713'59 | 8,33579.60 | 0,60204.80 | 86 |
| 37 | 0,25902'07 | 8,55839.57 | 8,33348.74 | 0,60g04 86 | 87 |
| 38 | 0,26602'12 | 8,54996.37 | 8,33122'74 | 0,61604.92 | 88 |
| 39 | 0,27302.18 | $8,54182 \cdot 32$ | 8,32901'50 | $0,62304 \cdot 97$ | 89 |
| 40 | $0,28002 \cdot 23$ | 8,53395'91 | 8,32648.89 | 0,63005.03 | 90 |
| $4!$ | 0,28702.29 | 8,52635 74 | 8,32472.80 | 0,63705.08 | 91 |
| 42 | $0,29402 \cdot 35$ | $8,51900 \cdot 48$ | 8,32265.12 | $0,64405.14$ | 92 |
| 43 | 0,30102.40 | 8,51188.94 | $8,32061 \cdot 72$ | $0,65105 \cdot 19$ | 93 |
| 44 | 0,30802.46 | 8,50499:97 | $8,31862 \cdot 48$ | $0,65805.25$ | 94 |
| 45 | $0,31502 \cdot 51$ | $8,49832.51$ | $8,31667.34$ | 0,66505.31 | 95 |
| $+6$ | 0,32202:57 | 8.49185. 59 | 8,31476.15 | 0,67205.36 | 96 |
| 47 | $0,32902 \cdot 63$ | 8,48558.30 | 8,31288.83 | 0,67905.42 | 97 |
| 48 | 0,33602.68 | 8,47949*75 | 8,31105.32 | 0,68605.47 | 98 |
| 49 | $0,34302 \cdot 74$ | 8,473.59 15 | 8,30925.47 | $0,69305 \cdot 53$ | 99 |
| 9 | 0,35002.79 | 8,46785'72 | $8,30749^{\circ} 23$ $8,21085 \cdot 34$ | $0,70005 \cdot 59$ | $\begin{aligned} & 100 \\ & \text { Perp. } \end{aligned}$ |

13
Per Cent.

| Years | Log. ${ }^{4}$. | Log. $a^{n}$. | Log. $a^{*}$. | Log. ${ }^{2}$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,00753.44 | 0,00753.44 | 8,47425*55 | 0,38425'53 | 51 |
| 2 | 0,01506.88 | 9,71025.53 | 8,46903. 59 | 0,39178.97 | 52 |
| 3 | 0,02260'33 | 9,53790.40 | 8,46396. 4 | 0,39932.41 | 53 |
| 4 | 0,03013.77 | 9,41669.43 | 8,45904.12 | 0,40685.86 | 54 |
| 5 | 0,03767.21 | 9,32350.26 | 8,45425.46 | 0,41439 30 | 55 |
| 6 | 0,04520.65 | 9,24802 86 | 8,44960'11 | 0,42192'74 | 56 |
| 7 | 0,0527409 | 9,18477.83 | 8,44,507.55 | 0,42946.18 | 57 |
| 8 | 0,0602753 | 9,13047'18 | 8,44067.34 | 0,43699'62 | 58 |
| 9 | 0,06780.98 | 9,08299 ${ }^{\circ}$ | 8,43639 01 | 0,44453.07 | 59 |
| 10 | 0,07534*42 | 9,04090.03 | 8,43222.12 | 0,45206.51 | 60 |
| 11 | 0,08287.86 | 9,00316.04 | 8,42816.25 | 0,45959.95 | 61 |
| 12 | 0,09041 30 | 8,96901.39 | 8,42421.04 | 0,46713.39 | 62 |
| 13 | 0,09794*74 | 8,93788.29 | 8,42036.10 | $0,47466 \cdot 83$ | 6.3 |
| 14 | 0,10548.19 | 8,90931.86 | 8,41661.07 | 0,48220. 27 | 64 |
| 15 | 0,11,301'63 | $8,88296 \cdot 48$ | K,4129562 | $0,48973.72$ | 65 |
| 16 | $0,12055.07$ | $8,85853.47$ | 8,40939*42 | $0,49727 \cdot 16$ | 66 |
| 17 | 0,12808.51 | 8,83579:35 | 8,40592.18 | $0,50480 \cdot 60$ | 67 |
| 18 | 0,13561.95 | 8,81454.67 | 8,40253'58 | 0,51234.04 | 68 |
| 19 | 0,14315.39 | 8,79463.17 | 8,39923.37 | $0,51987.48$ | 69 |
| 20 | 0,15068.84 | 8,77591•04 | 8,39601.25 | 0,52740'93 | 70 |
| 21 | 0,15822.28 | 8,75826.56 | 8,39287.02 | 0,53494*37 | 71 |
| 22 | 0,16575 ${ }^{7}$ | 8,74159.57 | 8,38980:37 | 0,54247.81 | 72 |
| 23 | 0,17329•16 | 8,72581.33 | 8,38681 08 | 0,55001.25 | 73 |
| 24 | 0,18082 60 | 8,71084.18 | 8,38388.05 | 0,55754.69 | 74 |
| 25 | $0,18836 \cdot 4$ | $8,69661 \cdot 43$ | 8,38103.74 | 0,56508.13 | 75 |
| 26 | 0,19589•49 | 8,68307.13 | 8,37825.25 | 0,57261-58 | 76 |
| 27 | 0,20342.93 | $8,67016 \cdot 03$ | 8,37553.26 | $0,58015.02$ | 77 |
| 28 | $0,21096 \cdot 37$ | $8,65783 \cdot 49$ | 8,37287.63 | $0,58768 \cdot 46$ | 78 |
| 29 | 0,21849.81 | 8,64605.30 | 8,37028.14 | 0,59521.90 | 79 |
| 30 | 0,22603.25 | 8,63477'7¢ | 8,36774.59 | 0,60275.34 | 80 |
| 31 | 0,23356\% 0 | 8,62397.31 | 8,36526.83 | 0,61028•78 | 81 |
| 32 | 0,24110.14 | 8,61361 06 | 8,36284.73 | $0,61782 \cdot 23$ | 82 |
| 33 | 0,24863.58 | 8,60366. 17 | 8,36048'09 | 0,62535.67 | 83 |
| 34 | 0,25617.02 | 8,59410'10 | 8,35816.78 | 0,63289 11 | $8{ }_{4}$ |
| 35 | $0,26370 \cdot 46$ | 8,58490. 54 | 8,35590.63 | 0,64042*55 | 8. |
| 36 | 0,27123.90 | $8,57605 \cdot 41$ | 8,35369*49 | 0,64795'99 | 80 |
| 37 | 0,27877*35 | 8,56752.71 | 8,35 ${ }^{1} 53 \cdot 28$ | 0,65549*44 | 87 |
| 38 | 0,28630'79 | 8,55930.68 | 8,34941-82 | 0,66302.88 | 88 |
| 39 | 0,29384. 23 | 8.55137 .67 | 8,34734.99 | $0,67056 \cdot 32$ | 89 |
| 40 | $0,30137 \cdot 67$ | 8,54372.16 | 8,34532.67 | 0,67809'76 | 90 |
| 41 | 0,30891-11 | 8, 53632.73 | 8,34334'75 | 0,68563.20 | 91 |
| 42 | $0,31644 \cdot 56$ | 8,52918.09 | 8,34141-12 | $0,69316.64$ | 92 |
| 43 | $0,32398 \cdot 00$ | 8,52227.03 | 8,33951.65 | 0,70070'09 | 93 |
| 44 | 0,33151.44 | 8,51558'38 | 8,33766.23 | 0,70823.53 | 94 |
| 45 | 0,33904.88 | 8,50911.12 | 8,33584\%77 | $0,71576 \cdot 97$ | 95 |
| 46 | 0,34658.32 | 8,50284.25 | 8,33407.18 | $0,72330^{\circ} 41$ | 90 |
| 47 | 0,35411'76 | 8,49676.86 | 8,332,33.34 | $0,73083 \cdot 85$ | 97 |
| 48 | 0,36165.21 | 8,49088.08 | $8,33063{ }^{\circ} 19$ | 0,73837.30 | 98 |
| 49 | 0,36918.65 | 8,48517 ${ }^{10}$ | 8,32896.56 | $0,74590 \cdot 74$ | 99 |
| 50 | $0,37672.09$ | 8,47963 ${ }^{16}$ | $\begin{aligned} & 8,32733 \cdot 42 \\ & 8,24303 \cdot 80 \end{aligned}$ | 0,75344 ${ }^{18}$ | $\left.\right\|_{100} ^{100}$ |

$1 \frac{7}{8}$ Per Cent.

| Years | Log. ${ }^{\text {m}}$. | Log. $a^{n}$. | Log. $a^{\prime \prime}$. | Log. $r^{\prime \prime}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,00806.76 | 0,00805 76 | 8,48607 21 | 0,4114487 | 51 |
| 2 | 0,01613.52 | 9,71105.27 | 8,48103.92 | 0,41951.63 | 52 |
| 3 | $0,02420 \cdot 29$ | $9,53896.40$ | $8,47615.50$ | 0,42758.40 | 53 |
| 4 | $0,03227.05$ | 9,41801.54 | $8,47141 \times 35$ | 0,43565.16 | 54 |
| 5 | $0,04033.81$ | 9,32508.31 | 8,46680.90 | 0,44371.92 | 55 |
| 6 | $0,04840^{\circ} 57$ | 9,24986.69 | 8,46233.64 | 0,45178.68 | 56 |
| 8 | 0,05647.34 | 9,18687.27 | 8,45799.04 | 0,45985.44 | 57 |
| 8 | 0,06454.10 | 9,13282'10 | 8,45376.62 | $0,46792 \cdot 21$ | 58 |
| 9 | $0,=726086$ | 9,08559'62 | 8,44965.94 | 0,47598.97 | 59 |
| 10 | 0,08067.62 | 9,04375:38 | 8,44566.57 | $0,48405 \cdot 73$ | 60 |
| 11 | 0,08874.38 | 9,00626.40 | 8,44178.08 | 0,49212.49 | 61 |
| 12 | $0,09681 \cdot 15$ | 8,97236'58 | 8,43800.08 | $0,50019 \cdot 25$ | 62 |
| 13 | $0,10487.91$ | $8,94148 \cdot 14$ | 8,43432.22 | 0,50826.02 | 63 |
| 14 | 0, 11294.67 | $8,91316.21$ | 8,43074 ${ }^{1} 3$ | $0,51632 \cdot 78$ | 64 |
| 15 | 0,12101.43 | 8,88705.19 | 8,42725.47 | 0,52439.54 | 65 |
| 16 | 0, $12908 \cdot 19$ | 8,86286.36 | $8,42385.95$ | 0,53246.30 | 66 |
| 17 | $0,13714.96$ | 8,84036.28 | 8,42055.23 | $0,54053.07$ | 67 |
| 18 | $0,14521.72$ | $8,81935 \cdot 49$ | 8,41733 ${ }^{\circ}$ | $0,54859.83$ | 68 |
| 19 | 0, $15328 \cdot 48$ | $8,79967.69$ | 8,41419.08 | 0,55666.59 | 69 |
| 20 | $0,16135^{\circ} 24$ | 8,78119.14 | 8,41113'08 | 0,56473.35 | 70 |
| 21 | $0,16942{ }^{\circ} \mathrm{I}$ | 8,76378.05 | 8,40814.80 | 0,57280.11 | 71 |
| 22 | 0,17748.77 | 8,74734 31 | $8,40524^{\circ} 00$ | 0,58086.88 | 72 |
| 23 | 0,18555.53 | 8,73179'16 | $8,40240{ }^{\circ}{ }^{2}$ | 0,58893.64 | 73 |
| 24 | 0,19362.29 | $8,71704.94$ | 8,39963'85 | 0,59700'40 | 74 |
| 25 | 0,20169 05 | $8,70304.95$ | 8,39694 07 | 0,60507.16 | 75 |
| 26 | 0,20975.82 | 8,68973 27 | 8,39430.88 | 0,61313.92 | 76 |
| 27 | 0,21782.58 | 8,6770465 | 8,39174 08 | 0,62120.69 | 77 |
| 28 | $0,22589.34$ | $8,66494 \cdot 41$ | 8,38923.47 | 0,62927*45 | 78 |
| 29 | 0,23396' ${ }^{\circ}$ | 8,65338.36 | 8,38678-87 | 0,63734.21 | 79 |
| 30 | $0,24202 \cdot 87$ | 8,64232.76 | 8,38440'11 | 0,64540'97 | 80 |
| 31 | 0,25009.63 | 8,63174.21 | 8,38207.02 |  | 81 |
| 32 | 0,25816.39 | $8,62159.65$ | 8,37979.41 | $0,66154.50$ | 82 |
| 33 | 0,26623.15 | $8,61186.28$ | 8,37757-16 | 0,66961.26 | 83 |
| 34 | 0,27429 ${ }^{\text {a }}$ | 8,60251 60 | 8,37540\%9 | 0,67768.02 | 84 |
| 35 | 0,28236.68 | 8,59353.27 | 8,37328.06 | 0,68574.78 | 85 |
| 36 | 0,2904'344 | 8,58489 19 | 8,37120\%95 | 0,69381 55 | 86 |
| 37 | 0,29850'20 | 8,57657.41 | 8,36918.60 | 0,70188.31 | 87 |
| 38 | 0,3c656.96 | $8,568.56 \cdot 14$ | 8,36720.89 | 0,70995.07 | 88 |
| 39 | $0,31463.72$ | $8,56083.74$ | 8,36527.70 | 0,71801.83 | 89 |
| 40 | 0,32270*49 | 8,55338*71 | 8,36338-88 | 0,72608.60 | 90 |
| 41 | 0,33077 ${ }^{\circ} 25$ | 8,54619.59 | 8,36154:34 | 0,73415:36 | 91 |
| 42 | 0,33884*OI | 8,53925.09 | 8,35973.95 | 0,74222.12 | 92 |
| 43 | 0,34690.77 | 8,53254 ${ }^{\circ}$ 이 | 8,35797.61 | 0,75028.88 | 93 |
| 44 | 0,35497.54 | $8,52605.23$ | 8,35625.21 | 0,75835.64 | 94 |
| 45 | 0,36304.30 | 8,51977.69 | 8,35456.66 | 0,76642.41 |  |
| 46 | 0,37111106 | $8,51370 \cdot 37$ | 8,35291.82 | 0,77449*17 | 96 |
| 47 |  | 8,50782.39 | 8,35130.63 | 0,78255.93 | 97 |
| 48 | 0,38724.58 | $8,50212 \cdot 85$ | $8,34972.98$ | 0,79062.69 | 98 |
| 49 | $0,39531 \cdot 35$ | 8,49660.98 | 8.344818 .80 | 0,79869-45 | 99 |
| 50 | $0,4033^{8.11}$ | 8,49126.01 | $\begin{aligned} & 8,34667 \cdot 98 \\ & 8,27300 \cdot 13 \end{aligned}$ | 0,80676.22 | $\left\lvert\, \begin{aligned} & 99 \\ & \text { 100 } \\ & \text { Perp. } \end{aligned}\right.$ |

For explanation see pp. 216-228

2 Per Cent.

| Years | Log. ${ }^{\text {m. }}$ | Log. $a^{\text {n }}$. | Log, $a^{x}$. | Log. ${ }^{\text {r }}$. | Year: |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,00860'02 | 0,00860.02 | 8,49773.88 | 0,43860.88 | 51 |
| 2 | $0,01720 \cdot 03$ | 9,71184.90 | 8,49288.73 | 0,44720.89 | 52 |
| 3 | 0,02580.05 | 9,54002.23 | 8.48818.28 | 0,45580.91 | 53 |
| 4 | 0,03440.07 | 9,41933:40 | 8,4835ı 96 | 0,46440'93 | 54 |
| 5 | 0,04300.09 | 9,32666.02 | 8,47919 18 | 0,47300.94 | 55 |
| 6 | 0,0516010 | 9,25170.10 | 8,47469\%44 | 0,48160.96 | 56 |
| 7 | 0,06020'12 | 9,18896.21 | 8,47072 20 | 0,49020.98 | 57 |
| 8 | 0,06880.14 | 9,13516:38 | 8,46667. 0 | 0,49881.00 | 58 |
| 9 | 0,07740'15 | 9,08819.08 | 8,46273:38 | 0,50741 ${ }^{\circ} \mathrm{O}$ | 59 |
| 10 | 0,08600.17 | 9,04659.87 | 8,45890.93 | 0,51601.03 | 6 |
| 11 | 0,09460'19 | 9,00935 71 | 8,45519 19 | 0,52461 05 | 61 |
| 12 | $0,10320 \cdot 21$ | 8,97570.56 | 8,45 57.82 | 0,53321 $0^{\circ}$ | 62 |
| 13 | 0,11180.22 | $8,94506.63$ | 8,44806.42 | 0,54181 08 | 63 |
| 14 | 0,12040'24 | $8,91699.05$ | 8,44464*66 | 0,55041'10 | 64 |
| 15 | 0,12900.26 | 8,89112'17 | 8,44132.18 | 0,55901•12 | 65 |
| 16 | 0,13760.27 | 8,8671735 | 8,4.3808.68 | $0,56761 \cdot 13$ | 66 |
| 17 | 0,14020.29 | $8,84491.09$ | $8,43493 \cdot 85$ | 0,57621.15 | 67 |
| 18 | $0,15480 \cdot 31$ | 8,82413.95 | 8,43187.38 | $0,58481 \cdot 17$ | 68 |
| 19 | $0,16340 \cdot 33$ | 8,80469.66 | 8,42880 01 | 0,59341'19 | 69 |
| 20 | 0,17200:34 | 8,78644*42 | 8,42598'47 | 0,60201 20 | 70 |
| 21 | 0,18060.36 | 8,76926.48 | 8,42315.50 | 0,61061 22 | 71 |
| 22 | $0,18920: 38$ | 8,75305.73 | 8,42039.86 | 0,61921.24 | 72 |
| 23 | 0,19780.40 | 8,73773.40 | 8,41771 31 | 0,62781.25 | 73 |
| 34 | $0,20640 \cdot 41$ | 8,72321.83 | 8,41509.63 | 0,63641 27 | 74 |
| 25 | $0,21500 \cdot 43$ | 8,70944.33 | $8,41254.59$ | 0,64501 29 | 75 |
| 26 | $0,22360 \cdot 45$ | 8,69634'97 | 8,41006.01 | 0,65361 31 | 76 |
| 27 | $0,23220 \cdot 46$ | 8,68388'50 | 8,40763.67 | 0,96221 32 | 77 |
| 28 | 0,24080•48 | $8,67200 \cdot 24$ | 8,40527.39 | $0,67081 \cdot 34$ | 78 |
| 29 | $0,24940 \cdot 50$ | 8,66066*02 | 8,40296.99 | 0,6794136 | 79 |
| 30 | 0,25800'52 | 8,64982'07 | 8,40072.29 | 0,68801.37 | 80 |
| 31 | 0,26660. 53 | 8,63945'01 | 8,39853 11 | 0,6966r-39 | 81 |
| 32 | 0,27520.55 | 8,62951 77 | 8,39639.29 | 0,70521.41 | 82 |
| 33 | $0,28380 \cdot 57$ | 8,6190958 | $8,39430 \cdot 69$ | 0,71381-43 | 83 |
| 34 | 0,29240.58 | 8,61085.89 | 8,39227'14 | 0,72241*44 | 84 |
| 35 | 0,30100.60 | 8,60208 40 | 8,39028.51 | 0,73101.46 | 85 |
| 36 | 0,30960.62 | 8,59364.99 | $8,38834 \cdot 65$ | $0,73061 \cdot 48$ | 86 |
| 37 | 0,31820.64 | 8,58553.72 | 8,38645.44 | 0,74821-49 | 87 |
| 38 | $0,32680 \cdot 65$ | 8,57772.80 | 8,38460'72 | 0,75681.51 | 88 |
| 39 | 0,33540'67 | 8,57020:59 | 8,38280. 38 | 0,76541.53 | 89 |
| 40 | 0,34400.69 | 8,56295.56 | 8,38104:31 | 0,7740155 | 90 |
| 41 | 0,35260'70 | 8,55596.32 | 8,37932.39 | 0,78261.56 | 91 |
| 42 | 0,36120'72 | 8,54921.53 | $8,37764{ }^{\circ} 8^{8}$ | 0,79121.58 | 92 |
| 43 | $0,36980 \cdot 74$ | 8,54270\%02 | 8,37600.50 | 0,79981.60 | 93 |
| 44 | 0,37840.76 | 8,53640.61 | 8,37440.34 | $0,80841{ }^{\circ} 61$ | 94 |
| 45 | 0,38700.77 | $8,53032.30$ | $8,37283 \cdot 88$ | $0,81701.63$ | 95 |
| 46 | 0,39560.79 | 8,52444.06 | 8,37131 ${ }^{\circ} \mathrm{O}$ | 0,82561.65 | 96 |
| 47 | $0,40420 \cdot 81$ | 8,5187497 | 8,36981 72 | 0,83421.67 |  |
| 48 | 0,41280.82 | 8,51324.20 | $8,36835 \cdot 82$ | 0,84281.68 | 98 |
| 49 | 0,42140.84 | 8,50790'93 | 8,36693.25 | 0,8514170 | 99 |
| 50 | 0,43000.86 | 8,50274*40 | $\begin{aligned} & 8,36553^{\circ} 93 \\ & 8,30103^{\circ} 00 \end{aligned}$ | 0,86001772 | $\left\lvert\, \begin{aligned} & 100 \\ & \text { Perp } \end{aligned}\right.$ |

2 $\frac{1}{8}$ Per Cent.

| Years | Log. ${ }^{\text {ata }}$ | Log. $a^{\text {m }}$. | Log. $a^{\text {m }}$. | Log. ${ }^{\text {re}}$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,00913.21 | 0,00913.21 | 8,50925.70 | $0,46573.55$ | 51 |
| 2 | $0,01826.41$ | 0,71264.41 | 8,50458.14 | 0,47486.76 | 52 |
| 3 | 0,02739.62 | 9.54107 .89 | 8,5000514 | 0,4839997 | 53 |
| 4 | $0,03652.83$ | 9.4206501 | $8,49566 \cdot 10$ | 0,49313.18 | 54 |
| 5 | $0,04566.03$ | 9.32823 .42 | $8,49140 \cdot 45$ | $0,50226.38$ | 55 |
| 6 | 0,05479.24 | 9,25353.10 | 8,48727.66 | 0,51139.59 | 56 |
| 7 | 0,06392.45 | 9,1910.4.63 | 8,4832\% 23 | 0,52052.80 | 57 |
| 8 | 0,07305 66 | 9,13750'04 | 8,47938.67 | 0,52966.00 | 58 |
| 9 | 0,08218.86 | 9,09077 79 | 8,47561.55 | 0,53879.21 | 59 |
| 10 | 0,09132.07 | 9,04943.46 | 8,47195*41 | 0,54792.42 | 60 |
| 11 | $0,10045 \cdot 28$ | 0,01244.01 | $8,468.39 \cdot 85$ | 0,55705.62 | 61 |
| 12 | 0,10058.48 | 8,97003:37 | 8,46494.50 | 0,56618.83 | 62 |
| 13 | $0,1187 \mathrm{l}$ | 8,24863.78 | 8,46158.98 | 0,57532.04 | 63 |
| 14 | 0,12784,90 | $8.02080 \cdot 35$ | $8,45832.92$ | $0,58445.24$ | 64 |
| 15 | $0,13698 \cdot 10$ | 8,8951746 | 8,45,16.00 | 0,59358.45 | 65 |
| 6 | 0,1461131 | 8.87146 .43 | 8,4520\%.90 | 0,60271 66 | 66 |
| 17 | 0, 15524.52 | 8,84943'79 | 8,44908.33 | 0,61184.87 | 67 |
| 18 | 0,15437*73 | 8,82890'09 | 8,44616.96 | 0,62098.07 | 68 |
| 19 | 0,17350.93 | 8,80969.06 | 8,44333.55 | 0,6,3011•28 | 69 |
| 20 | $0,18264 \cdot 14$ | 8,79166.90 | 8,44057.81 | 0,63924'49 | 70 |
| 21 | 0,19177.35 | 8,77471.88 | 8,43780.50 | 0,64837.69 | 71 |
| 22 | 0,20090.55 | 8,75873.85 | $8,43528 \cdot 36$ | 0,65750.90 | 72 |
| 23 | $0,21003 \cdot 76$ | 8,74364.08 | 8,43274 17 | 0,66664'II | 73 |
| 24 | 0,21916.97 | 8,72934.89 | 8,43026.70 | 0,67577 31 | 74 |
| 25 | 0,22830.17 | 8,71579.57 | 8,42785'75 | $0,68490 \cdot 52$ | 75 |
| 26 | $0,23743^{\circ} 3^{8}$ | 8,70292.24 | 8,42551.09 | 0,69403'73 | 76 |
| 27 | 0,24656.59 | $8,69067 \cdot 61$ | 8,42322.54 | 0,70316.94 | 77 |
| 28 | 0,25569'79 | 8,67901 02 | 8,42099.91 | 0,71230'14 | 78 |
| 29 | $0,26483.00$ | 8,66788.30 | 8,41883.00 | 0,72143'35 | 79 |
| 30 | 0,27396.21 | 8,65725.67 | 8,41671.66 | 0,73056.56 | 80 |
| 31 | $0,28300^{\circ} 42$ | 8,64709\%75 | 8,41465:70 | 0,73960*76 | 81 |
| 32 | 0,29222.62 | 8,63737-48 | 8,41264.97 | 0,74882.97 | 82 |
| 33 | 0,30135.83 | 8,62806.09 | 8,41069.32 | 0,75796.18 | 83 |
| 34 | 0,31049.04 | 8,61913.02 | 8,40878.59 | 0,7670938 | 84 |
| 35 | 0,31962.24 | 8,61056.00 | 8,40692.63 | 0,77622.59 | 85 |
| 36 | 0,32875.45 | 8,60232.86 | 8,4051131 | 0,78535.80 | 86 |
| 37 | 0,33788.66 | 8,59441\% 0 | 8,40334*50 | 0,79449.00 | 87 |
| 38 | 0,34701•86 | 8,58680'73 | 8,40162.5 | 0,80362.21 | 88 |
| 39 | 0,35615 '07 | $8,57948 \cdot 28$ | 8,39993.86 | 0,81275.42 | 89 |
| 40 | $0,36528 \cdot 28$ | $8,57242 \cdot 85$ | 8,39829'79 | $0,82188 \cdot 63$ | 90 |
| 41 | 0,37441.48 | 8,56563.03 | 8,39669.74 | $0,83101 \cdot 83$ | 91 |
| 42 | 0,38354.69 | $8,55907.50$ | 8,39513.59 | $0,84015.04$ | 92 |
| 43 | 0,39267-90 | $8,55275.08$ | 8,39361 23 | $0,84028 \cdot 25$ | 93 |
| 44 | 0,40181-11 | $8,54664 \cdot 60$ | 8,39212.54 | $0,85841.45$ | 94 |
| 45 | 0,41094'31 | $8,54075{ }^{\circ} 03$ | 8,39067.46 | 0,86754.66 | 95 |
| 46 | 0,42007.52 | $8,53505.38$ | 8,38925.85 | 0,8766787 | 96 |
| 47 | 0,42920'73 | $8,52954{ }^{\circ} 74$ | 8,38787.6.3 |  | 97 |
| 48 | 0,43833.93 | $8,52422 \cdot 22$ | 8,38652.73 | 0,89494.28 | 98 |
| 49 | 0,44747'14 | 8,51907.05 | 8,38521 04 | 0,90407.49 | 99 |
| 50 | 0,45660'35 | 8,51408.44 | $8,38392 \cdot 46$ $8,32735 \cdot 89$ | 0,91320'70 | $\left\lvert\, \begin{aligned} & 100 \\ & \text { Perp } \end{aligned}\right.$ |

## $2 \frac{1}{4}$ Per Cent.

| Years | Log. $r^{\text {m }}$. | Log. $\boldsymbol{a}^{\text {n }}$. | Log. $a^{n}$. | Log. 5. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 5 | 0,00966.33 | 0,00966:33 | 8,52062'79 | 0,49282.92 | 51 |
| 2 | 0,01932.66 | 9,71343.81 | 8,51612.32 | $0,50249 \cdot 25$ | 52 |
| 3 | 0,02899.00 | 9,54213.37 | 8,51176.23 | 0,51215.58 | 53 |
| 4 | $0,03865.33$ | 9,42196-39 | 8,50753.94 | 0,52181*91 | 54 |
| 5 | $0,04831 \cdot 66$ | 9,32980.50 | 8,50344.87 | $0,53148 \cdot 24$ | 54 |
| 6 | 0,05797.99 | 9,25535.68 | 8,49948.50 | 0,54114.57 | 56 |
| 7 | 0,06764:32 | 9,19312.53 | 8,49564'32 | 0,55080.91 | 57 |
| 8 | $0,07730 \cdot 65$ | 9,13983.07 | 8,49191.85 | 0,56047 24 | 58 |
| 9 | 0,08696.99 | 9,09335.76 | 8,48830-64 | 0,57013.57 | 59 |
| 10 | 0,09663:32 | 9,05226-17 | 8,48480.26 | 0,57979.90 | 60 |
| 11 | $0,10629.65$ | 9,01551-27 | 8,48140.31 | 0,58946.23 | 61 |
| 12 | 0,11595.98 | 8,98235.00 | 8,47810.38 | $0,59912 \cdot 56$ | 62 |
| 13 | 0,12562.31 | 8,952 19.58 | 8,47490.13 | 0,60878.90 | 63 |
| 14 | 0,13528.64 | 8,92460.13 | 8,47179•18 | 0,61845.23 | 64 |
| 15 | $0,14494 \cdot 98$ | 8,89921 ${ }^{\text {- }}$ 3 | 8,46877.22 | 0,62811 56 | 65 |
| 16 | $0,15461 \cdot 31$ | 8,87573.61 | 8,46583.92 | 0,63777.89 | 66 |
| 17 | 0,16427.64 | 8,85394*38 | 8,46298.99 | $0.64744^{\circ} 2$ | 67 |
| 18 | 0, 17393.97 | $8,83363.92$ | 8,46022.11 | 0,65710.55 | 68 |
| 19 | $0,18360 \cdot 30$ | 8,81465.92 | 8,45753 ${ }^{\circ}$ | 0,66676.89 | 69 |
| 20 | $0,19326.63$ | 8,79686.61 | 8,45491*46 | $0,67643^{\circ} 22$ | 70 |
| 21 | 0,20292.9\% | 8,78014.23 | 8,45237.16 | 0,68609.55 | 71 |
| 22 | 0,21259.30 | 8,76438.69 | 8,44989.91 | 0,69575.88 | 72 |
| 23 | $0,22225.63$ | 8,74951•19 | 8,44749 44 | 0,70542.21 | 73 |
| 24 | 0,23191.96 | 8,73544*10 | 8,44515.54 | 0,71508.54 | 74 |
| 25 | 0,24158.29 | 8,722 10.71 | 8,44288.00 | 0,72474.88 | 75 |
| 26 | 0,25124.62 | 8,70945*99 | 8,44066.62 | 0,73441 21 | 76 |
| 27 | 0,26090'96 | 8,69742'01 | 8,4.3851-20 | 0,74407.54 | 77 |
| 28 | 0,27057'29 | 8,68596779 | 8,43641-5.3 | 0,75373.87 | 78 |
| 29 | 0,28023*62 | 8,67,505.22 | 8,43437* 47 | $0,76340^{\circ} 20$ | 79 |
| 30 | $0,28989.95$ | 8,66463.57 | 8,43238.82 | 0,77306.53 | 80 |
| 31 | 0,299,56. 28 | 8,65468.47 | 8,43045.41 | 0,78272.87 | 81 |
| 32 | $0,30922.61$ | 8,64516.82 | 8,42857 08 | 0,79239.20 | 82 |
| 33 | 0,31888.95 | 8,63605.86 | 8,42673.60 | 0,80205.53 | 83 |
| 34 | $0,32855 \cdot 28$ | 8,62733.05 | 8,42495.08 | $0,81171.86$ | 84 |
| 35 | $0,33821.61$ | 8,61896-08 | 8,42321.10 | 0,821,3819 | 85 |
| 36 | 0,34787.94 | 8,61092 85 | 8,42151.63 | 0,83104.52 | 86 |
| 37 | 0,35754.27 | 8,60321.40 | 8,41986.5.3 | 0,84070.86 | 87 |
| 38 | 0,36720'60 | 8,59579 ${ }^{6}$ | 8,41825.66 | 0,850.37 19 | 88 |
| 39 | 0,37686-94 | 8,58866.87 | 8,41668.90 | 0,86003.52 | 89 |
| 40 | $0,38653 \cdot 27$ | 8,58180.6ı | 8,41516.13 | $0,86969.85$ | 90 |
| 41 | 0,39619.60 | 8,57519.79 | 8,41367.26 | 0,87936.18 | 91 |
| 42 | $0,40585 \times 9.3$ | 8,56883.09 | 8,41222.14 | 0,88002.51 | 92 |
| 43 | $0,41552 \cdot 26$ | $8,56269^{\circ} 29$ | 8,41080.69 | 0,89868.85 | 93 |
| 44 | 0,42518.59 | 8,55677 ${ }^{28}$ | 8,40942'79 | 0,90835'18 | 94 |
| 45 | 0,43484.93 | 8,55106\%1 | 8,40808.36 | 0,91801-51 | 95 |
| 46 | 0,44451-26 | 8,54554.47 | 8,40677.28 | 0,92767.84 | 96 |
| 47 | 0,45417'59 | 8,54021 77 | 8,40549.46 | 0,93734.17 | 97 |
| 48 | 0,46383.92 | 8,5,3507'03 | 8,40424 83 | 0,94700'50 | 98 |
| 49 |  | 8,53009 45 | 8,40303.28 | 0,95666-84 | 99 |
| 50 | $0,48316 \cdot 58$ | 8,52528.28 | $\begin{aligned} & 8,40184 \cdot 73 \\ & 8,35218 \cdot 25 \end{aligned}$ | 0,96633.17 | $\left\lvert\, \begin{aligned} & 100 \\ & \text { IOerp } \end{aligned}\right.$ |

$2 \frac{3}{8}$ Per Cent.

| Yearb | Log. ${ }^{\text {peb }}$ | Log. $a^{\prime \prime}$. | Log. $a^{n}$. | Log. $r^{n}$. | Year |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0,01019.39 | 0,01019.39 | 8,53185.29 | 0,51988.97 | 51 |
| 2 | $0,02038 \cdot 78$ | 9,71423.09 | $8,52751.40$ | $0,53008 \cdot 36$ | 52 |
| 3 | 0,03058•17 | 9,54318.69 | $8,52331{ }^{\circ}{ }^{2}$ | 0,54027.75 | 53 |
| 4 | $0,04077 \cdot 57$ | 9,42327.52 | $8,51925.65$ | 0,55047'14 | 54 |
| 5 | 0,05096.96 | 9,33137.25 | $8,51532 \cdot 64$ |  | 55 |
| 6 | $0,06116.35$ | 9,25717.86 | $8,51152 \cdot 15$ $8,50783.67$ |  | 5 |
| 7 | $0,07135{ }^{\prime} 74$ $0,08155.13$ | 9,19519.91 $9,14215.48$ | 8,5078367 $8,50426 \cdot 73$ | $0,5810.31$ 0,59124 | 58 |
| 9 | 0,09174.52 | 9,09592.97 | 8,5008089 | 0,60144•10 | 59 |
| 10 | 0,10193.91 | 9,05508.01 | 8,49745'71 | 0,61163.49 | 60 |
| 11 | 0,11213.31 | 9,01857.51 | 8,49420'78 | 0,62182.88 | 61 |
| 12 | 0,12232\% ${ }^{\text {0 }}$ | 8,98565*46 | $8,49105^{\prime \prime}{ }^{2}$ | 0,63202.27 | 62 |
| 13 | 0,13252*09 | 8,95574.04 | 8,48800'16 | 0,64221.66 | 63 |
| 14 | 0,14271-48 | $8,92838 \cdot 40$ | $8,48503 \cdot 75$ | 0,65241.05 |  |
| 15 | $0,15290 \cdot 87$ $0,16310 \cdot 26$ | $8,90322.91$ $8,87998.90$ | $8,48216 \cdot 16$ $8,47937 \cdot 06$ | $0,60260 \cdot 45$ 0,6727984 | 65 |
| 17 | 0,16310.26 | $88,85842 \cdot 88$ | 8,47666.16 | 0,68299.23 | 67 |
| 18 | 0,18349.05 | 8,83835.42 | 8,47403.17 | 0,69318.62 | 68 |
| 19 | 0, 19368:44 | 8,81960. 24 | 8,47147.80 | 0,70338.01 | 69 |
| 20 | 0,20387.83 | 8,80203.55 | 8,46899 ${ }^{\text {81 }}$ | 0,71357'40 | 70 |
| 21 | 0,21407.22 | 8,78553.60 | 8,46658.92 | 0,72376-80 | 71 |
| 22 | 0,22426.61 | 8,77000 26 | 8,46424.91 | 0,73396.19 | 72 |
| 23 | 0,23446 00 | 8,75534*79 | 8,46197'53 | 0,74415'58 | \%3 |
| 24 | 0,24465.40 | 8,74149.52 | 8,45976.59 | 0,75434.97 | 7 |
| 25 | 0,2548477 | 8,72837.75 | 8,45761.83 | $0,76454.36$ | 75 |
| 26 | 0,26504.18 | $8,71593 \cdot 57$ | 8,45553 ${ }^{\circ} 8$ | 0,77473.75 |  |
| 27 | 0,27523'57 | $8,7041{ }^{1} 73$ | $8,45.350 \cdot 14$ | 0,78493.14 | 77 |
| 28 | 0,28542.96 |  | $8,45152.83$ | 0,79512.54 |  |
| 29 | 0,29502:35 | 8,68216.82 | 8,44960.94 | 0,80531 93 | 79 |
| 30 | 0,30581.74 | 8,67195.84 | 8,44774 3 | 0,81551.32 |  |
| 31 | 0,31601. 14 | 8,662 | 8,44592.81 | 0,82570•71 | 81 |
| 32 | 0,32620'53 | 8,65280 81 | 8,44416.24 | 0,83590'10 | 82 |
| 33 | 0,33639.92 | $8,64398 \cdot 93$ | $8,44244 \cdot 45$ |  | 8 |
| 34 | 0,34659.31 | $8,63546^{\circ} 00$ | 8,4407730 | 0,8,628.88 | 84 |
| 35 | 0,3.678.70 | $8,62728.74$ | $8,43914.65$ | 0,86048.28 | 85 8 |
| 30 | $0,36698 \cdot 09$ | $8,61945.00$ $8,61192.87$ | 8,43756 $8,43602 \cdot 29$ 8 | 0,88687.06 | 87 |
| 38 | 0,38736.88 | $8,60470 \cdot 55$ | 8,43452.32 | 0,89706.45 | 88 |
| 39 | $0,39756 \cdot 27$ | 8,5977641 | 8,43306.33 | 0,90725.84 | 89 |
| 40 | 0,4077566 | 8,59108.91 | 8,43164.21 | 0,91745.23 | 90 |
| 4 I | 0,41795.05 | 8,58466.66 | 8,43025.82 | 0,92764.62 | 91 |
| 42 | $0,42814^{*} 44$ | 8, 57848.34 | $8,42891 \cdot 07$ | 0,93784 ${ }^{\text {d }}$ 02 | 92 |
| 43 | $0,43833 \cdot 83$ | 8,57252.74 | $8,42759 \cdot 85$ | 0,94803.41 | 93 |
| 44 | 0,44853.23 | $8,56678 \cdot 76$ | $8,426322^{\circ} \mathrm{O}$ | 0,95822.80 | 94 |
| 45 | $\begin{aligned} & 0,45872 \cdot 62 \\ & 0,46892 \cdot 01 \end{aligned}$ | $8,56125.31$ $8,55591.44$ | 8,42507 8,42386 | $0,96842 \cdot 19$ $0,97861.58$ |  |
| 47 | 0,47911.40 | $8,55076 \cdot 19$ | $8,42268.24$ | 0,98880•97 | 97 |
| 48 | 0,48930.79 | 8,54578.74 | 8,42153.20 | 0,99900:37 | 98 |
| 49 | $0,49950 \cdot 18$ | $8,54098 \cdot 27$ | 8,42041.11 | 1,00919.76 | 109 |
| 50 | 0,50969'57 | 8,53634*03 | $\begin{aligned} & 8,41931 \cdot 90 \\ & 8,37566 \cdot 36 \end{aligned}$ | 1,01939'15 | $\left\lvert\, \begin{aligned} & 100 \\ & 100 e p \end{aligned}\right.$ |

For explanation see pp. 216-228

## $2 \frac{1}{2} \operatorname{Par}$ Cont.

| Years | Log. re. | Log. $\mathbf{a}^{\text {n }}$. | Log. $a^{n}$. | Log. re. | Yeara |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01072'39 | 0,01072.39 | 8,54293.36 | 0,54691 71 | 51 |
| 2 | 0,02144 77 | 9,71502.27 | 8,53875.55 | 0,55764 10 | 52 |
| 3 | 0,03217.16 | 9,54423.83 | 8,53471 76 | 0,56836.49 | 53 |
| 4 | 0,04289*55 | 9,42458.42 | 8,53081.40 | 0,57908.87 | 54 |
| 5 | 0,05361.93 | 9,33293.68 | $8,52703.92$ | 0,58981 26 | 55 |
| 6 | 0,06434 ${ }^{\circ} 2$ | 9,25899.62 | $8,52338 \cdot 78$ | 0,60053.65 | 56 |
| 7 | 0,07506.71 | 9,1972680 | 8,51985'48 | 0,61126.03 | 57 |
| 8 | 0,08579'09 | 9,14447.26 | 8,51643.54 | 0,62198.42 | 58 |
| 9 | $0,09651 \cdot 48$ | 9,09849.45 | $8,51312{ }^{8} 5$ | 0,63270.81 | 59 |
| 10 | 0,10723.87 | 9,05788.95 | 8,50991'99 | 0,64343.19 | 60 |
| 11 | 0,11796. 25 | 9,02162.73 | 8,50681'53 | 0,65415.58 | 61 |
| 12 | 0,12868.64 | 8,98894* 73 | 8,50380.78 | 0,66487.97 | 62 |
| 13 | 0,13941 0.3 | 8,95927 ${ }^{1} 7$ | 8,50089.34 | 0,67560.35 | 63 |
| 14 | 0,15013.41 | 8,93215.16 | 8,49806\% | 0,68632.74 | 64 |
| 15 | 0,16085.80 | 8,90723.11 | 8,49533'10 | 0,69705 13 | 65 |
| 16 | 0,17158•18 | 8,88422.30 | 8,49267.63 | 0,70777.51 | 66 |
| 17 | 0,18230. 57 | 8,86289'29 | 8,49010:20 | 0,71849.90 | 67 |
| 18 | 0,19302.96 | 8,84304.63 | 8,48760.50 | 0,72922•28 | 68 |
| 19 | 0,20375 34 | 8,82452 04 | 8,48518.27 | 0,73994 67 | 69 |
| 20 | 0,21447* 73 | 8,80717.72 | 8,48283.24 | 0,75067.06 | 70 |
| 21 | 0,22520'12 | 8,79089.94 | 8,48055 ${ }^{1} 7$ | 0,76139.44 | 71 |
| 22 | 0,23592.50 | 8,77558.57 | 8,4783, 80 | 0,7ヶ211.83 | 72 |
| 23 | 0,2466489 | $8,76114.85$ | 8,47618.91 | 0,78284.22 | 73 |
| 24 | 0,25737.28 | 8,74751 ${ }^{14}$ | 8,47410'29 | 0,79356.60 | 74 |
| 25 | 0,26809.66 | 8,73460.72 | 8,47207.72 | 0,80428.99 | 75 |
| 26 | 0,27882.05 | 8,72237-68 | 8,47010.99 | 0,81501 38 | 76 |
| 27 | 0,28954* 44 | 8,71076.77 | $8,46819{ }^{\circ} 91$ | 0,82573'76 | 77 |
| 28 | $0,30026 \cdot 82$ | 8,69973.31 | 8,46634 ${ }^{1}$ | $0,83646 \cdot 15$ | 78 |
| 29 | 0,3109921 | 8,68923 13 | 8,46453.99 | 0,84718'54 | 79 |
| 30 | 0,32171.60 | 8,67922.47 | 8,46278.79 | 0,85790.92 | 80 |
| 31 | 0,33243.98 | 8,66967.94 | 8,46108.53 | 0,86863.31 | 81 |
| 32 | 0,34316:37 | 8,66056'49 | 8,45943.08 | 0,87935 ${ }^{\circ} \mathrm{O}$ | 82 |
| 33 | $0,3,5888 \cdot 76$ | 8,65185 33 | 8,45782.26 | 0,89008.08 | 83 |
| 34 | 0,3646r'14 | 8,64351.93 | 8,45625.94 | 0,90080.47 | 84 |
| 35 | 0,37533'53 | 8,63553.99 | 8,45473.97 | 0,91152.86 | 85 |
| 36 | $0,38605{ }^{9}{ }^{2}$ | 8,62789'39 | 8,45.326.23 | 0,92225.24 | 86 |
| 37 | $0,39678 \cdot 30$ | 8,62056.18 | $8,45182 \cdot 56$ | $0,93297.63$ | 87 |
| 38 | 0,4075069 | 8,61352.59 | $8,45042 \cdot 85$ | $0,94370 \cdot 02$ | 88 |
| 39 | $0,41823.08$ | 8,60676.98 | 8,44906.99 | 0,95442.40 | 89 |
| 40 | $0,42895 \cdot 46$ | 8,60027'83 | 8,44774.84 | 0,9651479 | 90 |
| 41 | 0,43967.85 | 8,59403.72 | 8,44646.31 | 0,97587 18 | 91 |
| 42 | $0,45040 \cdot 23$ | 8,58803.36 | 8,44521 27 | 0,98659.56 | 92 |
| 43 | 0,46112.62 | 8,58225.53 | 8,44399.64 | 0,99731.95 | 93 |
| 44 | 0,47185.01 | 8,57669'11 | 8,44281'29 | 1,00804.33 | 94 |
| 45 | 0,48257.39 | 8,57133.06 | 8,44166.15 | 1,0187672 | 95 |
| 46 | 0,49329.78 | 8,56616.35 | 8,44054 10 | 1,02949•11 | 96 |
| 47 | 0,50402.17 | 8,56118.12 | $8,43945^{\circ} \mathrm{O}$ | 1,04021.49 | 97 |
| 48 | 0,51474.55 | 8,5,5637* ${ }^{8}$ | $8,43838.95$ | 1,05093-88 | 98 |
| 49 | $0,52546.94$ | 8,55173.64 | 8,43735.68 | 1,06166.27 | 99 |
| 50 | 0,53619.33 | 8,54725.84 | $8,43635 \cdot 16$ | 1,07238.65 | $\left\lvert\, \begin{aligned} & 100 \\ & \operatorname{Perp} . \end{aligned}\right.$ |


| $2 \frac{5}{8}$ Per Cent. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | Log. $r^{2}$. | Lag. $a^{n}$. | Lag. $a^{\text {m }}$. | Log. ${ }^{\text {r }}$. | Years |
| ' | 0,01125.32 | $0,01125.32$ | 8,55387.14 | 0,57391.17 | 51 |
| 3 | 0,02250.63 | 9,71581.33 | 8,54984.90 | 0,58516.48 | 52 |
| 3 | 0,03375.95 | 9,54.588.79 | 8,54596.51 | $0,59641^{180}$ | 53 |
| 4 | 0,04501 27 | 9,425890\%7 | $8,54221.36$ | $0,60767.12$ | 54 |
| 5 | 0,05626.59 | 9,33440 80 | $8,538.58 .00$ | 0,61892.44 | 55 |
|  | $0,06751.90$ $0,07877.22$ | $9,26080 \cdot 97$ $9,19933 \cdot 16$ | $8,53508 \cdot 61$ $8,53160 \cdot 06$ | 0,6301775 $0,64143.07$ | 56 |
| 7 | $0,07877.22$ $0,09002 \cdot 54$ | $9,19933 \cdot 16$ $9,14678.41$ | $8,53169 \%$ $8,52842.49$ | 0,64143 $0,65288.39$ | 57 |
| 9 | 0, 10127.85 | 9,10105'19 | $8,52525.77$ | 0,66393.70 | 59 |
| 0 | 0,11253'17 | 9,06069 03 | 8,52219.35 | 0,67519 02 | 60 |
| 11 | $0_{2} 12378.49$ | 9,02466.94 | 8,51922.83 | 0,68644;34 | 61 |
| 12 | $0,1350,380$ | 8,99222.85 | $8,51635.83$ | 0,69769.65 | 62 |
| 13 | $0,14629 \cdot 12$ | $8,96278.97$ | 8,5135798 | $0,70894.97$ | 63 |
| 14 | $0,157544^{\circ} 44$ | $8,93590 \cdot 42$ | 8,51088.94 | 0,72020.29 | 64 |
| 15 | $0,168799^{6}$ | $8,91121 \cdot 61$ | 8,50828.38 | 0,73145.61 | 65 |
| 17 | 0,18005 0,1913 0.39 | $8,88843 \cdot 83$ $8,86733 \cdot 61$ | $8,505775.97$ $8,5031.43$ | 0,74270-92 | 66 |
| 18 | 0,2025571 | 8,87771•55 | $8,503.314 .4$ $8,50094 \cdot 4$ | $0,75396 \cdot 24$ $0,76521.56$ | 68 |
| 19 | $0,21381 \cdot 02$ | 8,82941 ${ }^{1}$ | 8,49864'78 | 0,7764687 | 69 |
| 20 | 0,22506.34 | 8,81229.15 | 8,49642.15 | 0,78772-19 | 70 |
| 21 | 0,23631.66 | 8,79623.30 | 8,49426.29 | 0,79897.51 | 71 |
| 22 | 0,2475697 | $8,78113 \cdot 65$ | 8,4921700 | 0,81022.82 | 72 |
| 23 | 0,25882.29 | $8,76691{ }^{\circ}{ }^{2}$ | $8,49014{ }^{\circ} \mathrm{OI}$ | 0,82148.14 | 73 |
| 24 | 0,2700761 | $8,75348 \cdot 99$ | 8,48817.13 | 0,83273.46 | 74 |
| 25 | 0,28132.93 | $8,74079 \cdot 64$ | $8,48626.14$ | 0, $8,4,398 \cdot 78$ | 75 |
| 26 | $0,29258.24$ | 8,7287745 | $8,48440 \cdot 84$ | $0,85524.09$ | 76 |
| 27 | $0,3038.36$ $0,3158.88$ | $8,71737 \cdot 17$ | $8,48261.04$ | $0,86649{ }^{\circ} 1$ | 77 |
| 28 29 | $0,31508.88$ 0,32634 | $8,70654 \cdot 14$ 8,69624 | $8,48086 \cdot 55$ $8,47017.20$ | 0,87774.73 |  |
| 30 | ${ }^{0,33759.51}$ | 8,696247 $8,68643^{2}$ | $8,47917 \cdot 20$ $8,47752.80$ | 0,88,00.04 | 89 |
| 31 | $0,34884.83$ | 8,67708.78 | $8,47593.21$ | 0,91150.68 | 81 |
| 32 | $0,36010 \cdot 14$ | 8,66816.90 | $8,474,88.26$ | 0,92275'99 | 82 |
| 33 | $0,37135{ }^{\circ} 46$ | 8,65965'11 | 8,47287.81 | $0,93401.31$ | 83 |
| 34 | 0,38260\% ${ }^{7} 8$ | 8,65150.88 | 8,47141 70 | 0,94526.63 | 84 |
| 35 | $0,39386 \cdot 10$ | $8,64371 \cdot 89$ | 8.46999 .80 | 0,95651 9.5 | 85 |
| 36 | $0,40511.41$ | 8,6362603 8,62011 | $8,46861 \cdot 98$ | 0,96777.26 | 86 |
| 37 | $0,41636 \cdot 73$ | $8,62911 \cdot 38$ | 8,46728.10 | 0,97902.58 | 87 |
| 38 | 0,42762.05 | $8,62226 \cdot 13$ | $8,46598.05$ | 0,99027.90 | 88 |
| 39 | $0,43887.36$ | $8,61568 \cdot 65$ | $8,4647{ }^{1} 69$ | 1,00153.21 | 89 |
| 40 | 0,45012.68 | 8,6093742 | 8,46348.91 | 1,01278.53 | 90 |
| 41 | $0.46138 \cdot 00$ | $8,60331{ }^{\circ} \mathrm{O} 5$ | $8,46229.62$ | 1,02403.85 | 91 |
| 42 | 0,4726.3.31 | 8,59748•22 | 8,46113.68 | 1,03529.16 | 92 |
| 43 | $0,48388.63$ | ${ }^{8,59187.72}$ | 8,4600101 | 1,04654.48 | 93 |
| 44 | $0,49513.95$ 0,5063927 | $8,58648 \cdot 42$ $8,58129 \cdot 29$ | $8,458811 \cdot 50$ $8,45785 \cdot 06$ | $1,05779.80$ $1,0695 \cdot 12$ | 94 |
| 45 | 0,5003927 $0,51764.58$ | $8{ }^{8} 87629.35$ | $8,4,4688.59$ | $1,06905 \cdot 12$ $1,08030 \cdot 43$ | 95 |
| 47 | 0,52889'90 | $8,57147.65$ | $8,45581.00$ | 1,09155\% ${ }^{\text {1 }}$ | 97 |
| 48 | $0,54015.22$ | $8,56683.36$ | $8,45483.22$ | 1,10281.07 | 98 |
| 49 | $0,5.140 \cdot 53$ | $8.56235 \cdot 68$ | 8,45388.13 | 1,11406.38 | 99 |
| 50 | 0,56265.85 | 8,55803•84 | 8,45295.69 | 1,12531.70 | 100 |

For explanation see pp. 216-228

## $2 \frac{3}{4}$ Per Cent.

| Vears | Log. ${ }^{\text {rrm}}$ | Log. $a^{\text {n }}$. | Log. $a^{\text {m }}$ 。 | Log. $\mathbf{r a}^{\text {co}}$ | Yeart |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01178.18 | 0,01178.18 | 8,56466.78 | 0,60087.34 | 5.1 |
| 2 | 0,02356.37 | 9,71660.28 | 8,56079.64 | 0,6126.5 ${ }^{2}$ | 52 |
| 3 | 0,03534.55 | 9,54633.59 | 8,55706.15 | 0,62443 ${ }^{\circ} \mathrm{O}$ | 53 |
| 4 | 0,04712.73 | 9,42719*49 | 8,55345*71 | 0,63621-88 | 54 |
| 5 | 0,05890.92 | 9,33605.59 | 8,54997.78 | 0,6480\% 07 | 55 |
| 6 | 0,07069.10 | 9,2626I.92 | 8,5466I $\cdot 81$ | 0,65978.25 | 56 |
| 7 | 0,08247.28 | 9,20139.02 | 8,54337.31 | 0,67156.43 | 57 |
| 8 | 0,09425.46 | 9,14908.96 | 8,54023.81 | 0,68334.62 | 58 |
| 9 | 0,10603.65 | 9,10,360'17 | 8,53720.85 | $0,69512.80$ | 59 |
| 10 | 0,1178183 | 9,06348-24 | 8,53428.02 | $0,70690 \cdot 98$ | 60 |
| 11 | 0,12960.01 | 9,02770'14 | 8,53144`91 | 0,71869.17 | 61 |
| 12 | $0,14138 \cdot 20$ | 8,99549779 | 8,52871 ${ }^{14}$ | 0,73047.35 | 62 |
| 13 | 0,15316.38 | 8,06629.44 | 8,52606.34 | $0,74225.53$ | 63 |
| 14 | 0,16494.56 | 8,93964.19 | 8,52350.17 | $0,75403 \cdot 72$ | 64 |
| 5 | 0,17672.75 | 8,91518.44 | $8,52102 \cdot 30$ | $0,76581 \cdot 90$ | 65 |
| 16 | -, 18850'93 | 8,89263.51 | $8,51862 \cdot 41$ | 0,77760.08 | 66 |
| 17 | 0,20029 11 | 8,87175 ${ }^{\circ} 8$ | 8,51630.21 | 0,78938.26 | 67 |
| 18 | $0,21207 \cdot 29$ | 8,85236-18 | $8,51405.41$ | $0,80116.45$ | 68 |
| 19 | 0,22385.48 | 8,83428.09 | 8,51187.74 | 0,81294.63 | 69 |
| 20 | 0,23563.66 | 8,81737 ${ }^{5} 5$ | 8,50976.93 | $0,82472.81$ | 70 |
| 21 | 0,2474I ${ }^{\circ} 84$ | 8,80153.69 | 8,50772'75 | $0,8365 \mathrm{I} \cdot \infty$ | 71 |
| 22 | 0,25920.03 | 8,78665.49 | 8,50574'95 | 0,84829•18 | 72 |
| 23 | 0,27098.21 | 8,77264'51 | $8,50383^{\circ} 3^{\circ}$ | 0,86007 ${ }^{36}$ | 73 |
| 24 | 0,28276.39 | 8,75943 ${ }^{\circ} \mathrm{O}$ | 8,50197'59 | $0,87185.55$ | 74 |
| 25 | 0,29454* ${ }^{\circ}$ | 8,74694.52 | $8,50017.61$ | 0,88,363'73 | 75 |
| 26 | $0,30632 \cdot 76$ | 8,73512.89 | 8,49843.16 | 0,89541.91 | 76 |
| 27 | $0,31810.94$ | 8,72392.96 | $8,49674 \circ 5$ | 0,90720.09 | 77 |
| 28 | $0,32989 \cdot 13$ | 8,71330.05 | 8,49510'10 | 0,91898. 28 | 78 |
| 29 | $0,34167.31$ | 8,70319.98 | 8,49351'12 | 0,93076.46 | 79 |
| 30 | $0,35345^{\circ} 49$ | 8,69359 ${ }^{\circ} 00$ | 8,49196.96 | 0,94254.64 | 80 |
| 31 | $0,36523 \cdot 67$ | 8,68443 72 | 8,49047 45 | 0,95432.83 | 81 |
| 32 | 0,37701 86 | 8,67571.08 | 8,48902.44 | 0,9661I.01 | 82 |
| 33 | $0,38880 \cdot 04$ | 8,66738.32 | 8,48761 76 | 0,97789'19 | 83 |
| 34 | 0,40058.22 | 8,65942.89 | 8,48625.28 | 0,98967.38 | 84 |
| 35 | $0,41236 \cdot 41$ | 8,65182.48 | $8,48492 \cdot 87$ | 1,00145.56 | 85 |
| 36 | 0,42414'59 | 8,64455 ${ }^{\circ}$ | $8,48364{ }^{\prime}{ }^{\circ}$ | 1,01323.74 | 86 |
| 37 | 0,43592'77 | 8,63758.51 | 8,48239 ${ }^{72}$ | 1,02501'93 | 87 |
| 38 | 0,44770.96 | 8,63091.21 | 8,48118 72 | 1,03680.11 | 88 |
| 39 | 0,45949'14 | 8,62451*47 | 8,48001 29 | 1,04858.29 | 89 |
| 40 | 0,47127.32 | 8,6183777 | 8,47887.30 | 1,06036.47 | 90 |
| 41 | 0,48305 51 | 8,61248 72 | 8,47776.64 | 1,07214.66 | 91 |
| 42 | 0,49483.69 | 8,60682.99 | 8,47669.23 | 1,08392.84 | 92 |
| 4.3 | 0,50661-87 | 8,60139 ${ }^{\circ}$ | 8,47564.94 | 1,09571.02 | 9.3 |
| 44 | $0,51840 \cdot 05$ | 8,59616.81 | 8,47463.68 | 1,10749.21 | 94 |
| 45 | $0,53018 \cdot 24$ | 8,59114*7 | 8,47365.35 | 1,11927.39 | 9.5 |
| 46 | $0,54196 \cdot 42$ | $8,58630 \cdot 51$ | 8,47269.87 | 1,13105.57 | 96 |
| 47 | 0,55374.60 | 8,58164.91 | $8,47177 \cdot 15$ | 1,14283.76 | 97 |
| 48 | 0,56552'79 | 8,57716.51 | 8,47087.10 | 1,15461.94 | 98 |
| 49 | 0,57730.97 | 8,57284.52 | 8,46999.64 | 1,16640'12 | 99 |
| 50 | 0,58909'15 | 8,56868.18 | $\begin{aligned} & 8,46914 \cdot 69 \\ & 8,43033 \cdot 27 \end{aligned}$ | 1,17818.31 | $\begin{aligned} & 100 \\ & \text { Perp. } \end{aligned}$ |

## $2 \frac{7}{8}$ Por Cont.

| Years | Log. ${ }^{\text {r }}$. | Log. $a^{\text {n }}$. | Log. $a^{n}$. | Log. ${ }^{\text {re. }}$ | Yeass |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01230.98 | 0,01230.98 | 8,57532* ${ }^{1}$ | 0,62780.23 | 51 |
| 2 | 0,02461.97 | 9,71739 ${ }^{12}$ | 8,57159.00 | 0,64011 21 | 52 |
| 3 | 0,03692.95 | 9,54738.21 | $8,56800 \cdot 85$ | 0,65242.20 | 53 |
| 4 | 0,04923.94 | 9,42849.66 | $8,56454 \cdot 64$ | 0,66473 ${ }^{18}$ | 54 |
| 5 | 0,00154.92 | 9,33767.07 | $8,56120{ }^{\circ} 75$ | 0,67704.17 | 55 |
|  | $0,07385.91$ $0,08616.80$ | 9,26442.45 $\mathbf{9 , 2 0 3 4 4}$ | $8,55798.62$ 8,554876 | $0,6893 \cdot 15$ $0,70166.13$ | 56 |
| 8 | 0,0984788 | 9,20344.88 | 8,55487\% ${ }^{\text {8, }}$ | 0,7016013 | 58 |
| 9 | 0,11078.86 | 9,10614.43 | 8,54898.03 | 0,72628•10 | 59 |
| 0 | $0,12309.85$ | 9,06626.59 | 8,54618.27 | 0,73859\%9 | 60 |
| 11 | $0,13540 \cdot 83$ | 9,0 | 8,54348.06 | 0,75090.07 | 61 |
| 12 | 0,14771-82 | 8,99875.58 | 8,54086.99 | 0,76321.06 | 62 |
| 13 | 0, $16002 \cdot 80$ | 8,96978.60 | 8,53834:72 | 0,77552.04 | 63 |
| 14 | 0,17233'79 | 8,94336.46 | 8,53590-89 | 0,78783.03 | 64 |
| 15 | 0,18464.77 | $8,91913.59$ | 8,53355 18 | $0,80014^{\circ} 1$ | 65 |
| 16 | 0, 19695 76 | $8,89681 \cdot 29$ | 8,53127•28 | 0,8124, ${ }^{\circ}$ | d |
| 18 | $0,20926.74$ | 8,87616\%99 | $8,52906 \cdot 89$ | 0,82475;98 | 67 |
| 18 | $0,22157^{7} 73$ | 8,85698.54 | 8,52693'72 | 0,83706.97 | 68 |
| 19 | 0,23388.71 | 8,83912.38 | 8,52487.51 | 0,84937.95 | 69 |
| 20 | 0,24619'70 | 8,82243:82 | 8,52288.00 | 0,86168.94 | 70 |
| 21 | $0,25850 \cdot 68$ | 8,80681.12 | 8,52094*94 | 0,87399.92 | 71 |
| 22 | 0,27081.67 | 8,79214 13 | 8,51908.09 | 0,88630.91 | 72 |
| 23 | 0,28312.65 | 8,77834 13 | 8,51727.23 | 0,89861.89 | 73 |
| 24 | 0,29543*64 | 8,76533.45 | $8,51552 \cdot 14$ | 0,91092 88 | 74 |
| 25 | 0,30774*62 | 8,7530539 | $8,51382 \cdot 63$ | 0,92323.86 | 75 |
| 26 | $0,32005 \cdot 61$ | 8,74144*5 | 8,51218.47 | 0,93554.85 | 76 |
| 27 | $0,33236 \cdot 59$ | $8,73044 \cdot 16$ | $8,51059.50$ | 0,94785.83 | 77 |
| 28 | 0,34467.57 | 8,72001 ${ }^{\circ} 06$ | 8,50905'53 | 0,96016.82 | 78 |
| 29 | $0,35698 \cdot 56$ | 8,71010'58 | 8,50756-38 | 0,97247.80 | 79 |
| 30 | 0,36929'54 | 8,70068.95 | 8,5061190 | 0,98478.79 | 80 |
| 31 | $0,38160 \cdot 53$ | 8,69172-80 | 8,50471 ${ }^{\circ} 9$ | 0,99709'77 | 81 |
| 32 | 0,39391.51 | 8,68319 ${ }^{\circ} 7$ | $8,50336 \cdot 25$ | 1,00940'76 | 82 |
| 33 | 0,40622.50 | 8,67504.98 | 8,50204•80 | 1,02171 74 | 83 |
| 34 | 0,41853.48 | 8,66728.00 | 8,50077 '41 | 1,03402 ${ }^{\prime 2}$ | 84 |
| 35 | 0,43084*47 | 8,6598.83 | 8,49953.92 | 1,04633'71 | 85 |
| 36 | 0,44315.45 | 8,65276.36 | 8,49834.22 | 1,05864'69 | 86 |
| 37 | $0,48546 \cdot 44$ | 8,64597.66 | 8,49718-19 | 1,07095.68 | 87 |
| 38 | 0,467774.42 | 8,63947.92 | 8,49605.69 | 1,08326.66 | 88 |
| 39 | $0,48008 \cdot 41$ | $8,63325^{\circ} 5$ | 8,49496.62 | 1,09557.65 | 89 |
| 40 | 0,49239'39 | 8,62728.96 | 8,49390.86 | 1,10788.63 | 90 |
| 41 | 0,50470.38 | 8,621 56.81 | 8,49288.30 | 1,12019.62 | 91 |
| 42 | 0,51701.36 | 8,61607.79 | 8,49188.83 | 1,13250'60 | 92 |
| 43 | $0,52932 \cdot 35$ | 8,61080.69 | 8,49092.36 | 1,14481. 59 | 93 |
| 44 | $0,54163.33$ | 8,60574.36 | 8,48998.80 | 1,15712.57 | 94 |
| 45 | $0,553943^{2}$ | 8,60087779 | 8,48908.04 | 1,16943.56 | 95 |
| 46 | $0,56625^{\circ} 3^{\circ}$ | 8,59619.98 | 8,48820.00 | 1,18174.54 | 96 |
| 47 | 0,57856.29 | 8,59170.02 | 8,48734.59 | 1,19405'53 | 97 |
| 48 | 0,59087.27 | 8,58737.06 | 8,48651 73 | 1,20636.51 | 98 |
| 49 | $0,60318 \cdot 26$ | $8,58320 \cdot 31$ | $8,48571{ }^{\text {'3 }}$ | 1,21867.50 | 99 |
| 50 | 0,61549.24 | 8,57918.99 | $\begin{aligned} & 8,48493.33 \\ & 8,45863 \cdot 78 \end{aligned}$ | 1,23098.48 | ${ }^{100}$ |


| $\underline{\text { Years }}$ | Log. $r^{\text {m }}$. | Log. $a^{n}$. | Log. $a^{\text {², }}$ | Log. 5 . | Yeara |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01283.72 | $0,01283.72$ | 8,58584*2I | 0,65469.85 | 51 |
| 2 | $0,02567{ }^{\circ} 44$ | 9,71817.84 | 8,58225.86 | 0,66753.57 | 52 |
| 3 | $0,03851.17$ | 9,54842.67 | 8,57880.78 | 0,68037 29 | 53 |
| 4 | 0,0513489 | 9,42979.59 | 8,57548:32 | 0,69321-01 | 54 |
| 5 | 0,06418.61 | 9,33916.23 | 8,57227.98 | 0,70604.74 | 55 |
| 6 | 0,07702.33 | 9,26622.58 | 8,56919'22 | 0,71888.46 | 56 |
| 7 | 0,08986.06 | 9,20549.22 | 8, $56621 \cdot 52$ | 0,73172.18 | 57 |
|  | 0,10269'78 | 9,15368•19 | 8,56334'42 | 0,74455;90 | 58 |
| 9 | $0,11553.50$ | 9,10867.95 | 8,56057.53 | 0,75739.63 | 59 |
| 10 | $0,12837 \cdot 22$ | 9,06904*07 | 8,55790.35 | 0,77023.35 | 60 |
| 11 | 0,14120'95 | 9,03373.51 | 8,55532.53 | $0,78307.07$ | 61 |
| 12 | $0,15404 \cdot 67$ | 9,00200.22 | 8,55283.67 | 0,79.590'79 | 62 |
| 13 | 0, 16688'39 | $8,97326 \cdot 43$ | 8,55043*41 | 0,80874.52 | 63 |
| 14 | 0,17972.11 | 8,94707'25 | 8,54811.42 | 0,82158.24 | 64 |
| 15 | 0,19255.84 | $8,92307.08$ | 8,54587.36 | 0,83441.96 | 65 |
| 16 | 0,20539.56 | $8,90097 \cdot 23$ | 8,54370'93 | 0,84725.68 | 66 |
| 17 | 0,21823.28 | 8,88054•22 | 8,54161.83 | 2,86009'41 | 67 |
| 18 | $0,23107.00$ | 8,86158.64 | 8,53959*78 | 0,87293.13 | 68 |
| 19 | 0,24390.73 | 8,84394•18 | 8,53764.51 | 0,88,76.85 | 69 |
| 20 | 0,25674'45 | 8,82747.08 | 8,53575*\%6 | $0,80860 \cdot 57$ | 70 |
| 21 | 0,26958-17 | 8,81205.58 | 8,53393'29 | 0,91144*30 | 71 |
| 22 | 0,28241.89 | 8,79759.57 | 8,53216.86 | 0,92428.02 | 72 |
| 23 | 0,29525'62 | 8,78400-29 | $8,53046 \cdot 27$ | 0,93711.74 | 73 |
| 24 | 0,30809'34 | $8,77120.09$ | 8,52881-27 | 0,94995.46 | 74 |
| 25 | 0,3209, ${ }^{\circ} 06$ | 8,75912'27 | 8,52721 68 | 0,96279*19 | 75 |
| 26 | 0,33376.78 | 8,74770'92 | 8,5256730 | 0,97562.91 | 76 |
| 27 | $0,34660 \cdot 51$ | 8,73690'79 | $8,52417.94$ | 0,98846.63 | 77 |
| 28 | 0,35944. 23 | $8,72667 \cdot 20$ | 8,52273.41 | 1,001,30:35 | 78 |
| 29 | 0,37227.95 | 8,71696.00 | 8,52133.56 | 1,01414.08 | 79 |
| 30 | 0,3851167 | 8,70773.41 | 8,51998.21 | 1,02697.80 | 80 |
| 31 | 0,39795.40 | 8,698g6.07 | 8,51867.20 | 1,03981.52 | 81 |
| 32 | $0,41079.12$ | 8,69060.91 | 8,51740:38 | 1,05265.24 | 82 |
| 33 | $0,42362 \cdot 84$ | 8,68265'I5 | 8,51617.6ı | 1,06548.97 | 83 |
| 34 | 0,43646.56 | 8,67506.27 | $8,51498 \cdot 76$ | 1,07832.69 | 84 |
| 35 | 0,44930.29 | 8,66781 98 | $8,51383.67$ | 1,09116.41 | 85 |
| 36 | 0,46214 ${ }^{\circ} \mathrm{OI}$ | 8,66090'15 | 8,51272.22 | 1,10400'13 | 86 |
| 37 | 0,47497.73 | 8,65428 85 | 8,51164.30 | 1,11683.85 | 87 |
| 38 | 0,48781.45 | 8,64796:30 | 8,5105977 | 1,12967.58 | 88 |
| 39 | 0,50065. 8 | 8,64190.86 | $8,50958 \cdot 53$ | 1,14251 30 | 89 |
| 40 | $0,51348 \cdot 90$ | 8,63611 04 | 8,50860'46 | 1, 15535.02 | 90 |
| 41 | 0,52632.62 | 8,63055.41 | 8,50765.46 | 1,16818.74 | 9I |
| 42 | 0,53916'34 | 8,62522.68 | 8,50673.42 | 1,18102.47 | 92 |
| 43 | 0,55200.07 | 8,62011 63 | $8,50584 \cdot 25$ | 1,19386.19 | 93 |
| 44 | 0,56483'79 | 8,61521'17 | $8,50497 \cdot 8$ | 1,20669\%91 | 94 |
| 45 | 0,57767.51 | 8,61050.23 | 8,50414.14 | 1,21953.63 | 95 |
| 46 | 0,59051 23 | $8,60597 \cdot 85$ | $8,50333.02$ | 1,23237.36 | 96 |
| 47 | 0,60334 96 | $8,60163 \cdot 10$ | 8,50254.40 | 1,24521.08 | 97 |
| 48 | 0,61618.68 | 8,59745 ${ }^{\text {1 }} 4$ | 8,50178.22 | 1,25804.80 | 98 |
| 49 | 0,62902.40 | 8,59343.16 | 8,50104.37 | 1,27088.52 | 99 |
| 50 | 0,64186.12 | 8,58956.42 | $\begin{aligned} & 8,50032 \cdot 80 \\ & 8,47712 \cdot 13 \end{aligned}$ | 1,28372 25 | $\left\lvert\, \begin{aligned} & \text { Ioo } \\ & \text { Perp } \end{aligned}\right.$ |



For explanation see pp. 216-228
$3 \frac{1}{4}$ Per Cent.

| Years | Log. ${ }^{\text {m }}$. | Log. $a^{\text {n }}$. | Lag. $a^{\text {a }}$. | Log. ${ }^{\text {bre}}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $0,01389.01$ | 0,01389.01 | 8,60646.92 | 0,70839.31 | 51 |
| 2 | 0,02778.01 | 9,71974*96 | 8,60315.55 | $0,72228 \cdot 31$ | 52 |
| 3 | 0,04167.02 | 9,55051.08 | 8,59997*0 | $0,73617.32$ | 53 |
| 4 | 0,05556*02 | 9,432, ${ }^{\text {¢ }} 76$ | 8,59690'69 | 0,75006:33 | 54 |
| 5 | 0,06945.03 | 9,34225.60 | $8,59396.07$ | 0,76395.33 | 55 |
| 6 | 0,08334.04 | 9,26981.63 | $8,59112.62$ | 0,77784*34 | 36 |
| 7 | 0,0972.304 | 9,20957 ${ }^{\text {21 }}$ | $8,58839.84$ | 0,79173.34 | 57 |
| 8 | 0,1111205 | 9,15824*98 | $8,58577 \cdot 28$ | 0,80562.35 | 58 |
| 9 | 0,12501-05 | 9,11372.80 | $8,58324.47$ | 0,81951.36 | 59 |
| 10 | 0,13890.06 | 9,07456.43 | 8,58081.02 | $0,83340 \cdot 36$ | 60 |
| 11 | 0,1527907 | 9,03972.87 | 8,57846.52 | 0,84729:37 | 61 |
| 12 | 0,16668.07 | 9,00846.04 | $8,57620.62$ | $0,86118 \cdot 37$ | 62 |
| 13 | 0,18057.08 | 8,98018.18 | 8,57402.9.3 | 0,87507.38 | 6.3 |
| 14 | 0,19446.08 | 8,95444:39 | $8,57193 \cdot 13$ | 0,88896.39 | 64 |
| 15 | $0,20835^{\circ} 09$ | 8,9,3089.08 | $8,56990 \cdot 90$ | 0,90285:39 | 65 |
| 16 | 0,22224'10 | 8,90923.57 | 8,56795.9.3 | $0,91674{ }^{\circ}$ | 66 |
| 17 | 0,2,3613.10 | 8,88924:38 | $8,56607 \cdot 92$ | 0,93063.40 | 67 |
| 18 | $0,25002 \cdot 11$ | 8,87072.07 | $8,56426 \cdot 61$ | 0,94452.41 | 68 |
| 19 | 0,26391'11 | 8,85350.37 | 8,56251 72 | $0,95841 \cdot 42$ | 69 |
| 20 | 0,27780'12 | 8,83745.51 | 8,56083.01 | $0,97230 \cdot 42$ | 70 |
| 21 | 0,29169.13 | 8,82245 7.3 | $8,55920 \cdot 23$ | 0,9861943 | 71 |
| 22 | 0,30558•13 | 8,80840'92 | $8,55763 \cdot 15$ | 1,00008.43 | 72 |
| 23 | 0,31947.14 | 8,79522.32 | $8,55611.56$ | 1,01397.44 | 73 |
| 24 | $0,33336 \cdot 14$ | 8,78282.30 | 8,55465.23 | 1,02786.45 | 74 |
| 25 | $0,34725^{115}$ | 8,77114'14 | $8,55323^{\circ} 98$ | 1,04175*4. | 75 |
| 26 | $0,36114.16$ | $8,76011.94$ | $8,55187.62$ | 1,05564.46 | 76 |
| 27 | 0,37503.16 | $8,74970 \cdot 45$ | $8,55055.96$ | 1,0695.3.46 | 78 |
| 28 | $0,38802 \cdot 17$ | 8,73985 ${ }^{\circ}$ | 8,54928.82 | 1,08342.47 | 78 |
| 29 | 0,40281.17 | 8,73051.44 | $8,54806.03$ | 1,09731.48 | 79 |
| 30 | 0,41670.18 | 8,72165*99 | 8,54687*46 | 1,11120-48 | 80 |
| 31 | 0,43059•19 | 8,71.325.29 | 8,54572.89 | 1,12509*49 | 81 |
| 32 | 0,44448.19 | 8,70526.28 | $8,54462 \cdot 24$ | 1,13898*49 | $8_{2}$ |
| 33 | 0,45837.20 | 8,69766.18 | 8,54355'34 | 1,15287.50 | 83 |
| 34 | 0,47226.21 | 0,69042.48 | 8,54252*05 | 1,16676051 | 84 |
| 35 | 0,48615.21 | 8,68352.86 | 8,54152.24 | 1,18065*51 | 85 |
| 36 | 0,50004.22 | $8,67695 \cdot 24$ | 8,54055'79 | 1,19454*52 | 86 |
| 37 | $0,51393.22$ | 8,67067.67 | 8,53962.59 | 1,208430.52 | 87 |
| 38 | 0,52782.23 | 8,66468.37 | 8,53872.51 | 1,22232.53 | 88 |
| 39 | $0,54171 \times 24$ | 8,65895'73 | $8,53785 \cdot 45$ | 1,23621*54 | 89 |
| 40 | 0,55560. 24 | 8,65348.21 | 8,53701 28 | 1,25010. 54 | 90 |
| 41 | 0,56949'25 | 8,64824.42 | 8,53619.93 | 1,2639955 | 91 |
| 42 | 0,58338.25 | $8,64.323 .07$ | 8,53541-28 | 1,27788.55 | 92 |
| 43 | $0,59727 \cdot 26$ | 8,63842.97 | 8,53465.23 | 1,29177.56 | 93 |
| 44 | 0,61116.27 | $8,63382 \cdot 97$ | 8,53391*71 | 1,30566.57 | 94 |
| 45 | 0,62505.27 | 8,62942,06 | 8,53320.63 | 1,31955.57 | 95 |
| 46 | $0,63804^{\circ 28}$ | 8,62519.25 | 8,53251 89 | 1, $33344 \cdot 58$ | 96 |
| 47 | $0,65283 \cdot 28$ | $8,62113.63$ | $8,53185 \cdot 41$ | 1,34733.58 | 97 |
| 48 | 0,66672.29 | $8,61724^{\circ} 3^{6}$ | $8,53121 \cdot 14$ | 1,36122.59 | 98 |
| 49 | 0,68061.30 | $8,61350 \cdot 65$ | 8,53058.96 | 1,37511.60 | 99 |
| 50 | 0,69450:30 | 8,60991•73 | $\begin{aligned} & 8,52998 \cdot 83 \\ & 8.51188 .34 \end{aligned}$ | 1,38900'60 | $\begin{aligned} & 100 \\ & \text { Parp. } \end{aligned}$ |

## $3 \frac{8}{8}$ Por Cent.

| Years | Log. $\mathrm{m}^{\text {m }}$. | Log. $a^{\text {n }}$. | Log. $a^{\text {n }}$. | Log. ${ }^{\text {ra*. }}$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01441 55 | 0,01441 55 | 8,61658•14 | 0,73519'17 | 5 |
| 2 | 0,02883 ${ }^{10}$ | 9,72053.35 | 8,61339.61 | 0,74960'72 | 52 |
| 3 | 0,04324.66 | 9,55155'02 | 8,61033.67 | 0,76402.27 | 53 |
| 4 | 0,05766.21 | 9,43367\% 9 | 8,60739'76 | $0,77843.82$ | 54 |
| 5 | 0,07207.76 | 9,34379:82 | 8,60457.33 | $0,79285.37$ | 55 |
| 6 | 0,08649 31 | 9,27160.56 | $8,60185.85$ | 0,80726.93 | 56 |
| 7 | $0,10090 \cdot 87$ $0,11532 \cdot 42$ | $9,21160 \cdot 74$ $9,16052 \cdot 46$ | $8,59924 \cdot 85$ | $0,82168 \cdot 48$ $0,83610 \cdot 03$ | 57 |
| 9 | 0,12973.97 | 9,11624 14 | 8 8,59432.41 | 0,8,5051.58 | 59 |
| 0 | $0,14415.52$ | 9,07731 34 | 8,59200 13 | 0,86493.14 | 60 |
| 11 | 0,15857.07 | 9,04271.06 | 8,58976.61 | 0,87934:69 | 61 |
| 12 | 0,17298.63 | 9,01167.24 | 8,58761-47 | 0,89376.24 | 62 |
| 13 | 0,18740'18 | $8,98362 \cdot 11$ | 8,58554 37 | 0,90817.79 | 63 |
| 14 | 0,20181 73 | 8,95810 76 | 8,58354.97 | 0,92259'34 | 64 |
| 15 | 0,21623.28 | 8,93477.62 | 8,58162.94 | 0,93700.90 | 65 |
| 16 | ${ }^{0,23064.84}$ | $8,91333.99$ | $8,57977 \cdot 98$ | 0,95142.45 | 66 |
| 17 | $0,24506.39$ 0,25947 | $8,89356 \cdot 40$ $8,87525 \cdot 43$ | $8,57790 \cdot 8 \mathrm{x}$ $8,57628 \cdot 15$ | $0,96584.00$ $0,98025.55$ | 67 |
| 19 | ${ }^{0,27380}{ }^{4} 49$ | $8,85824 \cdot 80$ | 8,57462'75 | 0,99467.11 | 69 |
| 20 | $0,28831 \% 5$ | 8,84240 71 | 8,57303.32 | 1,00908.66 | 70 |
| 21 | 0,30272.60 | 8,82761.44 | 8,57149.67 | 1,02350:21 | 71 |
| 22 | 0,31714.15 | 8,81376•87 | 8,57001 $\cdot 56$ | 1,03791 76 | 72 |
| 23 | 0,33155'70 | 8,80078.24 | 8,56858.74 | 1,05233.31 | 73 |
| 24 | $0,34597 \cdot 25$ | 8,78857.90 | 8,56721.04 | 1,06674:87 | 74 |
| 25 | $0,36038.81$ | 8,77700.16 | $8,56588 \cdot 25$ | 1,08116.42 | 75 |
| 26 | 0,37480.36 | 8,76626.12 | $8,56460 \cdot 18$ | 1,0955797 | 76 |
| 27 | $0,38921.91$ | 8,75603.53 | $8,56336 \cdot 65$ | 1,10999.52 | 77 |
| 28 | 0,40363.46 | 8,74636.72 | 8,56217.50 | 1,12441 ${ }^{\circ} 8$ | 78 |
| 29 | 0,41805.02 | $8,73721.51$ | 8,56102.52 | 1,13882.63 | 79 |
| 30 | $0,43246 \cdot 57$ | 8,72854 17 | 8,55991-60 | 1,15324.18 | 80 |
| 31 | 0,44688•12 | 8,72031.32 | 8,55884.57 | 1,16765.73 | 1 |
| 32 | 0,46129.67 | 8,71249:89 | 8,55781.29 | 1,18207.29 | 82 |
| 33 | 0,47571-22 | 8,70507.13 | 8,55681.61 | 1,19648-84 | 8.3 |
| 34 | 0,49012.78 | 8,69800.50 | 8,55585.40 | 1,21090.39 | 84 |
| 35 | $0,504544^{33}$ | 8,69127.71 | $8,55492 \cdot 53$ | 1,22531.94 | 85 |
| 36 | 0,51895.88 | 8,68486.66 | 8,55402.88 | 1,23973.49 | 86 |
| 37 | 0,53337.43 | 8,67875.41 | $8,55316.34$ | 1,25415 ${ }^{\circ}$ | 87 |
| 38 | 0,547788 | $8,67292 \cdot 19$ | 8 8,55232.79 | 1,26856.60 |  |
| 49 | $0,56220.54$ $0,57662.09$ | $8,66735.37$ $8,66203.45$ | $8,55152 \cdot 12$ $8,55074 \cdot 23$ | $1,28298 \cdot 15$ 1,29739 | 89 |
| 41 | 0,59103.64 | 8,65695 ${ }^{\circ}$ or | 8,54999.00 | 1,31181-26 | 91 |
| 42 | 0,60545•19 | 8,65208.77 | 8,54926.35 | 1,32622.81 | 92 |
| 43 | 0,61986-75 | 8,64743'53 | 8,54856.21 | 1,34064:36 | 93 |
| 44 | $0,63428 \cdot 30$ | $8,64298 \cdot 18$ | 8,54788.44 | 1,35505.91 | 94 |
| 45 | 0,64869 85 | $8,63876 \cdot 66$ | 8,54723.01 | 1,3694746 | 95 |
| 46 | 0,66311.40 | $8,63463 \cdot 02$ $8,63071.35$ | 8,5465979 | 1,38389 ${ }^{\circ} \mathrm{O}$ | 96 |
| 47 | $0,67752 \cdot 96$ $0,69194 \cdot 51$ | $8,63071 \cdot 35$ $8,62695 \cdot 79$ | $8,54598 \cdot 73$ 8,54539 | $1,39830 \cdot 57$ $1,41272 \cdot 12$ | 97 |
| 49 | -0,70636.06 | 8,623,5.56 | 8,54539 $8,54482.77$ | 1,442713.67 | 98 99 |
| 50 | 0,72077 ${ }^{\text {¢ }}$ I | 8,61989.91 | $\begin{aligned} & 8,54427 \% \\ & 8,52827 \end{aligned}$ | 1,44155.23 | $100$ |

For explanation see pp. 216-228

## $3 \frac{1}{2}$ Per Cent.

| Years | Log. ${ }^{\text {ang.}}$ | Log. $a^{\text {n }}$ | Log. $a^{\prime \prime}$. | Log. ${ }^{\circ}$. | Yearn |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01494.03 | 0,01494.03 | 8,62656.17 | 0,76195.78 | 51 |
| 2 | 0,02988.07 | 9,72131.63 | 8,62350'03 | 0,77689.82 | 52 |
| 3 | 0,04482.10 | 9,55258.81 | 8,62056.28 | $0,79183.85$ | 53 |
| 4 | 0,05976.14 | 9,43496.97 | 8,61774.35 | 0,80677.89 | 54 |
| 5 | 0,0747017 | 9,34533 ${ }^{\prime}{ }^{2}$ | $8,61503.66$ | 0,82171 ${ }^{0} 92$ | 55 |
| 6 | 0,08964.21 | 9,27339 07 | 8,61243'73 | 0,83665.96 | 56 |
| 7 | 0,10458'24 | 9,21363.59 | 8,60994.06 | 0,85159'99 | 57 |
| 8 | 0,11952.28 | 9,16279.32 | 8,60754.19 | 0,86654 03 | 58 |
| 9 | 0,13446.31 | 9,11874\%74 | $8,60523 \cdot 67$ | 0,88148.06 | 59 |
| 10 | 0,14940'35 | 9,08005'39 | 8,60302.11 | 0,89642'10 | 60 |
| 11 | 0,16434*38 | 9,04568.37 | 8,60089.11 | 0,91136.13 | 61 |
| 12 | 0,17928*42 | 9,01487.30 | 8,59884.30 | $0,92630 \cdot 17$ | 62 |
| 13 | 0,19422.45 | 8,98704*74 | 8,59687.33 | 0,94124.20 | 63 |
| 14 | 0,20916.49 | 8,96175.67 | 8,59497.87 | 0,95618.24 | 64 |
| 15 | $0,22410{ }^{\circ} 2$ | 8,93864.5 ${ }^{\text {I }}$ | 8,59315.60 | 0,97112.27 | 65 |
| 16 | 0,23904*5 | 8,01742.58 | $8,59140 \cdot 20$ | 0,98606-3I | 66 |
| 17 | 0,25398*59 | 8,89786.42 | $8,58971.42$ | 1,00100:34 | 67 |
| 18 | 0,26892.63 | 8,87976. 57 | 8,58808.95 | 1,01594.38 | 68 |
| 19 | 0,28386.66 | 8,86296•78 | 8,58652.57 | 1,03088.41 | 69 |
| 20 | 0,29880'70 | 8,84733 ${ }^{\circ} 25$ | 8,58502.01 | 1,04582.45 | 70 |
| 2 I | 0,31374*73 | 8,83274.26 | 8,58357 ${ }^{\circ} \mathrm{O}$ | 1,060\%6.48 | 71 |
| 22 | 0,32868.77 | 8,81909.67 | $8,58217^{\circ} 40$ | 1,07570.52 | 72 |
| 23 | 0,34362.80 | 8,80630 76 | 8,58082.92 | 1,09064.55 | 73 |
| 24 | -, $35856 \cdot 84$ | 8,79429.86 | 8,57953.39 | 1,10558.59 | 74 |
| 25 | 0,37350.87 | 8,78300'29 | 8,57828.60 | 1,12052.62 | 75 |
| 26 | 0,38844.91 | 8,77236.13 | 8,57708:38 | 1,13546.66 | 76 |
| 27 | $0,40338 \cdot 94$ | 8,76232.15 | 8,57592'53 | 1,15040.69 | 77 |
| 28 | $0,41832 \cdot 08$ | 8,75283.67 | 8,57480.89 | 1,16534.73 | 78 |
| 29 | 0,43327 01 | 8,74386.54 | 8,57373.31 | 1,18028*66 | 79 |
| 30 | 0,44821.05 | 8,73536.99 | 8,5726961 | 1,19522.80 | 80 |
| 31 | 0,46315*08 | 8,72731-67 | 8,57169.65 | 1,21016.83 | 81 |
| 32 | $0,4780{ }^{\prime} \cdot 12$ | 8,7196752 | 8,57073.29 | 1,22510.87 | 82 |
| 33 | $0,4930{ }^{\circ}{ }^{\circ} 5$ | 8,71241 75 | 8,56980.39 | 1,24004.90 | 83 |
| 34 | 0,50797*19 | 8,7055187 | 8,56890.83 | 1,25498.94 | 84 |
| 35 | 0,52291.22 | 8,69895.57 | 8,56804.46 | 1,26992-97 | 85 |
| 36 | 0,53785.26 | 8,69270.74 | 8,56721'18 | 1,2848701 | 86 |
| 37 | 0,55279.29 | 8,68675.46 | 8,56640'87 | 1,29981.04 | 87 88 |
| 38 | -,56773.33 | 8,68107.96 | 8,56563.41 | 1,31475'08 | 88 80 |
| 39 | 0,58267.36 | $8,67566 \cdot 61$ $8,67049 \cdot 89$ | $8,56488 \cdot 71$ $8,56416.65$ | $1,32969 \cdot 11$ 1,34463.15 | 89 90 |
| 40 | 0,59761.40 | 8,67049 89 | 8,56416.65 | 1,34463. 15 | 90 |
| 41 | $0,61255^{\circ} 43$ | 8,66556-43 | 8,56347.14 | 1,35957.18 | 91 |
| 42 | 0,62749*47 | 8,66084 ${ }^{\circ}{ }^{2}$ | 8,56280'09 | 1,37451-22 | 92 |
| 4.3 | 0,64243.50 | 8,65634.16 | $8,56215{ }^{11}$ | 1,38945.25 | 93 |
| 44 | 0,65737.54 | 8,65203.04 | $8,56153.00$ | 1,40439.29 | 94 |
|  | 0,67231•57 | 8.64790 .53 | 8,56092'79 | 1,41933.32 | 95 |
| 46 | 0,68725.61 | 8,64395.66 | 8,56034.69 | 1,43427.36 | 96 |
| 47 | 0,70219.64 | 8,64017.52 | $8,55978 \cdot 64$ | 1,44921'39 | 97 |
| 48 | 0,71713.68 | $8,63655.27$ $8,63308 \cdot 1$ | $8,55924.54$ | 1,46415 1,47909*46 | 98 99 |
| 49 | 0,73207.71 | 8,63308.11 |  | $1,47909 \cdot 46$ |  |
| 50 | 0,74701 75 | 8,62975 ${ }^{\text {I }}$ | $\begin{aligned} & 8,55821.06 \\ & 8,54406 \cdot 80 \end{aligned}$ | 1,49403.50 | $\begin{aligned} & 100 \\ & \text { Perp } \end{aligned}$ |

## $3 \frac{6}{8}$ Per Cent.

| Years | Log. 5 . | log. $a^{\text {n }}$ | Log. $a^{\text {m }}$ 。 | Log. ${ }^{2}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01546.45 | 0,01546.45 | 8,63641 15 | 0,78869.17 | 51 |
| 2 | 0,03092 91 | 9,72209.80 | 8,63347 ${ }^{\circ}$ | 0,80415 63 | 52 |
| 3 | 0,04639 36 | 9.55362 .44 | 8,63065 02 | 0,81962.08 | 53 |
| 4 | 0,06:85.82 | 9,43625'72 | 8,62794'62 | 0,8,3508•54 | 54 |
| 5 | 0,07732.27 | $9.3468: 31$ | 8,625.35.28 | 0,85054.99 | 55 |
| 6 | 0,0927873 | 9,27517'19 | 8,62286.45 | 0,86601 44 | 56 |
| 7 | 0,10825'18 | 9,21565.94 | 8,62047.69 | 0,8814790 | 57 |
| 8 | 0,12371 63 | 9,16505'60 | 8,61818.52 | 0,89694.35 | 58 |
| 9 | 0,13918.09 | 9,12124.62 | 8,61598.50 | $0,91240.81$ | 59 |
| 10 | 0,15464'54 | 9,08278•59 | 8,61387.22 | 0,92787 ${ }^{-26}$ | 60 |
| 1 | $0,17011{ }^{\circ}$ | 9,04864.47 | 8,6118431 | 0,94,3.3372 | 61 |
| 12 | 0,18557.45 | 9,01806.22 | 8,60989.39 | $0,95880 \cdot 17$ | 62 |
| 13 | 0,20103.91 | 8,99046.07 | 8,60802 13 | 0,97426.62 | 63 |
| 14 | 0,21650.36 | 8,96539 11 | $8,60622 \cdot 17$ | 0,98973 ${ }^{\circ} 08$ | 64 |
| 5 | 0,23196.82 | 8,94249'77 | 8,60449.21 | 1,00519*53 | 65 |
| 16 | $0,24743.27$ | 8,92149 36 | 8,60282'94 | 1,02065*99 | 66 |
| 17 | 0,26289 ${ }^{\circ} 2$ | 8,90214.42 | 8,60123'11 | 1,03612.44 | 67 |
| 18 | 0,278,36.18 | 8,88425'49 | 8,59969.41 | 1,05158.90 | 68 |
| 19 | $0,29382 \cdot 63$ | 8,86766.32 | 8,59821.61 | 1,06705-35 | 69 |
| 20 | $0,30929.09$ | 8,85223.13 | 8,59679*46 | 1,08251.81 | 70 |
| 21 | 0,32475.54 | 8,83784 ${ }^{\text {-18 }}$ | 8,59542'71 | 1,09798.26 | 71 |
| 22 | 0,34022 ${ }^{\circ}$ | 8,82439'36 | 8,59411•16 | 1,11344'71 | 72 |
| 23 | 0,35568.45 | 8,81179.91 | 8,59284.57 | 1,12891 17 | 73 |
| 24 | 0,3711490 | 8,79998.20 | $8.59162 \cdot 77$ | 1,144.37 ${ }^{\circ} 62$ | 74 |
| 25 | 0,38661-36 | 8,7888-52 | 8,59045.57 | 1, 15984.08 | 75 |
| 26 | 0,40207.81 | $8,77841.97$ | 8,58932.74 | ェ, $17530 \cdot 53$ | 76 |
| 27 | 0,41754.27 | 8,76856.32 | $8,58824.15$ | 1,19076.99 | 77 |
| 28 | 0,4330072 | 8,75925.90 | 8,58719.61 | 1,20623 44 | 78 |
| 29 | $0,44847 \cdot 18$ | 8,75046'55 | 8,58618.97 | 1,22169.89 | 79 |
| 30 | 0,46393.63 | 8,74214.50 | 8,58522.07 | 1,23716.35 | 80 |
| 31 | 0,47940.09 | 8,73426.39 | 8,58428.77 | 1,25262.80 | 81 |
| 32 | 0,49486.54 | 8,72679'19 | 8,58338.91 | 1,26809.26 | 82 |
| 33 | 0,5103299 | 8,71970'10 | 8,58252:38 | 1,28355'71 | 83 |
| 34 | 0,52579.45 | 8,71296.62 | 8,58169.04 | 1,29902•17 | 84 |
| 35 | 0,54125.90 | 8,70656.48 | 8,58088.76 | 1,31448.62 | 85 |
| 36 | 0,55672.36 | 8,70047-54 | 8,58011.44 | 1,32995 07 | 86 |
| 37 | $0,572 \mathrm{r} 8$-81 | 8.69467 .89 | 8,57936.95 | 1,34541'53 | 87 |
| 38 | 0,58765.27 | 8,68915.74 | 8,57865.18 | 1,36087.98 | 88 |
| 39 | 0,6031172 | 8,68389.49 | 8,5779603 | 1,37634,44 | 89 |
| 40 | $0,61858 \cdot 17$ | 8,67887.63 | 8,57729.41 | 1,39180.89 | 90 |
| 41 | $0,63404 \cdot 63$ | 8,67408 76 | 8,57665.23 | 1,40727.35 | 9 I |
| 42 | 0,64951 08 | 8,66951'59 | 8,57603.37 | 1,42273.80 | 92 |
| 43 | 0,66497.54 | 8.66514 .94 | 8,5754.35 | 1,43820. 26 | 93 |
| 44 | 0,68043'99 | 8.66097 .69 | $8,57486.30$ | 1,45366.71 | 94 |
| 45 | 0,69590-45 | 8,6569879 | 8,57430.94 | 1,46913.16 | 95 |
| 46 | 0,71136.90 | 8,65317.29 | 8,57377.57 | 1,48459.62 | 96 |
| 47 | 0,72683.35 | 8,64952.28 | 8,57326.15 | 1,50006.07 | 97 |
| 48 | 0,7422981 | 8,64602 ${ }^{\text {822 }}$ | 8,57276.57 | 1,51552.53 | 98 |
| 49 | 0,75776.26 | 8,64268.44 | 8,57228-78 | 1,53098.98 | 99 |
| 50 | 0,77322.72 | 8,63948'08 | $\begin{aligned} & 8,57182 \cdot 7 x \\ & 8,55930 \cdot 80 \end{aligned}$ | 1. $54645 \cdot 44$ | $\left\lvert\, \begin{aligned} & \text { roo } \\ & \text { Perp. } \end{aligned}\right.$ |

## $3 \frac{3}{4}$ Per Cent.

| Years | Log. ${ }^{\text {mb }}$. | Log. $a^{\text {n }}$. | Log. $a^{\text {a }}$. | Log. ${ }^{\text {m }}$. | Year |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01598.81 | 0,01598.81 | 8,64613.25 | 0,81539.34 | 51 |
| 2 | 0,03197.62 | 9,72287-86 | 8,64330'69 | 0,83138.15 | 52 |
| 3 | 0,04796.43 | 9,55465.88 | 8,64060.06 | 0,84736.96 | 53 |
| 4 | 0,06395.24 | 9,43754.25 | 8,63800.81 | 0,86335 77 | 54 |
| 5 | 0,07994.05 | 9,34840'59 | 8,63552.38 | 0,87934.58 | 55 |
| 6 | 0,09592.86 | 9,27694'92 | 8,63314.26 | 0,89533.39 | 56 |
| 7 | 0,1119167 | 9,21767 79 | 8,63085'99 | 0,91132.20 | 57 |
| 8 | $0,12790 \cdot 48$ | 9,16731.26 | 8,62867*09 | 0,92731 ${ }^{\text {O1 }}$ | 58 |
| 9 | 0,14389*29 | 9,1237379 | 8,62657'14 | $0,94329.82$ | 59 |
| 10 | 0,15988'11 | 9,08550'94 | 8,62455*74 | 0,95928.63 | 60 |
| 1 | 0,17586.92 | 9,05159.71 | 8,62262.50 | 0,97527.44 | 61 |
| 12 | 0,19185:73 | 9,02124.02 | 8,62077.05 | 0,99126.25 | 62 |
| 13 | 0,20784.54 | 8,99386.12 | 8,61899.06 | 1,00725.06 | 63 |
| - 1 | 0,22383.35 | 8,9690I'II | 8,61728•18 | 1,02323.87 | 64 |
| 15 | 0,23982.16 | 8,94633.40 | 8,61564 11 | 1,03922.69 | 65 |
| 16 | 0,25580.97 | $8,92554.32$ | $8,61406 \cdot 56$ | 1,05521.50 | 66 |
| 17 | 0,27179.78 | 8,90640 | 8,61255 ${ }^{\circ} \mathbf{8}$ | 1,07120:31 | 67 |
| 18 | 0,28778.59 | $8,88872 \cdot 20$ | 8,61109.89 | 1,08719*12 | 68 |
| 19 | 0,30377.40 | 8,872,33.45 | 8,60970.26 | 1,10317.93 | 69 |
| 20 | 0,31976.21 | 8,85710'38 | 8,60836.09 | 1,11916.74 | 70 |
| 21 | $0,33575^{\circ} \mathrm{O}$ | 8,84291. 25 | 8,60707.15 | 1,13515.55 | 71 |
| 22 | 0,35173.83 | 8,82965.95 | $8,60583.25$ | 1,15114.36 | 73 |
| 23 | 0,36772'64 | 8,81725.72 | 8,60464 16 | 1,16713.17 | 73 |
| 24 | 0,38371*45 | $8,80562 \cdot 03$ | 8,60349'67 | 1,18311.98 | 74 |
| 25 | 0,39970:26 | 8,79470.89 | 8,60239.62 | 1,19910'79 | 75 |
| 26 | $0,41569.07$ | 8,78443.69 | 8,60133.80 | 1,21509.60 | 76 |
| 27 | 0,43167.88 | 8,77476.09 | 8,60032.05 | 1,23108.41 | 77 |
| 28 | 0,44766.70 | $8,76563 \cdot 43$ | 8,59934.21 | 1,24707.22 | 78 |
| 29 | $0,46365 \cdot 51$ | 8,75701.55 | $8,59840 \cdot 11$ | 1,26306.03 | 79 |
| 30 | 0,4796432 | 8,74886.70 | 8,59749'60 | 1,27904.84 | 80 |
| 31 | 0,49563.13 | 8,74115.52 | 8,59662.54 | 1,29503.65 | 81 |
| 32 | $0,51161.94$ | 8,73384.95 | 8,59578.79 | 1,31 102.46 | 82 |
| 33 | 0,52760'75 | 8,72692.23 | 8,59498.22 | 1,32701•27 | 83 |
| 34 | 0,54359-5 | $8,72034.85$ | 8,59420'71 | 1,34300.09 | 84 |
| 35 | $0,55958 \cdot 37$ | $8,71410.50$ | $8,59346 \cdot 13$ | 1,35898.90 | 85 |
| 36 | 0,57557*18 | 8,70817.10 | 8,59274;37 | 1,37497.71 | 86 |
| 37 | 0,59155.99 | 8,70252.72 | 8,59205.31 | 1,39096.52 | 87 |
| 38 | 0,60754.80 | 8,69715.60 | 8,59138.85 | 1,40695.33 | 88 |
| 39 | $0,6235.361$ | 8,69204 10 | 8,59074.89 | 1,42294'14 | 89 |
| 40 | $0,6395{ }^{2} 4^{2}$ | 8,68716.73 | 8,59013'33 | 1,43892.95 | 90 |
| 41 | $0,65551 \cdot 23$. | $8,68252^{\circ} 09$ | $8,58954 \cdot 08$ | 1,45491•76 | 91 |
| 42 | 0,6\%15004 | 8,67808.90 | $8,58897 \cdot 05$ | 1,47090' 57 | 92 |
| 43 | 0,68748.85 | $8,67385 \cdot 97$ | 8,58842'14 | 1,48680:38 | 93 |
| 44 | 0,7034766 | 8,66982'19 | 8,5878929 | 1,50288-19 | 94 |
| 45 | 0,71946.47 | $8,66596 \cdot 5^{2}$ | $8,58738 \cdot 41$ | 1,5188j-00 | 95 |
| 46 | 0,73545:28 | 8,66228 ${ }^{\circ}$ | 8,58689 ${ }^{82}$ | 1,53485.81 | 96 |
|  | $0,75144^{\circ} 10$ | 8,65875.75 | 8, $58642 \cdot 26$ | 1,55084.62 | 97 |
| 48 | 0,76742.91 | 8,65538.91 | $8,58596 \cdot 86$ | 1,56683.43 | 98 |
| 49 | $0,78341 \cdot 5$ | 8,65216.69 | 8.58553 .13 | $1,58282 \cdot 24$ | 99 |
| 50 | $0,79940 \cdot 5$ | 8,64908 37 | $\begin{aligned} & 8,58511 \cdot 03 \\ & 8,57403 \cdot 13 \end{aligned}$ | 1,59881.0.5 | $1 \begin{aligned} & 100 \\ & \text { Perp. } \end{aligned}$ |

$3 \frac{1}{8}$ Per Cent.

| Years | Log. m | Log. $a^{\text {a }}$ | Log. $a^{\text {a }}$ | Log. $r^{\text {m }}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01651'10 | 0,01651-10 | 8,65572.64 | 0,84206.29 | 51 |
| 2 | 0,03302.21 | 9,72365 ${ }^{\text {- }}$ 1 | 8,65301 26 | 0,8585739 | 52 |
| 3 | 0,04953.31 | 9,55569.16 | 8,65041 60 | 0,87508.50 | 53 |
| 4 | 0,06604:41 | 9,43882.53 | 8,64793.08 | 0,89159.60 | 54 |
| 5 | 0,08255. ${ }^{2}$ | 9,34993.56 | 8,64555'17 | 0,90810 | 55 |
| 6 | 0,09906.62 | 9,27872.24 | 8,6432735 | 0,92461 ${ }^{\text {81 }}$ | 56 |
| 7 | 0,11557.73 | 9,21969 15 | 8,64109'16 | 0,94112.91 | 57 |
| 8 | 0,13208.83 | 9,16956.32 | $8,63900 \cdot 14$ | 0,95764'01 | 58 |
| 9 | 0,14859\%3 | 9,12622.23 | 8,63699 86 | 0,97415.12 | 59 |
| 10 | $0,16511.04$ | 9,08822'45 | 8,63507'92 | 0,99066.22 | 60 |
| 11 | 0,18162.14 | 9,05453.96 | 8,63323.94 | 1,0071732 | 61 |
| 12 | 0,19813.24 | 9,02440.69 | $8,63147^{\circ} 56$ | 1,02368.43 | 62 |
| 13 | 0,21464*35 | 8,99724 88 | 8,62978.43 | 1,04019'53 | 63 |
| 14 | 0,2311545 | 8,97261 65 | $8,62816 \cdot 23$ | 1,05670.64 | 64 |
| 15 | 0,24766-56 | 8,9501542 | $8,62660 \cdot 65$ | 1,07321.74 | 65 |
| 16 | 0,26417.66 | 8,92957.49 | $8,62511{ }^{80}$ | 1,08972.84 | 66 |
| 17 | 0,28068.76 | 8,9106439 | 8,62368.20 | 1,10623.95 | 67 |
| 18 | 0,29719•87 | 8,89316 ${ }^{\circ} 2$ | 8,62230 79 | 1,12275.05 | 68 |
| 19 | 0,31370'97 | 8,87698 17 | 8,62098.91 | 1,13926.15 | 69 |
| 20 | $0,33022 \cdot 07$ | 8,86195 ${ }^{\circ}$ ( | 8,61972 33 | 1,15577.26 | 70 |
| 21 | 0,34673.18 | 8,84795.47 | $8,61850 \cdot 82$ | 1,17228.36 | 1 |
| 22 | 0,36324.28 | 8,83489 44 | 8,61734 17 | 1,18879*46 | 72 |
| 23 | 0,37975'38 | 8,82268.19 | 8,61622.15 | 1,205.30.57 | 73 |
| 24 | 0,39620.49 | 8,81 124.08 | 8,6151459 | 1,22181.67 | 74 |
| 25 | 0,41277.59 | 8,80050.41 | 8,61411.30 | 1,2,383278 | 75 |
| 26 | 0,42928.70 | 8,79041 29 | 8,61312'08 | 1,25483.88 | 76 |
| 27 | 0,44579.80 | 8,78091.47 | 8,61216.79 | 1,27134.98 | 77 |
| 28 | 0,46230.90 | 8,77196.29 | $8,61125^{\circ} 24$ | 1,28786.09 | 78 |
| 29 | 0,47882 ${ }^{\text {OII }}$ | $8,76351 \cdot 60$ | $8,61037 \cdot{ }^{\circ}$ | 1,30437'19 | 79 |
| 30 | $0,49533 \cdot 11$ | 8,7555366 | 8,60952'79 | 1,32088.29 | 80 |
| 3 I | $0,51184.21$ | 8,74799 08 | 8,60871 60 | 1,33739.40 | 81 |
| 32 | $0,52835.32$ | $8,74084 \cdot 85$ | $8,60730 \cdot 58$ | $1,35390{ }^{\circ} 5$ | 82 |
| 33 | $0,54486 \cdot 42$ | 8,73408-17 | 8,60718.60 | 1,37041 \% | 83 |
| 34 | $0,56137.53$ | 8,72766.54 | 8,60646.54 | 1,38692.71 | 84 |
| 35 | 0,57788.63 | 8,7215769 | 8,60577.28 | 1,40343.81 | 85 |
| 36 | 0,59439*73 | $8,71579.50$ | $8,60510 \cdot 72$ | 1,41994.92 | 86 |
| 37 | 0,61090.84 | $8,71030.06$ | 8,60446•73 | 1,43646.02 | 87 |
| $3^{8}$ | 0,62741.94 | 8,70,507.60 | $8,60385^{-22}$ | 1,45297.12 | 88 |
| 39 | 0,64393'04 | $8,70010 \cdot 51$ | 8,60326.08 | 1,46948. 23 | 89 |
| 40 | 0,66044'15 | 8,69537 ${ }^{26}$ | 8,60269:23 | 1,48599'33 | 90 |
| 41 | 0,67695.25 | 8,69086.51 | $8,60214.55$ | 1,50250'43 | 91 |
| 42 | 0,69346.35 | 8,68656.93 | 8,60162.00 | 1,51901.54 | 92 |
| 43 | 0,70997 ${ }^{46}$ | 8,68247.36 | $8,60111.46$ | 1,53552.64 | 93 |
| 44 | 0,72648.56 | 8,67856.68 | 8,60062.86 | 1,5520375 | 94 |
| 45 | 0,74299.67 | 8,67483.87 | 8,60016.13 | 1,56854.85 | 95 |
| 46 | $0,75950 \cdot 77$ $0,7760 \pm 8$ | $8,67127.97$ $8,66788.07$ | $8,59971 \cdot 18$ $8,59927 \cdot 96$ | $1,58505.95$ $1,60157.06$ | 96 |
| 478 | $0,77601.87$ $0,79252.98$ | $8,66788 \cdot 07$ $8,66463 \cdot 35$ | $8,59927 \cdot 96$ $8,59886 \cdot 40$ | $1,60157.06$ 1,61808'16 | 97 |
| 49 | 0,80904 | 8,66153.02 | 8,59846.42 | 1,63459'26 | 98 |
| 50 | $0,82555 \cdot 18$ | 8,658.9635 | $\begin{aligned} & 8,59807 \cdot 96 \\ & 8,58827 \cdot 17 \end{aligned}$ | 1,65110.37 | $\begin{aligned} & 100 \\ & \text { Perp. } \end{aligned}$ |

For explanation see pp. 216-228

## 4 Per Cone

| Years | Log. r". | Log. $a^{\text {n}}$. | Log. $a^{n}$. | Log. re. | Yeara |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01703.33 | 0,01703.33 | 8,66519 ${ }^{48}$ | 0,86870.03 | 51 |
| 2 | 0,03406.67 | 9,72443.65 | 8,66258.00 | ¢,88573.36 | 52 |
| 3 | 0,05110.00 | 9,55672.28 | 8,66009.81 | 0,90276.70 | 53 |
| 4 | 0,06813.34 | $9.44010 \cdot 59$ | 8,65771 64 | 0,91980.03 | 54 |
| 5 | $0,08516.67$ | 9,3,546.22 | 8,65543.85 | 0,93683.37 | 55 |
| 6 | 0,10220.00 | 9,28049•16 | 8,65325.96 | 0,95386.70 | 50 |
| 7 | 0,11923.34 | 9,22 $1700^{\circ} 1$ | 8,65117.45 | 0,97090.03 | 57 |
| 8 | 0, 13626.67 | 9,17180.78 | 8,64917.91 | 0,98793.37 | 58 |
| 9 | $0,15330 \cdot 01$ | 9,12869.97 | $8,64726.91$ | 1,00496.70 | 59 |
| 10 | -, 17033.34 | 9,09093'12 | 8,64544 ${ }^{\circ}$ | 1,02200\%4 | 60 |
| 11 | $0,18736 \cdot 67$ | 9,05747.23 | 8,64368.93 | 1,03903.37 | 61 |
| 12 | $0,20440 \cdot 01$ | 9,02756.23 | 8,64201 22 | 1,05606.70 | 62 |
| 13 | 0,22143.34 | 9,00062:38 | 8,64040'56 | 1,07310.04 | 63 |
| 14 | $0,23846 \cdot 68$ | 8,97620.77 | $8,63886.64$ | 1,09013.37 | 64 |
| 15 | 0,25550\%1 | 8,95395.82 | $8.63739 \cdot 16$ | 1,10716.71 | 65 |
| 16 | 0,2:25.3.34 | 8,93358.85 | 8,63597 82 | 1,12420.04 | 66 |
| 17 | 0,28956.68 | $8,91486.40$ | 8,63462.35 | 1,14123.37 | 67 |
| 18 | 0,3066001 | 8,89759 04 | $8,63332 \cdot 48$ | 1,15826.71 | 68 |
| 19 | $0,32363.34$ | 8,88160.50 | 8,63207.97 | 1,17530.04 | 69 |
| 20 | $0,34066 \cdot 68$ | 8,866:7.02 | 8,63088 59 | 1,19233.38 | 70 |
| 21 | 0,35770'01 | 8,85296.84 | 8,62974 11 | 1,20936.71 | 71 |
| 22 | 0,37473.35 | 8,84009.86 | 8,62864*32 | 1,22640.04 | 72 |
| 23 | 0,39176.68 | 8,82807.35 | $8,62759^{\circ} \mathrm{O}$ | 1,24.34.3.38 | 73 |
| 24 | 0,40880.01 | 8,8168I•66 | 8,62657.99 | 1,26046.71 | 74 |
| 25 | 0,42583:35 | $8.80626 \cdot 12$ | $8,62561.08$ | 1,27750.04 | 75 |
| 26 | $0,44286 \cdot 68$ | $8.70634 \cdot 80$ | 8,62468.09 | 1,29453'3 ${ }^{8}$ | 76 |
| 27 | 0,45990.02 | $8.78702 \cdot 48$ | 8,62378.89 | 1,31156.71 | 77 |
| 38 | 0,47693.35 | $8,77824.52$ | $8,62293.26$ | 1,32860.05 | 78 |
| 29 | 0,49396.68 | 8,76996.73 | 8,62211911 | 1,34563.38 | 79 |
| 30 | $0,51100 \cdot 02$ | 8,76215 ${ }^{\circ}$ | 8,62132.25 | 1,36266.71 | 80 |
| 31 | 0,52803.35 | 8,75477.14 | 8,62056.56 | 1,37970.05 | 81 |
| 32 | 0,5450669 | 8,74778.92 | $8,61983.91$ | 1,39673.38 | 82 |
| 33 | $0,56210 \cdot 02$ | 8,74117.97 | $8,61914.16$ | 1,41376.72 | 83 |
| 34 | 0,57913.35 | 8,73491.80 | 8,61847.21 | 1,4.3080.05 | 84 |
| 35 | 0,59616.69 | 8,72898.10 | $8,61782.92$ | 1,44783.38 | 85 86 |
| 36 | $0,61320{ }^{\circ} 0$ ? | $8,723.34{ }^{80}$ | 8,6172r 20 | 1,46486.72 | 86 |
| 37 | 0,63023.36 | $8,71799^{\circ} 95$ | $8,6166 r \cdot 94$ | 1,48190.05 | 87 88 |
| $3^{8}$ | 0,64726.69 | 8,71291.83 | $8,61605 \cdot 03$ | 1,49893.39 | 88 89 |
| 39 | 0,66430.02 | $8,70808 \cdot 79$ | 8,61550.38 | $1,51596 \cdot 72$ $1,53300 \cdot 0$ | 89 90 |
| 40 | $0,68133.36$ | 8,70349.33 | 8,61497*89 | 1,53300.05 | 90 |
| 41 | 0,69836.69 | 8,69912.09 | 8,61447 ${ }^{48}$ | 1,55003 ${ }^{\circ} 39$ | 91 |
| 42 | 0,71540.03 | 8,69495*78 | 8,61399.08 | 1,56706'72 | 92 |
| 43 | 0,73243.36 | 8,69099.20 | $8,61352 \cdot 58$ | 1,58410'06 | 93 |
| 44 | 0,74946.69 | 8,68721.27 | 8,61307.91 | 1,60113.39 | 94 |
| 45 | 0,76650.03 | 8,68360.94 | 8,61265.01 | 1,61816.72 | 95 |
| 46 | 0,78353.36 | 8,68017.27 | 8,61223.80 | 1,63520.06 | 96 |
| 47 | $0,80056.69$ | 8,67689.37 | $8,61184.21$ | 1,65223.39 | 97 |
| 48 | 0,81760.03 | 8,67376.39 | $8,61146 \cdot 18$ | 1,66926.73 | 98 |
| 49 | 0,83463.36 | 8,67077.56 | 8,61109.64 | 1,68630.06 | 99 |
| 50 | 0,85166.70 | 8,66792•16 | 8,61074.53 <br> 8,60206.00 | 1,70333'39 | $\left.\right\|_{\text {Perp }} ^{100}$ |

## $4 \frac{1}{8}$ Per Cent.

| Years | Lag. $r^{\text {º. }}$ | Log. $a^{\text {n }}$. | Log. $a^{\text {n }}$. | Log. $r^{*}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0,01755.50 | 0,01755.50 | 8,67453.95 | 0,89530'57 | 51 |
| 2 | $0,03511 \cdot 0$ | 9,72521.38 | 8,67203•78 | 0,91286.07 | 52 |
| 3 | 0,0.5266.50 | 9,55775.22 | 8,66964•88 | 0,93041.58 | 53 |
| 4 | 0,07022 01 | 9,44138.41 | 8,66736.68 | 0,94797.08 | 54 |
| 5 | $0,08777.51$ | 9,35298.56 | 8,66518.65 | $0,96552 \cdot 58$ | 55 |
| 5 | $0,10533 \cdot 1$ | 9,28225 ${ }^{\circ} 7^{\circ}$ | $8.66310 \cdot 27$ | 0,98308.08 | 56 |
| 7 | 0,12288.51 | 9,22370 38 | $8,66111.09$ | 1,00063.58 | 57 |
|  | $0,14044^{\circ} \mathrm{OI}$ | 9,17404.65 | 8,65920.66 | 1,01819.08 | 58 |
| 10 | $\begin{aligned} & 0,15799.51 \\ & 0,17555^{\circ} \mathrm{OI} \end{aligned}$ | 9,13116.98 $9,09362.95$ | $\begin{aligned} & 8,65738 \cdot 54 \\ & 8,65564: 36 \end{aligned}$ | 1,03574.58 | 59 60 |
| 11 | 0, 19310. 52 | 9,06039.52 | 8,65,397•73 | 1,07085.59 | 61 |
| 12 | 0,21066.02 | 9,03070.66 | 8,6,5238.31 | 1,08841.09 | 62 |
| 13 | $0,22821 \cdot 52$ | 9,00398.60 | 8,65085:75 | 1,10596.59 | 63 |
| 14 | $0,24577 \cdot 02$ | 8,97978.44 | 8,64939 74 | 1,12352.09 | 64 |
| 15 | 0,26332.52 | 8,95774.61 | 8,64799 ${ }^{\circ 8}$ | 1,14107.59 | 65 |
| 16 | 0,28088.02 | 8,93758.43 | 8,64666-16 | 1,15863.10 | 66 |
| 17 | $0,29843 \cdot 52$ | 8.91906 .43 | $8,64538.04$ | 1,17618.60 | 67 |
| 18 | 0,31599 03 | 8,90199-19 | $8,64415.35$ | 1, 19,374 ${ }^{\text {I }}$ | 68 |
| 19 | $0,33354 \cdot 53$ | $8,88620 \cdot 44$ | 8,64297.84 | 1,21129.60 | 69 |
| 20 | $0,35110 \cdot 0$ | 8,87156'42 | 8,64185. 29 | 1,22885.10 | 70 |
| 21 | $0,36865 \cdot 53$ | 8,85795 38 | 8,64077.48 | 1,24640.60 | 71 |
| 22 | 0,3862 1.03 | 8,84527.23 | 8,63974.18 | 1,26396•10 | 72 |
| 23 | 0,40376.53 | 8,83343221 | 8,63875'20 | 1,28151.61 | 43 |
| 24 | 0,42132.03 | 8,822, ${ }^{\circ} 70$ | 8, $63780 \cdot 36$ | 1,29907.11 | 74 |
| 25 | 0,43887.54 | $8,81198 \cdot 1$ | $8,63689 \cdot 47$ | 1,31662-61 | 75 |
| 26 | $0,4564,3.04$ | $8,80224 \cdot 25$ | 8,6,3602 38 | 1,33418.11 | 76 |
| 27 | $0,47398.54$ | $8,79.300 \cdot 17$ | 8.63518.88 | 1,35173.61 | 77 |
| 28 | 0,49154.04 | $8,78448 \cdot 13$ | ${ }^{8} .63438 \cdot 84$ | $1,36929 \cdot 11$ | 78 |
| 29 | ${ }^{0,50909 \cdot 54}$ | $8,77636 \cdot 97$ | 8,63362-11 | 1,38684 61 | 79 |
| 30 | 0,52665\%4 | 8,7687195 | 8,63288•56 | 1,40440'12 | 80 |
| 31 | 0,54420-54 | 8,7614970 | 8,63218.03 | 1,42195'62 | 8 I |
| 32 | 0,5617605 | 8,75467.20 | 8.63150 | 1,43951'12 | 82 |
| 33 | 0,57931-55 | $88,74821.68$ | 8.63085 .55 | 1,45706.62 | 83 |
| 34 | $0,59687 \cdot 05$ | $8.74210 \cdot 64$ | $8,63023 \cdot 37$ | 1,47462.12 | 84 |
| 35 | $0,01442 \cdot 55$ | 8,736315 | 8,62963.73 | 1,49217.62 | 85 |
| 36 | 0,63198.05 | 8,7.308,3.04 | 8,62no6.52 | 1,5097.12 | 86 |
| 37 | 0,64953.55 | 8.72562 .48 | $8,62851.67$ | 1,52728.63 | 87 |
| 38 3 | $0,66709 \cdot 05$ $0,68464.56$ | 8,72068 ${ }^{\text {8 }}$, 715 | 8,62799.04 | $1,54484 \cdot 13$ | 88 |
| 49 | $0,68464 \cdot 56$ <br> $0,70220 \cdot 06$ | $8,71599 \cdot 02$ $8,7153.00$ | $8,62748 \cdot 56$ $8,62700 \cdot 13$ | $1,56239 \cdot 63$ $1,57995 \cdot 13$ | 89 90 |
| 41 | 0,71975.56 | 8,70728.94 | 8,62653.67 | 1,59750.63 |  |
| 42 | 0,73731.06 | 8,70325.53 | 8,62609 0 | 1,61506.13 | 92 |
| 4.3 | 0,75486:56 | 8,6994I.61 | 8,62566.34 | 1,63261.63 | 93 |
| 4 | 0,77242.06 | 8,69576.03 | 8,62525;32 | 1,65017.14 | 94 |
| 45 | 0,78997.56 | $8,60227 \cdot 85$ | $8,62485 \cdot 95$ | 1,667i ${ }^{2} \cdot 64$ | 95 |
| 46 | 0,807.3.3.07 | 8.68896 .05 | $8,62448 \cdot 18$ | 1,68528.14 | 96 |
| 47 | $0,82508 \cdot 57$ | 8,68,79977 | $8,62411.93$ | 1,7028,3.64 | 97 |
| 48 48 | $0,84264 \div 07$ <br> $0,86010 \cdot 57$ | $8,68278 \cdot 17$ $8,6790 \cdot 48$ | 8,62377.15 | 1,72039.14 | 98 |
| 50 | 0,87775*07 | 8,67715.96 | 8,02343 <br> 8,62311 <br> 8 | $1,73794 \cdot 6.4$ 1,75550 |  |
|  |  |  | 8,61.542.40 | -75550 14 | $\left\lvert\, \begin{aligned} & 100 \\ & \text { Perp } \end{aligned}\right.$ |

For explanation see pp. 216-228

## $4 \frac{1}{4}$ Per Cent.

| Years | Log. $r^{\text {n }}$. | Log. $a^{n}$. | Log. $a^{\text {n }}$. | Log. $r^{\text {n }}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01807.61 | 0,01807.61 | 8,68376.19 | 0.92187 .92 | 51 |
| 2 | $0,03615.21$ | 9,72599 ${ }^{\circ} 1$ | 8,68136.08 | 0,9,3995'53 | 52 |
| 3 | 0,05422-82 | 9,5587801 | 8,67907.02 | 0,95803'14 | 53 |
| 4 | 0,07230.43 | 9,44266 ${ }^{\circ} 1$ | $8,67688 \cdot 42$ | 0,97610.74 | 54 |
| 5 | $0,09038 \cdot 03$ | 9,35450'62 | $8,67479 \cdot 75$ | 0,99418.35 | 55 |
| 6 | $0,10845 \cdot 64$ | 9,28401 84 | 8,67280'54 | 1,0122596 | 56 |
| 7 | $0,1265.324$ | 9,22570:26 | 8,67090-29 | 1,0303.3.56 | 57 |
| 8 | 0,1446085 | 9,1762\% 92 | 8,66908.58 | 1,04841.17 | 58 |
| 9 | $0,16268.46$ | 9,13363:29 | 8,66735 ${ }^{\circ} 1$ | 1,06648.78 | 59 |
| 10 | 0,1807606 | 9,09631 94 | 8,66569.14 | 1,08456;38 | 60 |
| 1 | 0,19883.67 | 9,06330.85 | 8,66410*64 | 1,10263.99 | 61 |
| 12 | $0,21691 \cdot 28$ | 9,03383.97 | 8,66259 14 | 1,12071.59 | 62 |
| 13 | 0,23498-88 | 9,0073.3.55 | $8,66114.32$ | 1,13879.20 | 63 |
| 14 | 0,25306.49 | 8,98334.69 | $8,65975 \cdot 84$ | 1,15686.8ı | 64 |
| 15 | 0,27114.10 | 8,96151 80 | 8,65843.43 | 1,17494*41 | 65 |
| 16 | 0,28921.70 | 8,94156.22 | 8,6571679 | 1,1930202 | 66 |
| 17 | 0,30729:31 | $8,92324.48$ | $8.65595 \cdot 66$ | 1,21109.63 | 67 |
| 18 | $0,32536.91$ | 8,90637.17 | 8,65479:78 | 1,22917.23 | 68 |
| 19 | 0,34344*52 | 8,8907801 | $8,65368 \cdot 92$ | 1,24724.84 | 69 |
| 20 | $0,36152 \cdot 13$ | 8,87633.24 | 8,65262.84 | 1,26532.45 | 70 |
| 21 | 0,37959 73 | 8,86291 12 | 8,65161•33 | 1,28340'05 | 71 |
| 22 | $0,39767 \cdot 34$ | 8,85041•55 | $8,65064^{\circ} 18$ | 1,30147.66 | 72 |
| 23 | 0,41574.95 | 8,83875 ${ }^{\text {80 }}$ | 8,64971 21 | 1,31955.26 | 73 |
| 24 | 0,43382.55 | 8,82786.22 | $8.64882 \cdot 20$ | 1,33762.87 | 74 |
| 25 | 0,4,5190.16 | 8,81766.13 | 8,64796.99 | 1,35570 48 | 75 |
| 26 | 0,46997'77 | 8,80809'65 | 8,64715.40 | 1,37378.08 | 76 |
| 27 | 0,48805.37 | 8,79911'55 | 8,6463730 | 1,39185.69 | 77 |
| 28 | 0,50612.98 | $8,79067 \cdot 16$ | 8,64562.51 | 1,40993.30 | 78 |
| 29 | 0,52420.58 | 8,78272.34 | 8,64490'89 | 1,42800'90 | 79 |
| 30 | 0,54228-19 | 8,77523.36 | 8,64422 ${ }^{\circ}$ | 1,44608'51 | 80 |
| 31 | 0,56035 ${ }^{80}$ | 8,76816.83 | 8,64356.6I | 1,46416.12 | 81 |
| 32 | $0,57843 \cdot 40$ | 8,76149.75 | 8,64293.68 | 1,48223'72 | 82 |
| 3.3 | 0,59651 | $8,75519 \cdot 36$ | 8,6423.3.41 | 1,50031.33 | 83 |
| 34 | 0,614.58.62 | $8,7492.3{ }^{\circ} 13$ | 8,64175.69 | 1,51838.93 | 8.4 8 8 |
| 35 | 0,63266.22 | 8,74,358.80 | $8,64120.37$ $8,64067.38$ | 1,53646'54 | 85 |
| 36 | $0,65073 \cdot 83$ | $8,73824.30$ $8,73317.68$ | $8,64067 \cdot 38$ $8,64016.61$ | 1,55454.15 | 86 87 |
| 37 | 0,66881.44 | $8,73.317 \cdot 68$ | $8,64016.61$ $8,63967.97$ | $\mathrm{I}, 5726175$ | 87 |
| 38 | $0,68689 \cdot$ $0,70496.65$ | $8,728.37 \cdot 21$ $8,72381 \cdot 26$ | $8,63967 \cdot 97$ 8,6392 I 36 | $\begin{aligned} & 1,59069 \cdot 36 \\ & 1,6087697 \end{aligned}$ | 88 89 |
| 39 40 | $0,70496 \cdot 65$ $0,72304.25$ | $8,72381 \cdot 26$ $8,71948 \cdot 36$ | $8,63921.36$ 8,63876 | $1,60876 \cdot 97$ $1,62684.57$ | 89 90 |
| 41 | 0,74III-86 | 8,71537.12 | 8,63833.91 | 1,64492'18 | 91 |
| 42 | 0,75919.47 | 8,71146.29 | 8,63792.89 | 1,66299'79 | 92 |
| 43 | 0,77727.07 | 8,70774'66 | 8,63753.58 | 1,6810739 | 93 |
| 44 | $0,79534.68$ | 8,70421.13 | 8,63715.92 | 1,6991500 | 94 |
| 4.5 | $0,81342 \cdot 29$ | 8,70084\%71 | 8,6,3679.81 | 1,71722.60 | 95 |
| 46 | 0,83149.89 | $8,69764 \cdot 42$ | 8,6,3645.21 | 1,73530.21 | 96 |
| 47 | 0,84957.50 | 8,69459'41 | 8,63612.04 | 1,75337.82 | 97 |
| 48 | 0,86765.11 | $8,69168 \cdot 82$ | 8,63580. 26 | 1,77145.42 | 98 |
| 49 | 0,88572'71 | 8,68891 $\cdot 89$ | 8,63549'78 | 1,78953.03 | 99 |
| 50 | $0,90380 \cdot 32$ | 8,68627 91 | $\begin{aligned} & 8,63520.58 \\ & 8.62838 \cdot 89 \end{aligned}$ | 1,80760.64 | $\left\lvert\, \begin{aligned} & 100 \\ & \text { Perp. } \end{aligned}\right.$ |

$4 \frac{8}{8}$ Per Cent.

| Years | Log. ${ }^{\text {m }}$. | Log. $a^{\text {m }}$. | Log. $a^{\text {n }}$ | Log. ${ }^{\text {re}}$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01859.65 | 0,01859.65 | 8,69286.38 | 0,94842 09 | 51 |
| 2 | $0,03719^{\circ} 3^{\circ}$ | 9,72676.52 | 8,69055'98 | 0,96701 74 | 52 |
| 3 | $0,05578.95$ | 9,55980.63 | 8,68836.38 | 0,98561 39 | 53 |
| 4 | 0,07438-60 | 9,44393.37 | 8,68627.02 | 1,00421-04 | 54 |
| 5 | 0,09298.24 | 9,35602'35 | 8,68427.38 | 1,02280.69 | 55 |
| 6 | 0, 1115789 | 9,28577.58 | 8.68236 .96 | 1,04140'34 | 56 |
| 7 | $0,13017.54$ | 9,22769.65 | 8,68055'30 | 1,05999.98 | 57 |
| 8 | 0,14877.19 | 9,17850.60 | 8,67881 98 | 1,07859.63 | 58 |
| 9 | $0,16736 \cdot 84$ | 9,13608.89 | 8,67716.57 | 1,09719.28 | 59 |
| 10 | $0,18596.49$ | 9,09900'10 | 8,67558.67 | 1,11578.93 | 60 |
| 11 | 0,20456.14 | 9,06621 $\cdot 22$ | 8,67407\%3 | 1,13438.58 | 61 |
| 12 | 0,22315.79 | 9,03696•18 | 8,67263.99 | 1,15298.23 | 62 |
| 13 | 0,24175.44 | 9,0106\%23 | 8,67126.54 | 1,17157.88 | 63 |
| 14 | 0,26035 08 | 8.98689 .51 | $8,66995 \cdot 25$ | 1,19017.53 | 64 |
| 15 | 0,27894.73 | 8.96527 .40 | $8,66869.85$ | 1,20877.18 | 65 |
| 16 | 0,29754.38 | 8,94552. 24 | 8,66750'03 | 1,22736.82 | 66 |
| 17 | $0,31614.03$ | 8,92740'58 | 8,666.35 55 | 1,24596.47 | 67 |
| 18 | 0,33473.68 | 8,91073.00 | 8,66526.14 | 1,26456.12 | 68 |
| 19 | 0,35333.33 | $8,89533^{-21}$ | 8,66421 58 | 1,28315\%8 | 69 |
| 20 | 0,37192.98 | 8,88107.48 | 8,66321.63 | 1,30175*42 | 70 |
| 21 | $0,39052.63$ | 8,86784.06 | 8,66226.11 | 1,32035 ${ }^{\text {\% }}$ 7 | 71 |
| 22 | 0,40912.27 | $8,85552 \cdot 85$ | 8,66134*77 | 1,33894*72 | 72 |
| 23 | 0,42771 92 | 8,84405'12 | 8,66047 ${ }^{-44}$ | 1,35754*37 | 73 |
| 24 | 0,44631-57 | $8.83333^{\circ} 23$ | 8,65963.94 | 1,37614*1 | 74 |
| 25 | 0,46491.22 | 8,82330 ${ }^{\circ}$ | 8,65884 ${ }^{\circ} \mathrm{og}$ | 1,39473.66 | 75 |
| 26 | $0,48350 \cdot 87$ | 8,81391.05 | 8.65807 .72 | 1,41333.31 | 76 |
| 27 | 0,50210. 52 | 8,80509.64 | 8.65734 .67 | 1,43192.96 | 77 |
| 28 | 0,52070'17 | 8.79681 .64 | 8,65664 8 I | 1,45052.61 | 78 |
| 29 | $0,53929.82$ | 8.78002 .88 | 8,65597.98 | 1,46912.26 | 79 |
| 30 | 0,55789.47 | 8.78169.64 | 8,65534*05 | 1,48771 91 | 80 |
| 31 | 0,5764911 | 8,77478.56 | 8,65472.89 | 1,50631 56 | 81 |
| 32 | 0,59508•76 | 8,76826.60 | 8,65414*36 | I,52491 21 | 82 |
| 33 | 0,61,368*41 | 8.76211 .02 | 8,65.358:36 | t,54350.85 | 83 |
| 34 | 0,63228.06 | 8,75629'31 | 8,65304* ${ }^{\text {8 }}$ | 1,56210.50 | 84 |
| 35 | 0,65087.71 | $8,75079.21$ | 8,65253.53 | 1,58070.15 | 85 |
| 36 | $0,66947 \cdot 36$ | 8,74558-62 | 8,65204*46 | 1,59929-80 | 86 |
| 37 | $0,68807.01$ | 8,74065.64 | 8,65157.50 | 1,61789.45 | 87 |
| 38 | 0,70666.66 | 8,73598.50 | $8,65112.55$ | 1,63649 10 | 88 |
| 39 | 0,72526.31 | 8,73155.62 | 8,65060.54 | 1,65508*75 | 89 |
| 40 | 0,74385'95 | 8,72735.50 | 8,65028:37 | 1,67368.40 | 90 |
| 41 | 0,76245.60 | 8,72336.76 | 8,64988.95 | 1,69228.05 | 91 |
| 42 | 0,78105.25 | 8,71958.14 | 8,64951 24 | 1,71087.69 | 92 |
| 43 | 0,79964.90 | 8,71598.45 | 8,64915'13 | 1,72947.34 | 93 |
| 44 | 0,81824.55 | 8,71256.62 | $8,64880^{\circ} 56$ | 1,74806.99 | 94 |
| 45 | $0,83684.20$ | $8,70931 \cdot 63$ | $8,64847^{\circ} 46$ | 1,76666.64 | 95 |
| 46 | 0,85543.85 | 8,70622.51 | $8,64815^{\prime} 78$ | 1,78526.29 | 96 |
| 47 | -,87403.50 | $8,70328 \cdot{ }^{4} \mathrm{~J}$ | $8,64785 \cdot 44$ | 1,80385.94 | 97 |
| 48 | 0,89263.14 | 8,70048.49 | 8,64756.40 | 1,82245.59 | 98 |
| 49 | 0,91122.79 | 8,69781.98 | 8,64728.59 | 1,84105.24 | 99 |
| 50 | 0,92982.44 | 8,69528.17 | $\begin{aligned} & 8,64701 \cdot 96 \\ & 8,64097 \cdot 81 \end{aligned}$ | 1,85964.88 | $\begin{aligned} & 100 \\ & 100 r y 2 \end{aligned}$ |

$4 \frac{1}{2}$ Por Cont.

| Years | Log. $r^{\text {m}}$. | Log. $a^{n}$. | Log. $a^{n}$. | Log. ${ }^{\text {ra }}$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,01911.63 | 0,01911 63 | 8,70184.69 | 0,97493.08 | 51 |
| 2 | 0,03823.26 | 9,72753.93 | 8,69963.65 | 0,99404.71 | 52 |
| 3 | 0,05734-89 | 9,56083 ${ }^{\circ} 09$ | 8,69753 17 | 1,01316.34 | 53 |
| 4 | 0,07646. $5^{2}$ | 9,44520'50 | 8,69552*71 | 1,03227.97 | 54 |
| 5 | 0,09558'15 | 9,35753.78 | $8,69,361 \cdot 74$ | 1,05139.60 | 55 |
| 6 | 0,11469.77 | 9,28752.94 | 8,69179*78 | 1,07051.23 | 56 |
| 7 | $0,1,3.381 \cdot 40$ | 9,22968.56 | 8,69006.37 | 1,08962.86 | 57 |
| 8 | 0,15293.03 | 9,18072.68 | 8,68841 ${ }^{\circ} \mathrm{O6}$ | 1, 10874.48 | 58 |
| 9 | 0,17204.66 | 9,13853.79 | 8,68683.47 | 1,12786.11 | 59 |
| 10 | 0,19116.29 | 9,10167.43 | 8,6853.3'19 | 1,14697.74 | 60 |
| 11 | 0,21027.92 | 9,06910.61 | 8,68389 87 | 1,16609:37 | 61 |
| 12 | 0,22939 55 | 9,04007.27 | 8,68253.16 | 1,18521.00 | 62 |
| 13 | 0,24851-18 | 9,01399.67 | 8,68122.74 | 1,204.32.63 | 63 |
| 14 | 0,26762.81 | 8,99042.91 | 8,67998'31 | -1,22344.26 | 64 |
| 15 | 0,28674.44 | 8,96901'41 | 8,67879'57 | 1,24255'89 | 65 |
| 16 | 0,30586.06 | 8,94946.50 | $8,67766 \cdot 24$ | 1,26167.52 | 66 |
| 17 | 0,32497'69 | 8,93154'73 | 8,67658.07 | 1,28079 15 | 67 |
| 18 | 0,34409:32 | 8,91506.67 | 8,67554.80 | 1,29990.78 | 68 |
| 19 | 0,36320'95 | $8,80986 \cdot 07$ | 8,67456.22 | 1,31902.40 | 69 |
| 20 | $0,38232 \cdot 58$ | 8,88579*16 | 8,67362\%9 | 1,33814.03 | 70 |
| 21 | 0,40144.21 | $8,87274.21$ | 8,67272.20 | 1,35725.66 | 71 |
| 22 | 0,42055•84 | 8,86061 13 | 8,67186.36 | 1,37637 29 | 72 |
| 23 | 0,43967.47 | 8,84931 18 | 8,67104:37 | 1,39548.92 | 73 |
| 24 | 0,45879 ${ }^{10}$ | 8,83876'74 | 8,67026.06 | 1,41460.55 | 74 |
| 25 | 0,47790.73 | 8,82891-13 | $8,66951 \cdot 25$ | 1,43372.18 | 75 |
| 26 | 0,49702.36 | 8,81968.46 | 8,66879'78 | 1,45283.81 | 76 |
| 27 | 0,5161,3.98 | 8,8110.3.49 | 8,6681 ${ }^{\text {- } 51}$ | 1,47195.44 | 77 |
| 28 | $0,53525 \cdot 61$ | 8,80291.60 | $8,66746 \cdot 27$ | 1,4910707 | 78 |
| 29 | 0,554,37.24 | 8,79528.63 | 8,66683.93 | 1,51018.69 | 79 |
| 30 | 0,57348.87 | 8,78810.85 | 8,66624 36 | 1,52930.32 | 8 c |
| 31 | 0,59260.50 | 8,78134-92 | 8,66567 43 | 1,54841 95 | 8I |
| 32 | 0,61172.13 | 8,77497.81 | 8,66513.02 | 1,56753.58 | 82 |
| 33 | 0,63083.76 | 8,76896.74 | 8,6646I ${ }^{\text {'02 }}$ | 1,58665.21 | 83 |
| 34 | 0,64995:39 | 8,76329.26 | 8,66411 32 | 1,60570-84 | 84 |
| 35 | 0,66907.02 | 8.75793 .06 | 8,66363.81 | 1,62488-47 | 85 |
| 36 | 0,68818:65 | 8,75286.08 | $8,66318 \cdot 40$ | 1,64400 10 | 86 |
| 37 | 0,70730.27 | 8,74806.41 | 8,6627498 | 1,6631 $1 \times 73$ | 87 |
| 38 | 0,7264190 | 8,54352.30 | 8,66233 ${ }^{48}$ | 1,6822.3.36 | 88 |
| 39 | 0,7455.3'53 | 8,73922•14 | $8,66193.80$ | 1,70134.98 | 89 |
| 40 | $0,76465 \cdot 16$ | 8,7351448 | 8,66155-86 | 1,72046.61 | 90 |
| 41 | 0,78376.79 | 8,73127.91 | 8,66119:59 | 1,73958.24 | 91 |
| 42 | 0,80288 ${ }^{42}$ | 8,72761-18 | 8,66084.91 | 1,75869.87 | 92 |
| 43 | 0,82200'05 | 8,72413.12 | 8,6605 ${ }^{\text {'7 }} 7$ | 1,77781.50 | 93 |
| 44 | 0,84111.68 | 8,72082.64 | $8,66020 \cdot 04$ | 1,79693.13 | 94 |
| 4.5 | 0,86023:31 | $8,71768 \cdot 73$ | 8,65989'71 | 1,8160476 | 95 |
| 46 | 0,87934.94 | $8,71470 \cdot 45$ | 8,65960'71 | 1,83516.39 | 96 |
| 47 | $0,89846 \cdot 57$ | 8,71186.91 | 8,65932'98 | 1,85428.02 | 97 |
| 48 | 0,91758-19 | $8,70917.31$ | $8,65906 \cdot 46$ | 1,87339.65 | 98 |
| 49 | 0,93669.82 | $8,70660 \cdot 87$ | $8,6588 \mathrm{I} \cdot 10$ | 1,89251 28 | 99 |
| 50 | 0,95581.45 | 8,70416.90 | $\begin{aligned} & 8,65856 \cdot 85 \\ & 8,65321 \cdot 25 \end{aligned}$ | 1,91162.90 | $\left\lvert\, \begin{aligned} & 100 \\ & \text { Perp } \end{aligned}\right.$ |


| $4 \frac{5}{8}$ Per Cent. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | Log. res. | Log. $a^{\text {" }}$ | Log. $a^{2}$. | Log. ${ }^{\text {rn. }}$ | Years |
| 1 | 0,01963.55 | 0,01963.55 | 8,71071.30 | 1,00140.90 | 51 |
| 2 | 0,03927.09 | 9,72831-23 | 8,70859.26 | 1,02104*45 | 52 |
| 3 | 0,05890.64 | $9,56185.38$ | 8,70657.58 | 1,04068.00 | 53 |
| 4 | 0,07854.19 | 9,44647*40 | 8,70465.67 | 1,06031'54 | 54 |
| 5 | 0,0981774 | 9,35904.90 | 8,70283.03 | 1,07995.09 | 55 |
| 6 | $0,11781 \cdot 28$ | 9,28927.90 | 8,70109.20 | 1,09958.64 | 56 |
| 7 | 0,1,3744.83 | 9,23166.98 | 8,6994.3.69 | 1,11922.18 | 57 |
| 8 | 0,15708.38 | 9,18294'19 | 8,69786.08 | 1,13885 73 | 58 |
| 9 | 0,17671'92 | 9,14097.98 | 8,69635 97 | $1,15849.28$ | 59 |
| 10 | 0,1963547 | 9,10433'93 | 8,69492'98 | 1,17812.83 | 60 |
| 11 | 0,21599.02 | 9,07199.05 | 8,69356.76 | 1,19776.37 | 61 |
| 12 | $0,23562 \cdot 57$ | 9,04317.27 | 8,69226.94 | 1,21739'92 | 62 |
| 1.3 | 0,25526.11 | 9,01730.84 | 8,69103.24 | 1,23703.47 | 63 |
| 14 | 0,27489'66 | 8,99.394.89 | 8,68985'32 | 1,2566701 | 64 |
| 15 | $0,29453.21$ | $8,97273.83$ | 8,68872 ${ }^{\text {c }}$, | 1,27630.56 | 65 |
| 16 | 0,31416.75 | 8,953.38.99 | 8,68765'77 | 1,29594*1] | 66 |
| 17 | $0,3,3,380 \cdot 30$ | 8,9,3566'9.3 | 8,68663.58 | 1,31557.66 | 67 |
| 18 | 0,35.343.85 | $8,91938 \cdot 21$ | 8,68566.15 | 1,33521.20 | 68 |
| 19 | 0,37307.39 | $8,90436 \cdot 58$ | 8,68473.23 | 1,35484.75 | 69 |
| 20 | 0,39270:94 | 8,89048-29 | 8,68384.59 | 1,37448.30 | 70 |
| 21 | 0,41234.49 | 8,87761 60 | 8,68300'05 | 1,39411.84 | 71 |
| 22 | 0,43198.04 | 8,86566-4,3 | 8,68219:39 | 1,4137.5 39 | 72 |
| 23 | 0,45161'58 | 8,85454 ${ }^{\circ} \mathrm{O}$ | 8,68142'44 | 1,433,38*94 | 73 |
| 24 | 0,4712.13 | 8,84416.79 | 8,68069.03 | 1,45302.49 | 74 |
| 25 | 0, 49088.68 | $8,8,3448.05$ | 8,67998.95 | 1,47266\%3 | 75 |
| 26 | 0,51052.22 | 8,82541 88 | 8,67932-11 | 1,49229 ${ }^{\circ} 8$ | 76 |
| 27 | 0,5301577 | 8,81693'11 | $8.67868 \cdot 30$ | 1,5119.3.3 | 77 |
| 28 | $0,54979 \cdot 32$ | 8,80897.07 | $8.67807{ }^{40}$ | 1,5315667 | 88 |
| 29 | 0,56942.87 | 8,80149.62 | 8,67749.28 | 1,55120.22 | 79 |
| 30 | $0,58906.41$ | 8,79447.03 | 8,67693'79 | 1,57083.77 | 80 |
| 31 | 0,60869796 | $8,78785 \cdot 96$ | 8,67640-83 | 1,59047:32 | 81 |
| 32 | 0,62833*51 | 8,78163;38 | 8,67590.27 | 1,61010.86 | 82 |
| 33 | 0,64797.05 | 8.77576 .56 | 8,67542 ${ }^{\circ}$ | 1,62974.41 | 83 |
| 34 | 0,66760'60 | 8,77022.99 | 8,67495.90 | 1,64937.96 | 84 |
| 35 | 0,68724 ${ }^{15}$ | $8,76500{ }^{\circ} 40^{\prime}$ | 8,67451 ${ }^{\circ}$ | 1,66901-50 | 85 |
| 36 | 0,70687.70 | 8,76006 73 | 8,67409 89 | 1,68865.05 | 86 |
| 37 | 0,72651•24 | $8,75540 \cdot 06$ | 8,67369*77 | 1,70828.60 | 87 |
| 38 | 0,7461479 | 8,75008.67 | $8,67331 \cdot 45$ | 1,72792.14 | 88 |
| 39 | 0,76578.34 | 8,74680'94 | 8,67294.85 | 1,74755*69 | 89 |
| 40 | 0,78541.88 | 8,74285:39 | 8,67259 ${ }^{\circ}$ | 1,76719.24 | 90 |
| 41 | 0,80505•43 | 8,73910'67 | 8,67226.54 | 1,78682.79 | 91 |
| 42 | 0,82468'98 | 8,7,3555.52 | 8,67194.66 | 1,80646:33 | 92 |
| 43 | 0,84432'53 | 8,7.3218.74 | 8,67164.22 | 1,82609-88 | 93 |
| 44 | 0,86,396.07 | $8,72899 \cdot 29$ | 8,67135.14 | 1,8457.3.43 | 94 |
| 4.5 | 0,88,359.62 | 8,72596'13 | 8,67107.38 | 1,86536.97 | 9.5 |
| 46 | $0,90323 \cdot 17$ | 8,72,308 35 | $8,67080 \cdot 84$ | 1,88500.52 | 96 |
| 47 | 0,92286.71 | 8,72035.04 | 8,67055.51 | 1,90464* 07 | 97 |
| 48 | 0,94250.26 | 8,71775.43 | 8,67031.30 | 1,92427.62 | 98 |
| 49 | $0,96213 \cdot 81$ | 8,71528.73 | $8,67008 \cdot 17$ | 1,94391-16 |  |
| 50 | 0,98177.36 | 8,71294 24 | $8,66986 \cdot 08$ $8,66511.17$ | $1,96354^{\circ} 71$ | $100$ |

For explanation see pp. 216-228

## $4 \frac{3}{4}$ Per Cent.

| Year 3 | Log. | log. $a^{\prime \prime}$. | Log. $a^{\prime \prime}$. | Log. $r^{\text {fo}}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,02015-40 | 0,02015.40 | 8,71946.35 | 1,02785.56 | 51 |
| 2 | 0,04030.81 | 9,72908.42 | 8,71743*01 | 1,04800.96 | 52 |
| 3 | 0,06046.21 | 9,56287.51 | 8,71549.78 | 1,06816.37 | 53 |
| 4 | 0,08061-61 | 9,44774.06 | $8,71366 \cdot 10$ | 1,08831:77 | 54 |
| 5 | 0,10077 ${ }^{\circ} \mathrm{O}$ | 9,36055\% ${ }^{2}$ | $8,71191 \cdot 48$ | $1,10847 \cdot 17$ | 55 |
| 6 | 0,1209242 | 9,29102.49 | 8,71025.44 | 1,12862.58 | 56 |
| 7 | 0,14107.82 | 9,2,3,364.92 | 8,70867'50 | 1,14877.98 | 57 |
| 8 | $0,16123.23$ | 9,18515.09 | 8.70717 .27 | 1,16893.38 | 58 |
| 9 | $0,18138.63$ | 9,14.341.46 | $8,70574 \cdot 32$ | 1,1898.79 | 59 |
| 10 | 0,20154*03 | 9,10699.61 | $8,70+38 \cdot 30$ | 1,20924 19 | 60 |
| 11 | $0,22169 \cdot 43$ | 9.07486.53 | $8,70.308 \cdot 84$ | 1,22939 59 | 61 |
| 12 | 0,24184.84 | 9.04626.17 | 8.7018 .62 | 1,24955 ${ }^{\circ} 0$ | 62 |
| 13 | 0,26200. 24 | 9,02040 78 | 8,70068.30 | 1,26970.40 | 6.3 |
| 14 | 0,28215.64 | 8.99745 .47 | 8,69956.60 | 1,28985.80 | 64 |
| 15 | 0,30231.05 | 8,97644.69 | 8,60850. 24 | 1,31001.21 | 65 |
| 16 | 0,32246.45 | 8,95729'73 | 8,69748.94 | 1,33016.61 | 66 |
| 17 | 0,34261-85 | $8,9.3977 \cdot 19$ | $8,69652 \cdot 44$ | 1,35032.01 | 67 |
| 18 | $0,36277 \cdot 26$ | $8,92,367.61$ | 8,695\%0.54 | 1,37047.41 | 68 |
| 19 | 0,38292 66 | 8,90884 ${ }^{\circ} 7$ | 8,69472.97 | 1,39062.82 | 69 |
| 20 | 0,40308.06 | 8,89514.88 | 8,69389.54 | $1,41078 \cdot 22$ | 70 |
| 21 | 0,42323.47 | 8,88246.23 | 8.69 .310 .05 | 1,43093.62 | 71 |
| 22 | 0,44338.87 | 8,87068.74 | $8,69234 \cdot 29$ | 1,45109.03 | 72 |
| 23 | 0,46354*27 | 8,85973.67 | $8,69162 \cdot 10$ | 1,4712443 | 73 |
| 24 | 0,48369-68 | 8,84953.41 | 8,69093.28 | 1,49139.83 | 74 |
| 25 | 0,50,385-08 | 8,84001 27 | 8,69027.69 | 1,5115.24 | 75 |
| 26 | $0,52400 \cdot 48$ | $8,83111 \cdot 39$ | 8,68965.17 | 1,53170'64 | 76 |
| 27 | 0,54415.89 | 8,82278.54 | 8,68905'56 | 1,55186.04 | 77 |
| 28 | $0,56431 \cdot 29$ | 8,81498.08 | 8,68848.74 | 1,57201'45 | 78 |
| 29 | 0,58446.69 | 8,80765.87 | 8,68794.56 | 1,59216.85 | 79 |
| 30 | $0,60462 \cdot 09$ | 8,80078.20 | 8,68742.90 | 1,61232.25 | 80 |
| 31 | 0,62477.50 | 8,79431 72 | 8,68693.64 | 1,6,3247.66 | 81 |
| 32 | 0,64492.90 | $8,78823.40$ | 8,68646.64 | 1,65263.06 | 82 |
| 33 | 0,66508.30 | $8,78250 \cdot 53$ | $8,68601.87$ | 1,67278.46 | 83 |
| 34 | 0,68523.71 | 8,77710.58 | $8,68559.15$ | 1,69293.87 | 84 |
| 35 | 0,70539 11 | 8,77201.31 | 8,68518.40 | 1,71,309 27 | 85 |
| 36 | $0,72554.51$ | 8,76720.63 | 8,68479 55 | 1,73324.67 | 86 |
| 37 | 0,74569.92 | 8,76266.67 | 8,68442.47 | 1,75.340.07 | 87 |
| 38 | 0,76585.32 | 8,75837.68 | $8,68407 \cdot 12$ $8,68373 \cdot 39$ | 1,77355.48 | 88 |
| . 39 | $0,78600 \cdot 72$ | 8,75432.06 | 8,68373.39 | 1,79370-88 | 89 |
| 40 | 0,80616.13 | 8,75048.34 | 8,68341 22 | $1,81386 \cdot 28$ | 90 |
| 41 | 0,82631.53 | 8,74685.14 | $8,68310{ }^{\circ} 5$ | 1,83401.69 | 91 |
| 42 | $0,84646 \cdot 93$ | 8,74341 23 | 8,68281-24 | 1,85417\%9 | 92 |
| 43 | 0,86662.34 | 8.74015.43 | 8,6825.3.31 | 1,874.32.49 | 93 |
| 44 | 0,88677 74 | 8,73706-68 | 8,68226.66 | 1,89447 90 | 94 |
| 45 | 0,90693.14 | 8,73413.95 | 8,68201 ${ }^{\text {8 }}$ 3 | 1,91463.30 | 95 |
| 46 | $0,92708 \cdot 55$ | 8,73136-33 | 8,68176.97 | 1,9,3478'70 | 96 |
| 47 | $0,94723.95$ | 8,7287294 | 8,68153.83 | 1,95494 11 | 97 |
| 48 | 0,9673935 | 8,72622.99 | 8,68131 74 | 1,97509 51 | 98 |
| 49 | 0,98754.76 | $8.72385 \cdot 71$ | 8,68110'67 | 1,99524.91 | 99 |
| 50 | 1,00770.16 | 8,72160'37 | 8,68090-56 $8,67669 \cdot 36$ | 2,01540.32 | $100$ |

## $4 \frac{7}{8}$ Por Cont

| Years | Log. ${ }^{+4}$. | Log. $a^{\text {n }}$. | Log. $a^{*}$. | Log. $r^{*}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0,02067.20 | 0,02067.20 | 8,72810.03 | 1,05427.07 | 51 |
| 2 | 0,04134:39 | 9,72985.50 | 8,7261506 | 1,97494.26 | 52 |
| 3 | 0,06201. 59 | 9,56389.48 | 8,72429.97 | 1,09561.46 | 53 |
| 4 | 0,08268.79 | 9,44900.52 | 8,72254.20 | 1,11628.66 | 54 |
| 5 | $0,10335.99$ | 9,36206. 24 | 8,7208727 | 1,13695.86 | 55 |
| 6 | 0,12403.18 | 9,29276.63 | $8,71928 \cdot 69$ | $1,15763.05$ $1,17830.25$ | 56 |
| 7 | $0,14470 \cdot 38$ $0,16537.58$ |  | $8,71778 \cdot 03$ $8,71634 \cdot 85$ | $1,17830 \cdot 25$ $\mathbf{1}, 19897.45$ | 57 |
| 8 | $0,16537.58$ $0,18604.78$ | 9,18735 $\mathbf{9 , 1 4 5 8 4} \cdot 26$ | 8,71634 8,71498 | 1,21964:65 | 59 |
| 10 | 0,20671•97 | 9,10964.48 | 8,7136941 | 1,24031.84 | 60 |
| 11 | 0,2273917 | 9,07773.07 | 8,71246.42 | 1,26099.04 | 61 |
| 12 | 0,24806.37 | 9,04933.97 | 8,71129 47 | 1,28166.24 | 62 |
| 13 | 0,26873.57 | 9,02389.47 | 8,71018.25 | 1,30233.44 | 63 |
| 14 | 0,28940 ${ }^{\circ} 6$ | 0,00094.66 | $8,70912 \cdot 46$ | 1,32300.63 | 64 |
| 15 | 0,31007.96 | $8,98013.97$ | 8,70811.83 | 1,34367.83 | 65 |
| 16 | 0,33075 $\cdot 16$ | $8,96118 \cdot 75$ | $8,70716 \cdot 10$ | 1,36435.03 | 66 |
| 17 | 0,35142 ${ }^{6}$ | $8,94385 \cdot 53$ | 8,70625.00 | 1,38502.22 | $6 \%$ |
| 18 | 0,37209. 55 | 8,92794.91 | 8,70538.33 | 1,40569.42 | 68 |
| 19 | 0,39276'75 | $8,91330 \cdot 63$ | 8,70455 84 | 1,42636.62 | 69 |
| 20 | 0,41343.95 | 8,89978.94 | 8,70377'33 | 1,44703.82 | 70 |
| 21 | $0,43411 \cdot 15$ | $8,88728 \cdot 13$ | 8,70302.61 |  | 71 |
| 22 | $0,45478 \cdot 34$ | 8,87568 $\cdot$ 10 | $8,70231 \cdot 47$ | 1,48838.21 | 72 |
| 23 | 0,47545.54 | 8,86490'12 | 8,70163.75 | 1,50905.41 | 73 |
| 24 | 0,49612.74 | 8,85486.59 | 8,70099'29 | 1,52972.61 | 74 |
| 25 | $0,51679 \cdot 93$ | $8,84550 \cdot 83$ | 8,70037.90 | 1,55039 ${ }^{\text {80 }}$ | 75 |
| 26 | $0,53747 \cdot 13$ | 8,83676.96 | 8,69979 44 | 1,57107.00 | 76 |
| 27 | 0,55814.33 | ${ }^{8,82859} 78$ | 8,69923.78 | 1,59174.20 | 77 |
| 28 29 | $\begin{aligned} & 0,57881 \cdot 53 \\ & 0,59948 \cdot 72 \end{aligned}$ | $8,82094 \cdot 66$ $8,81377 \cdot 44$ | $8,69870 \cdot 77$ $8,69820 \cdot 29$ | $1,61241.40$ $1,63308.59$ | 78 |
| 30 | 0,62015.92 | 8,80704.41 | 8,69772.21 | 1,65375'79 | 80 |
| 31 | 0,64083.12 | 8,80072.24 | 8,69726.41 | 1,67442'99 | 81 |
| 32 | 0,661 $50 \cdot 32$ | $8,79477.91$ | 8,69682 78 | 1,69510.19 | 82 |
| 33 | 0,68217.51 | 8,78918.68 | 8,69641-23 | 1,71577 ${ }^{8}$ | 83 |
| 34 | 0,70284*71 | $8,78392 \cdot{ }^{\circ}$ | $8,69601 \cdot 64$ | 1,73644.58 | 84 |
| 35 | $0,72351.91$ | ${ }^{8,77895 \cdot 82}$ | $8,69563.93$ | 1,75711 ${ }^{7}{ }^{8}$ | 85 |
| 36 | 0,74419.11 | 8,7742786 | 8,69528.00 | 1,77778.97 | 86 |
| 37 <br> 38 | 0,76486.30 | ${ }^{8,76986} 30$ | $8,69493 \cdot 77$ | 1,79846.17 | 8 |
| 39 | 0,78553.50 | 8,7659 8,76150 | $8,69461 \cdot 16$ $8,69430 \cdot 07$ | $1,81913.37$ 1,83980 | 8 |
| 40 | 0,82687.90 | 8,75803.37 | 8,69400.47 | 1,86047\% 76 | 90 |
| 41 | 0,84755 ${ }^{\circ} 9$ | 8,75451.40 | 8,69372.25 | 1,88114.96 | 91 |
| 42 | 0,86822 29 | 8,75118.42 | 8,69345 36 | 1,90182. 16 | 92 |
| 43 | 0,88889'49 | 8,74803'29 | 8,69319.74 | 1,92249'36 | 93 |
| 44 | 0,90956.68 | $8,74504 \cdot 91$ | 8,69295'32 | 1,94316.55 | 94 |
| 45 | 0,93023.88 | 8,74222.31 | 8,69272.05 | 1,90383'75 | 95 |
| 46 | 0,95091.08 | 8,73954-54 | 8,69249'88 | 1,98450'95 | 96 |
| 47 | 0,97158.28 | 8,73700'75 | $8,69228 \cdot 74$ | 2,00518.15 |  |
| 48 | 0,99225.47 | $8,73460 \cdot 12$ | 8,69208.60 | 2,02585.34 | 98 |
| 49 | 1,01292.67 | 8,73231.93 | $8,69189^{\circ}{ }^{\circ}$ | 2,04652.54 | 99 |
| 50 | 1,03359'87 | 8,73015.45 | $\begin{aligned} & 8,69171 \cdot 11 \\ & 8.68707 \cdot 46 \end{aligned}$ | 2,06719.74 | $100$ |

5 Por Cent.

| $\xrightarrow{T}$ | Leg. ${ }^{\text {r }}$. | Leg. $a^{n}$. | Log. $a^{*}$. | Log. r. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,02118.03 | 0,02118.93 | 8,73662.49 | 1,08065•43 | 51 |
| 2 | 0,04237.86 | 9,73062.48 | 8,73475.58 | 1, 10184.35 | 52 |
| 3 | 0,06356.79 | 9,56491-28 | 8,73298.32 | 1,12303.28 | 53 |
| 4 | $0,08475.72$ | 9,45026.73 | $8,73130^{\circ} 16$ | 1,14422.21 | 54 |
| 5 | 0,10594.65 | $9,36356 \cdot 45$ $9,29450.47$ | $8,72970 \cdot 62$ $8,72819.22$ | $1,16541 \cdot 14$ $\mathbf{1 , 1 8 6 6 0 \%}$ | 55 56 |
|  | 0,12.713.58 | 9,29450'47 | ${ }^{8,726975 \cdot 52}$ | 1,20779'00 | 57 |
|  | 0,16951 | 9,18955 15 | 8,72539 '10 | 1,22897\%93 | 58 |
| 9 | 0,19070.37 | 9,14826.35 | 8,72409 57 | 1,25016.86 | 59 |
| 10 | $0,21189.30$ | 9,11228.51 | 8,72286. 57 | 1,27135'79 | 60 |
| 11 | 0,23308.23 | 9,08058.65 | 8,72169 75 | 1,29254:72 | 61 |
| 12 | 0,25427.16 | 9,05240.70 | $8,72058 \cdot 78$ | 1,31373.65 |  |
| 13 | 0,27546'09 | 9,02716.92 | $8,71953.37$ | 1,33492'58 | 63 64 |
| 14 | 0,29665 ${ }^{\circ}$ | 9,00442 44 | 8,71855.20 | $1,35011.51$ $1,37730.44$ 1 | 64 65 |
| 15 | $0,31783.95$ | $8,98381^{\circ} 70$ | 8,7175802 | 1,37730.44 | 65 |
| 16 | 0,33902 28 | 8,9650601 | $8,71067 \% 8$ $8,71581.60$ | 1,3984937 $1,41968.30$ | 67 |
| 17 | $\begin{aligned} & 0,360218181 \\ & 0,38140 \cdot 74 \end{aligned}$ | $8,94791 \cdot 94$ $8,93220 \cdot 8$ | $8,71581 \cdot 60$ 8,7149988 | $1,41968.30$ $1,44087.23$ | 68 |
| 19 | $0,40250 \cdot 67$ | 8,91774 18 | 8,71422.21 | 1,46206.16 | 69 |
| 20 | $0,42378 \cdot 60$ | 8,90440'49 | 8,71348.34 | 1,48325.09 | 70 |
| 21 | $0,44497.53$ | 8,8020\% 30 | 8,71278.11 | 1,50444.02 | 71 |
| 22 | $0,46616 \cdot 46$ | 8,88064.50 | 8,71211 34 | 1,52562.95 | 72 |
| 23 | 0,48735.39 | 8,87003.40 | 8,7114785 | 1,54081.88 | 73 |
| 24 | $0,50854 \cdot 32$ | 8,86016.37 | 8,71087.46 | 1,56800.81 | 74 |
| 25 | $0,52973 \cdot 25$ | $8,85096 \cdot 74$ | $8,71030 \cdot 03$ | $1,58919.74$ r, 5038.67 | 75 76 |
| 26 | $0,55092 \cdot 18$ | $8,84238 \cdot 60$ 8,83436 | $8,70975 \cdot 40$ $8,70023.43$ | 1,01039 $\mathbf{1 , 6 3 1 5 7}$ |  |
| 27 | $\begin{aligned} & 0,57211 \cdot 11 \\ & 0,59330 \cdot 04 \end{aligned}$ | $8,83436 \cdot 89$ $8,82686.83$ | $8,70874^{\circ} \times$ | 1,65276.53 | 78 |
| 29 | $0,61448 \cdot 97$ | 8,81984.33 | 8,70826.98 | 1,67395'46 | 79 |
| 30 | 0,63567.90 | 8,81325'\% | 8,70782'24 | 1,6951439 | 80 |
| 31 | 0,65686-83 | 8,80707.56 | 8,70739'67 | 1,71633.32 | 81 |
| 32 | 0,67805 76 | 8,80126.94 | 8,70699'17 | 1,73752.25 |  |
| 33 | 0,69924*69 | 8,79581.08 | $8,70660 \cdot 63$ |  | 83 |
| 34 | $0,72043.62$ | $8,70067 \cdot 52$ | $8,70623.97$ $8,70589.0$ | 1,78990.11 <br> r, $80109^{\circ} 04$ | 85 |
| 35 36 | $0,74162.55$ $0,76281.48$ | $8,78584.01$ $8,78128.46$ | 8,70589 $8,70555^{\prime} \cdot 76$ | r,80109.04 $1,82227.97$ | 85 86 |
| 37 | 0,78400'4I | $8,77699^{\circ} \mathrm{I}$ | 8,70524.26 | I, 84346.90 | 87 |
| 38 | 0,80519.34 | 8,77293.92 | $8,70494 \cdot 18$ | 1,86465.83 |  |
| 39 | 0,82638.27 | $8,76911.60$ | $8,70466.56$ | ${ }_{1}^{1,88584.76}$ |  |
| 40 | 0,84757 20 | $8,76.55^{\circ} 58$ | 8,70438.32 | 1,90\% 03.69 |  |
| 41 | 0,86876 13 | 8,76209*53 | 8,70412.39 | 1,92822.62 | 91 |
| 42 | 0,88995 06 | 8,75887.19 | 8,7038770 | $1,94941 \cdot 55$ $1,97060 \cdot 48$ | 92 |
| 43 | $0,91113.99$ | 8,75582.41 | $8,70364 \cdot 21$ $8,70341 \cdot 85$ | $1,97060 \cdot 48$ $1,99170 \cdot 41$ | 93 |
| 44 | $0,93232 \cdot 02$ $0,95351 \cdot 85$ | $8,75294 \cdot 11$ $8,75021 \cdot 31$ | $8,70341 \cdot 85$ $8,70320 \cdot 56$ | $1,99179.41$ $2,01298.34$ | 94 95 |
| 45 | $\begin{aligned} & 0,95351 \cdot 85 \\ & 0,9747078 \end{aligned}$ | $8,75021 \cdot 31$ $8,74763.09$ | $8,70320 \cdot 50$ $8,70300 \cdot 30$ | 2,03417.27 | 96 |
| 47 | $0,99580 \cdot 71$ | $8,74518.58$ | 8,70281 - 1 | 2,05536.20 | 97 |
| 48 | 1,01708.64 | 8,74286.98 | $\begin{aligned} & 8,7026264 \\ & 8,0210 \end{aligned}$ |  | 98 99 |
| 49 | 1,03827.57 | $8,74067 \cdot 57$ $8,73850 \cdot 61$ | 8,70245'16 <br> 8,70228.52 | 2,09774**06 2,11892'99 | ${ }_{100}$ |
| 50 | 1,05946.50 | 8,73859*61 | $\begin{aligned} & 8,70228 \cdot 52 \\ & 8,69897 \cdot \infty \end{aligned}$ | 2,1189299 | ${ }^{1}$ |

$5 \frac{1}{8}$ Per Cent.

| Year | Log. $r^{n}$. | Log. $a^{n}$. | Log. $a^{n}$. | Log. $\mathrm{r}^{n}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,02170'60 | 0,02170 60 | 8,7 | 1,10700'64 | 5 |
| 2 | 0,04341 20 | 9,73139 34 | 8,7432 | 1,12871 ${ }^{15}$ | 52 |
| 3 | $0,06511.80$ | 9,56592\% ${ }^{\text {22 }}$ | $8,74155{ }^{\circ} \mathrm{O}$ | 1,15041.85 | 53 |
| 4 | 0,08682.40 | 9,45152.72 ${ }^{\text {9,36506.37 }}$ | 8,73994 18 | $1,17212.45$ $1,19383.05$ | 54 |
| 5 | 0,10853.00 | 9,29623.89 | 8,7384173 8,7369720 | 1,23353.65 | 5 |
| 7 | $0,15194 \% 1$ | 9,23955.85 | $8,73560 \cdot 17$ | 1,23724.25 | 57 |
| 8 | 0,17364•81 | 9,19174.31 | 8,73430'22 | 1,25894.85 |  |
| 9 | 0,19535.41 | 9,15067.75 | 8,73306.96 | 1,28065.45 | 59 |
| 10 | 0,21706.01 | 9,11491 ${ }^{\text {\% }}$ 3 | 8,73190'03 |  |  |
| 11 | 0,23876.6x | 9,08343'27 | 8,730 | 1,32406.65 | 1 |
| 12 | $0,26047 \cdot 21$ | 9,05546-32 | 8,72973.84 | 1,34577.25 |  |
| 13 | 0,28217.8I | 9,03043. ${ }^{14}$ | 8,72873.94 | 1,36747.86 | 64 |
| 14 | 0,30388841 | 9,00788.84 | 8,72779 ${ }^{13}$ | $1,38918.46$ $1,41089.06$ | 64 |
| 15 | 0,32559 0,01 $0,34720 \cdot 61$ | $8,8747 \cdot 86$ $8,96891 \cdot 55$ | $8,72689 \cdot 12$ $8,72603 \cdot 69$ | $1,41089.06$ $1,43259.66$ | 65 |
| 17 | $\bigcirc$ | $8,95196.44$ | 8,72522.58 | 1,45430.26 | 67 |
| 18 | 0,39070.82 | 8,93643'16 | 8,72445'55 | 1,47600'86 | 68 |
| 19 | $0,41241 \cdot 42$ | 8,92215.44 | 8,72372.41 | 1,49771.46 | 9 |
| 20 | 0,43412.02 | 8,90899'55 | 8,72302.95 | 1,51942.06 | 70 |
| 21 | 0,45582.62 | 8,89683.75 | 8,72236-08 | 1,54112.66 | 71 |
| 22 | 0,47753.22 | 8,88557'98 | 8,72174 32 | 1,56283.26 | 72 |
| 23 | 0,49923.82 | 8,87513:51 | 8,7211479 | 1,58453.86 | 73 |
| 24 | 0,52094.42 | $8.86542^{\prime 7} 75$ | 8,72058.25 | 1,60624*47 | 74 |
| 25 | $0,54265.02$ | 8,85939 ${ }^{\circ} \mathrm{a}$ | 8,72004.53 | 1,62795.07 | 75 |
| 26 | $0,56435.62$ |  | 8,71953.49 | 1,64965.67 |  |
| 27 | $0,5806622$ | 8,84009'88 | $8,71904.99$ $8,71858.91$ |  | 77 |
| 28 | $0,60776 \cdot 82$ <br> $0,63947.43$ | $8,83274 \cdot 64$ $8,82586 \cdot 60$ | $8,71858.91$ $8,71815 \cdot 11$ | $1,09,306 \cdot 87$ $\mathbf{1 , 7 1 4 7 7} 47$ | 78 79 |
| 30 | $0,55118.03$ | 8,81942 08 | 8,71773.50 | 1,73648.07 | 80 |
| 3 I | 0,67288.63 | 8,85 33 | 8,717 | 1,75818.67 | 8 8 |
| 32 | 0,69459:23 | 8,80770.53 | 8,71696 | 1,77989.27 | 2 |
| 33 | $0,71629.83$ | 8,80237'78 | 8,71660.65 | 1,801 59.87 | 83 |
| 34 | $0,73800 \cdot 43$ | 8,797, ${ }^{\text {8,98 }}$ | $8,71626 \cdot 69$ | 1,82330\%47 | 84 |
| 35 | 0,75971.03 | $8,79265.92$ $8,7882.51$ | $8.71594 \cdot 41$ | 1,84501.07 $1,86671 \cdot 68$ | 88 |
| 36 | 0,78141.63 | $8,78822 \cdot 51$ $8.78404 \cdot 87$ | $8,71563.73$ $8,71534.56$ | $1,886712.68$ $1,8882 \cdot 28$ | 87 |
| 37 38 | ${ }^{0,80312.23}$ | 8,78001 28 | 8,7150083 | 1,91012.88 | 88 |
| 39 | 0,84653.43 | 8,77640'17 | 8,71480-48 | 1,93183.48 | 89 |
| 40 | 0,86824.04 | 8,77290•08 | 8,7145543 | 1,95354*08 | 90 |
| 41 | 0,88994.64 | 8,76959.63 | 8,7143160 | 1,97524.68 | 91 |
| 42 | 0,91165.24 | 8,76647.63 | $8,71408 \cdot 96$ | 1,99695.28 | 92 |
| 43 | 0,93335.84 | 8,76352 90 | 8,71387.43 | 2,0186, 88 | 93 |
| 44 | 0,95506.44 | 8,76074 38 | ${ }^{8,71366.95}$ | 2,04036.48 | 94 |
| 45 | 0,97677.04 | $8,75811.08$ $8,7562 \cdot 10$ | 8,7134748 $8,71328.97$ | $2,06207 \cdot 08$ $2,08377 \cdot 68$ | 95 96 |
| 47 | 1,02018.24 | $8,75326 \cdot 57$ | 8,7131137 | 2,10548-29 |  |
| 48 | 1,04188.84 | 8,75103.70 | 8,7129464 | 2,12718.89 | 98 |
| 49 | 1,06359.44 | 8,74892.76 | $8,71278 \cdot 73$ | 2,14889'49 | 99 |
| 50 | 1,08530'04 | 8,74693*04 | 8,7126.3'60 $8,70969^{\prime} 39$ | 2,1706009 | $\left\lvert\, \begin{aligned} & 100 \\ & \text { Perp } \end{aligned}\right.$ |

For explanation see pp. 216-228

## $5 \frac{1}{4}$ Per Cent.

| Years | Log. m. | Log. $a^{\text {² }}$. | Log. $a^{\prime}$. | Log. $\mathrm{m}^{\text {ma }}$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $0,02222.21$ | 0,02222.21 | 8,753.34*45 | 1,13332.73 | 51 |
| 2 | 0,04444*42 | 9,73216.10 | 8,75162.77 | 1,15554.94 | 52 |
| 3 | 0,06666.63 | 9,56694*40 | 8,75000.28 | 1,17777'15 | 53 |
| 4 | 0,08888.84 | 9,4527848 | 8,74846'45 | 1,19999'36 | 54 |
| 5 | 0,1111105 | 9,36655'99 | 8,74700:80 | 1,22221 57 | 55 |
| 6 | 0, 13333.26 | 9,2979602 | 8,74562.87 | 1,24443'79 | 56 |
| 7 | $0,15555.47$ | 9,24151.87 | $8,74432 \cdot 23$ | 1,26666.00 | 57 |
| 8 | 0,17777.68 | 9,19392.89 | 8,74308.46 | 1,28888.21 | 58 |
| 9 | 0,19999.89 | 9,15308.45 | 8,74191*19 | 1,31110'42 | 59 |
| 10 | 0,22222'10 | 9,1175415 | 8,74080'07 | 1,33332.63 | 60 |
| 11 | 0,24444.31 | 9,08626.07 | 8,73974 74 | 1,35554 ${ }^{\text {8 }}$ 4 | 61 |
| 12 | 0,26606.53 | 9,05850.87 | 8,73874.92 | 1,37777.05 | $\mathrm{h}_{2}$ |
| 13 | 0,28888.74 | 9,03368.13 | 8,73780'28 | 1,39999.26 | 63 |
| 14 | 0,31110'95 | 9,01133-85 | 8,73690'55 | 1,42221.47 | 6.4 |
| 15 | 0,33333 ${ }^{16}$ | 8,99112.48 | 8,73605.47 | 1,44443 68 | 65 |
| 16 | 0,35555.37 | 8,97275.36 | 8,73524.79 | 1,46665.89 | 66 |
| 17 | $0.37777 \times 58$ | 8,95599'05 | 8,73448.27 | 1,48888 | 67 |
| 18 | 0,39999'79 | 8,94064 15 | 8,73375 69 | 1,51110.31 | 68 |
| 19 | $0,42222.00$ | 8,92654* ${ }^{1}$ | 8,73306.85 | 1,53332.52 | 69 |
| 20 | 0,44444 ${ }^{21}$ | 8,91356.11 | 8,73241'53 | 1,55554\%3 | 70 |
| 21 | 0,46666.42 | 8,90157.50 | 8,73179.58 | 1,57776.94 | 71 |
| 22 | 0,48888.63 | 8,89048.55 | 8,73120'78 | 1,59999 15 | 72 |
| 23 | $0,51110 \cdot 84$ | 8,88020 51 | 8,73065 ${ }^{\circ} 0$ | 1,62221.36 | 73 |
| 24 | -,53333.05 | 8,87065.78 | 8,73012'07 | 1,64443.57 | 74 |
| 25 | 0,55555 26 | 8,86177.73 | 8,72961.84 | 1,66665'78 | 75 |
| 26 | 0,57777.47 | 8,85350'45 | 8,72914.16 | 1,68887.99 | \% |
| 27 | 0,59999.68 | 8,84,578.80 | 8,72868-91 | 1,71110.20 | 77 |
| 28 | 0,62221 ${ }^{\text {-89 }}$ | 8,83858.11 | 8,72825'97 | 1,73332.42 | 78 |
| 29 | 0,64444'10 | 8,83184.28 | 8,72785.20 | 1,75554.63 | 79 |
| 30 | $0,66666 \cdot 31$ | 8,82553 ${ }^{61}$ | 8,72746'50 | 1,7777684 | 80 |
| 31 | 0,68888• 52 | 8,8ı962.75 | 8,72709'77 |  | 81 |
| 32 | 0,71110'73 | 8,81408.72 | 8,72674.90 | 1,82221-26 | 82 |
| 33 | 0,73332.94 | 8,80888-80 | 8,72641'79 | 1,84443.47 | 83 |
| 34 | -,75555'16 | 8,80400'51 | 8,72610'36 | 1,86665.68 | 84 |
| 35 | 0,77777.37 | 8,79941.6ı | $8,72580.51$ | 1,8888789 | 85 |
| 36 | 0,79999.58 | 8,79510'05 | 8,72552'17 | 1,91110'10 | 86 |
| 37 | 0,82221'79 | 8,79103'94 | 8,72525.27 | 1,93332'31 | 87 |
| 38 | $0,84444^{\circ} 00$ | 8,78721-58 | 8,72499.72 | 1,95554.52 | 88 |
| 39 | 0,86606 21 | 8,78361-39 | 8,72475'46 | 1,97776.73 | 89 |
| 40 | 0,88888. ${ }^{42}$ | 8,78021'91 | 8,72452'42 | 1,99998.94 | 90 |
| 41 | 0,91110.63 | 8,77701-81 | 8,72430'55 | 2,02221'15 | 91 |
| 42 | 0,93332 84 | 8,77399-84 | 8,72409'77 | 2,04443'36 | 92 |
| 43 | 0,95555 ${ }^{\circ} \mathrm{5}$ | 8,77114.85 | 8,72390'04 | 2,06665.57 | 93 |
| 44 | 0,97777.26 | $8,7684.58$ | 8,72371 31 | 2,08887.78 | 94 |
| 45 | 0,99999.47 | 8,76591'74 | 8,7235.3 51 | 2, 11109.99 | 95 |
| 46 | 1,02221. 68 | $8,76351 \cdot 69$ | 8,72336.61 | 2, $13332 \cdot 20$ | 96 |
| 47 | 1,04443.89 | 8,76124.86 | 8,72320055 | 2,15554'41 | 97 |
| 48 | 1,06666'10 | $8,75910 \cdot 41$ | 8,72305:31 | 2, 17776.62 | 98 |
| 40 | 1,08888;31 | $8,75707.65$ | 8,72290.84 | 2,19998.83 | 99 |
| 50 | 1,11110.52 | 8,75515.88 | $\begin{aligned} & 8,722777^{\circ} 07 \\ & 8,7201593 \end{aligned}$ | 2,22221'05 | $\left\lvert\, \begin{aligned} & 100 \\ & \text { Perp } \end{aligned}\right.$ |

$5 \frac{3}{8}$ Per Cent．

| Years | Log．$r^{\prime \prime}$ ． | Log．$a^{n}$ ． | Leg．$a^{n}$ ． | Log．$r^{m}$ ． | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| I | 0，02273 76 | 0，02273．76 | 8，76154－27 | 1，15961＇70 | 5 I |
| 2 | 0，04547 52 | 9，7329275 | 8，75989 ${ }^{78}$ | 1，18235＊46 | 52 |
| 3 | 0，06821：28 | 9，56795 73 | $8,75834 \times 25$ | 1，20509＇21 | 53 |
| 4 | 0，09095．${ }^{\text {\％}}$ | 9，45404 02 | $8,75687 \cdot 16$ | 1，22782．97 | 54 |
| 5 | $0,11368.79$ | 9，36805 31 | $8,75548^{\circ} \mathrm{O}$ | 1，25056 73 | 55 |
| 6 | 0，13642．55 | 9，29969＇57 | $8,75416.42$ | 1，27330＇49 | 56 |
| 7 | $0,15916.31$ | 9，24347\％${ }^{\text {a }}$ | 8，75291＇90 | 1，29604：25 | 57 |
| 8 | $0,18190{ }^{\circ} 7$ | 9，19610－89 | 8，75174 ${ }^{\circ} \mathrm{4}$ | 1，31878 0 or | 58 |
| 9 | $0,20463 \cdot 83$ | 9，15548＊48 | 8，75062 ${ }^{\circ}$ | ェ，34151 77 | 59 |
| 10 | 0，22737 59 | 9，12015\％75 | 8，7495691 | I，36425＊53 | 60 |
| 11 | 0，25011 35 | 9，08909 72 | $8,7485^{\circ} 94$ | I，38699 28 | 6 r |
| 12 | 0，27285＇II | 9，06I54＇34 | 8，74762．28 | 1，40973．04 | 62 |
| 13 | 0，29558．86 | 9，0369工：89 | $8,74672 \cdot 65$ | 1，43246．80 | 63 |
| 14 | 0，31832．62 | 9，01477 ${ }^{\text {4 }} 8$ | 8，7458775 | 1，45520．56 | 64 |
| 15 | $0,34106{ }^{8}$ | 8，99475＇54 | 8,74507 ＇34 | 1，47794 ${ }^{3} 2$ | 65 |
| 16 | $0,363^{89} \cdot 14$ | 8，97657．46 | $8,7443 \mathrm{x}$＇ 7 | 1，50068 08 | 66 |
| 17 | 0，38653．90 | 8，95999 76 | 8,74359 or | 1，52341 84 | 67 |
| 18 | 0，40927．66 | $8,94483{ }^{\circ} \mathrm{O}$ | 8，74290．63 | 1，546x5．60 | 68 |
| 19 | 0，43201 42 | 8，93091 12 | $8,74225.86$ | 1，56889 35 | 69 |
| 20 | 0，45475＇18 | 8，91810＇20 | 8，74164＊46 | 1，59163＇1I | 70 |
| 21 | 0，47748＇93 | 8，90628．57 | $8,74106: 27$ | ェ，61436．87 | 71 |
| 22 | 0，50022．69 | 8，89536 21 | 8，74051 ${ }^{\text {＇13 }}$ | 1，63710．63 | 72 |
| 23 | 0，52296．45 | 8，88524 37 | 8，73998．87 | 1，65984＊39 | 73 |
| 24 | 0，54570＇21 | 8，87585＊47 | 8，73949＇34 | 1，68258＇I5 | 74 |
| 25 | 0，56843．97 | 8，86712 84 | $8,73902.38$ | 1，7053I＇91 | 75 |
| 26 | 0,5911773 | 8，85900．62 | $8,73857 \cdot 87$ | I，72805．67 | 76 |
| 27 | 0，6139149 | 8，85143 64 | $8,73815.66$ | 1，75079 42 | 77 |
| 28 | 0，63665．25 | 8，84437 ${ }^{27}$ | 8，73775＇64 | 1，77353 ${ }^{\text {18 }}$ | 78 |
| 29 | 0，65939 00 | 8，83777 ${ }^{\circ}$ | $8,73737.70$ | 1，79626．94 | 79 |
| 30 | 0，68212＇75 | 8，83160＇32 | 8，7370r＊73 | 1，81900 70 | 80 |
| 31 | $0,70486 \cdot 52$ | 8，82582＇71 | $8,73667.62$ | 1，84174＇46 | 8 I |
| 32 | $0,72760 \cdot 28$ | 8，82041 58 | 8，73635．28 | 1，86448 ${ }^{\prime 2}$ | 82 |
| 33 | 0，75034 ${ }^{\circ} 4$ | $8,81534{ }^{\circ} 22$ | 8,7360460 | 1，88721 98 | 83 |
| 34 | 0，77307 80 | 8，81058＇15 | 8，73575．51 | 1，90995 74 | 84 |
| 35 | 0，7958I＇56 | 8，806II ${ }^{\text {r }} 4$ | 8，73547 92 | 1，93269＊49 | 85 |
| 36 | 0，8t855＇32 | 8，80191 ${ }^{\text {r }}$ | 8，73521 76 | 1，95543 ${ }^{\circ} \mathbf{2 5}$ | 86 |
| 37 | 0,84129 ＇07 | 8，79796 ${ }^{\circ}$ | 8，7349695 | 1，978 ${ }^{\text {7 }}$ OI | 87 |
| 38 | 0，86402．83 | 8，79424．89 | $8,73473{ }^{\circ}{ }^{\circ}$ | 2，00090＇77 | 88 |
| 39 | 0，88676 59 | 8，79075＇33 | 8，7345I＇08 | 2，02364＊53 | 89 |
| 40 | 0，90950 35 | 8，78746＇19 | 8，73429 ${ }^{\circ} 1$ | 2，04638＊29 | 90 |
| 41 | 0，93224 11 | 8，78436 12 | 8，73409 ${ }^{8} 3$ | 2，06912．05 | 9 I |
| 42 | 0，95497 ${ }^{8} 7$ | 8，73143＊91 | 8，73390＇77 | 2，09185＊81 | 92 |
| 43. | 0，97771 63 | 8，77868．41 | 8，73372＇71 | 2，11459 ${ }^{56}$ | 93 |
| 44 | 1，00045＇39 | $8,77608 \cdot 56$ | 8，73355 ${ }^{\circ} 5$ | 2，13733．32 | 94 |
| 45 | 1，02319＇14 | $8,77363.39$ | 8，73339 ${ }^{\circ}{ }^{\circ}$ | 2，16007．08 | 95 |
| 46 | 1，04592＇90 | 8，77132\％ | 8.73323 ＇87 | 2，18280•84 | 96 |
| 47 | 1，06866．66 | $8,76913.57$ | $8,73309^{\circ} 24$ | 2，20554．60 | 97 |
| 48 | x，09140．42 | $8,76707^{\circ} 27$ | $8,73295^{\circ} 3^{6}$ | 2，22828．36 | 98 |
| 49 | x，11414 ${ }^{\text {18 }}$ | 8.76512 .41 | 8，73282 19 | 2，25102＇12 | 99 |
| 50 | 1，13687＇94 | $8,76328 \cdot 28$ | $\begin{aligned} & 8,73269.69 \\ & 8,73037.85 \end{aligned}$ | 2，27375．88 | 100 <br> Perp． |

$5 \frac{1}{2}{ }_{\text {Per Cert }}$

| Years | Log. ${ }^{\text {rem}}$ | Log. $a^{n}$. | Log. $a^{\text {n }}$. | Log. ${ }^{\text {r. }}$ | Yeara |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,02325.25 | 0,02325'23' |  | 1,18587.54 | 51 |
| 2 | 0,04650.49 | 9,7336913 | $88,76805.96$ | 1,20912•79 | 52 |
| 3 | 0,06975.74 | 9,56896.88 | $8,76657 \cdot 12$ | 1,23238.04 | 53 |
| 4 | 0,09300'98 | 9,45529 33 | $8,76516.5 \mathrm{I}$ | r,25563.28 | 54 |
| 5 | $0,11626.23$ 0,13951 | $9,36954.32$ $9,30141.85$ | $8,7638.3 .64$ $8,76258.08$ | 1,27888.53 | 55 |
|  | $0,16276{ }^{\circ}$ | 9,34542:48 | 8,76250 8,76139 | 1,30213.77 | 57 |
| 8 | 0,18601.97 | 9,19828.31 | 8,76027.21 | 1,34864.27 | 58 |
| 9 | 0,20927. 21 | 9,15787.81 | 8,75921'14 | 1,37189.51 | 59 |
| 10 | $0,23252.46$ | 9,12276.54 | 8,75820.82 | 1,39514.76 | 60 |
| 11 | 0,975577.71 | 9,09191.53 | 8,75725.94 | 1,41840.00 | 6! |
| 12 | 6,27902.95 | 9,06456.75 | 8,75636.22 | 1,44165'25 | 62 |
| 13 | 0,30228.20 | 9,04014:42 | 8,75551 34 | 1,46490.50 | 63 |
| 14 | 0,32553.44 | 2,01819 7 ? | 8,7547104 | 1,48815.74 | 64 |
| 15 | 0,34478.69 | 8,99837.09 | $8,75395{ }^{\circ} 06$ | 1,51140'99 | 65 |
| 16 | $0,37203 \cdot 94$ $0,39529 \cdot 18$ | 8,98037 8,9639 8.59 | $8,75323 \cdot 16$ $8,75255 \cdot 12$ | $1,53466 \cdot 23$ $1,5591 \cdot 48$ | 66 |
| 16 | 0,4185443 | 8,94899.9x | 8,75259.12 |  | 68 |
| 19 | 0,44179.67 | 8,93525 ${ }^{\text {8 }}$ | 8,75129\%7 | ז,60441 97 | 69 |
| 20 | 0,4 $0^{6504 \cdot 92}$ | 8,92261.82 | 8,75072.08 | 1,62767-22 | 70 |
| 21 | 0,48830.17 | 8,91096.99 | 8,75017.47 | 1,65092'46 | 1 |
| 22 | 0,5154541 | 8,90021.00 | 8,74n65.76 | 1,67417\% ${ }^{1}$ | 72 |
| 23 | 0,5348>.66 | $8,89025 \cdot 13$ | 8,74916.81 | 1,69742.96 | 73 |
| 24 | 0,5805 \% 9 | $8,8810 \mathrm{raz} \cdot 8$ | $8,74870 \cdot 46$ | 1,72068.20 | 74 |
| 25 | $0,5813 \mathrm{I} \cdot \mathrm{T} 5$ | ${ }^{8,87244} \cdot{ }^{8}$ | $8,74826 \cdot 57$ | 1,74393.45 | 88 |
| 26 | 0.60456 .40 | $8,86446 \cdot 99$ | 8,74785'02 | 1,76718.69 | 6 |
| 27 | 0,62781.64 | ${ }^{8,8,8704.46}$ | $8,74745^{\circ} 66$ | 1,79043.94 | 7 |
| 28 | $0,6510 f 1$ $0,67432 \cdot 1$ | $8,8,5012 \cdot 16$ $8,84365 \cdot 98$ | $8,74708 \cdot 39$ $8,74673.9$ | 1,81369.18 |  |
| 29 30 | $0,67432 \cdot 1$ $0,69757 \cdot 3$ | $8,84365.98$ $8,83762.25$ | 8,74673 8,74639 | 1,83694.43 <br> 1,86019.68 | 79 |
| 11 | 0,72082.62 | 8,83197'62 | 8,74608.00 | 1,88344'92 | 81 |
| 32 | 0,74407.87 | 8,82669.14 | 8,74578.00 | 1,90670'17 | 82 |
| 33 | $0.76733 \cdot 12$ | 8,82174우 | 8,74549*60 | 1,9299541 | 83 |
| 34 | $0,79058 \cdot 36$ | 8,81709'96 | 8,74522.68 | 1,95320.66 | 84 |
| 35 | $0,813^{8} 3.61$ | 8,81274•58 | 8,74497'18 | 1,97645'91 | 85 |
| 36 | 0,83708•8 | 8,80865:88 | 8,74473.04 | 1,99971 15 | 86 |
| 37 | 0,86034-10 | 8,80482.02 | 8,74450•16 | 2,0229640 | 87 |
| 38 | 0,88359'35 | 8,80121.27 | 8,74428.49 | 2,04621.64 | 88 |
| 39 | 0,90684'59 | 8,79782.07 | 8,74407.95 | 2,06946-89 | 89 |
| 4.0 | 0,93009.84 | 8,79462.99 | 8,74388.49 | 2,09272:14 | 90 |
| 41 | 0,95335.08 | 8,79162.68 | 8,74370.06 | 2,11597'38 | 91 |
| 42 | $0,97660 \cdot 33$ | 878879.93 | 8,74352.59 | 2,13922.63 | 92 |
| 43 | $0,99985^{\prime} 5^{8}$ | 8,78613.62 | 8,74336.05 | 2,16247*87 | 93 |
| 4 | 1,02310.82 | 8,78362.69 | $8{ }^{8} 74320 \cdot 36$ | 2,18573.12 | 94 |
| 45 | 1,04636\%7 | 8,78126.17 | $8,74305 \cdot 52$ | 2,20898.37 | 95 |
| 46 | 1,06961.3I | $8,77903 \cdot 16$ | 8,74291.44 | 2,2322.61 | 96 |
| 47 | 1,09286.56 | 8,77692.83 | 8,74278-10 | 2,25548.86 | 97 |
| 48 | 1,11611.8y | 8,77494.41 | 8,74265'45 | 2,27874•10 | 98 |
| 49 | 1,13937.05 | 8,77307.16 | $8,74253.48$ | 2,30199:35 | 99 |
| 50 | 1,16262.30 | 8,77130'41 | $8,74242 \cdot 13$ $8,74036 \cdot 27$ | 2,32 524'60 | $100$ |


| $5 \frac{5}{8}$ Per Cent. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | Log. 7 . | Log. $a^{\text {n }}$. | Log. $a^{\text {n }}$. | Log. 5 | Years |
| 1 | 0,02376.67 | 0,02376.67 | 8,77762.42 | 1,21210.28 | 51 |
| 2 | 0,04753.34 | 9,73445.76 | 8,7761149 | 1,23586.95 | 52 |
| 3 | 0,07130.02 | 9,56997.88 | 8,77469.7 | 1,25963.63 | 53 |
| 4 | 0,09506.69 | 9,45654.42 | 8,77334.67 | x,28340.30 | 54 |
| 5 | $0,11883.36$ | 9,37103.04 | 8,77207.81 | 1,30716.97 | 55 |
| 6 | $0,14260 \cdot 03$ | 9,30313.73 | $8,77088 \cdot 05$ | 1,33093.64 | 56 |
| 7 | 0,16636.71 | 9,24737.08 $9,20045 \cdot 16$ | 8,76974.98 | 1,35470'32 | 57 |
| 8 | 0,19013.38 | 9,2004.5.16 | 8,76868.19 | 1,37846.99 | 58 |
| 19 | 0,21390 $0,23766 \cdot 72$ | $9,16026.45$ $9,12536.53$ | $8,76767 \cdot 32$ $8,76672 \cdot 05$ | $1,40223 \cdot 66$ $\mathrm{r}, 42600 \cdot 33$ | 59 60 |
|  | 0,23766.72 | 9,12536.53 | 8,76072 ${ }^{\circ}$ | 1,42600 33 |  |
| 11 | 0, 26143.39 | 9,09472.42 | 8,76582.04 | 1,44977 ${ }^{\circ} 0$ | 61 |
| 12 | $0,28520.07$ | 9,06758.06 | 8,76497'00 | 1,47353.68 | 62 |
| 13 | 0,30896.74 | 9,04335 76 | 8,76416.63 | 1,49730'35 | 63 |
| 14 | $0,33273 \cdot 4 \times$ | 9,02160.62 | $8,76340 \cdot 69$ | 1,52107.02 | 64 |
| 15 | 0,35650.08 | 9,00197.10 | 8,76268.91 | 1,54483.69 | 65 |
| 16 | $0,38026 \cdot 76$ | 8,98416.55 | 8,76201.06 | 1,56860'37 | 66 |
| 17 | $0,40403 \cdot 43$ | 8,96795*54 | 8,76136.92 | 1,59237.04 | 67 |
| 18 | $0,42780 \cdot 10$ | 8,95314.68 | 8,76076.29 | 1,61613.71 | 68 |
| 19 | $0,45 \times 56 \cdot 77$ | 8,93957.74 | 8,76018-97 | 1,63990; ${ }^{8}$ | 69 |
| 20 | 0,47533*44 | 8,92711 0 | 8,75964*76 | 1,66367.05 | 70 |
| 21 | 0,49910'12 | 8,91562.74 | 8,75913.51 | 1,68743*73 | 71 |
| 22 | 0,52286.79 | 8,00502.91 | 8,75865.03 | 1,71120.40 | 72 |
| 23 | $0,54663 \cdot 46$ | 8,89522.82 | $8,75819 \cdot 18$ | 1,73497'07 | 73 |
| 24 | $0,57040 \cdot 13$ | 8,88614 87 | 8,75775 84 | 1,75873.74 | 74 |
| 25 | $0,59416.80$ | 8,87772.41 | 8,75734.84 | 1,78250.41 | 75 |
| 26 | 0,61793*48 | 8,86989.61 | $8,55696 \cdot 05$ | 1,80627.09 | 76 |
| 27 | 0,64170•15 | $8,86261 \cdot 26$ | 8,75659:36 | 1,83003.76 | 77 |
| 28 | 0,66546.82 | 8,85582.80 | 8,75624.66 | 1,85380.43 | 78 |
| 29 | 0,68923.49 | 8,84950.08 | 8,75591-83 | 1,8775710 | 79 |
| 30 | $0,7 \times 300 \cdot 17$ | 8,84359 43 | 8,75560.77 | 1,90133.78 | 80 |
| 31 | 0,73676.84 | 8,83807.55 | 8,75531-38 | 1,92,510.45 | 81 |
| 32 | 0,76053.51 | 8,83291 ${ }^{\circ} 44$ | 8,75503.57 | 1,94887.12 | 82 |
| 33 | 0,78430-18 | 8,82808*40 | 8,75477.27 | 1,97263.79 | 83 |
| 34 | 0,80806.85 | 8,8235600 | 8,75452.38 | 1,99640.46 | 84 |
| 35 | $0,83183.53$ | 8,8x93197 | 8,75428.84 | 2,02017.14 | 85 |
| 36 | $0,85560 \cdot 20$ | 8,81534.31 | 8,75406. 54 | 2,04393.81 | 86 |
| 37 | 0,87936.87 | 8,81161.15 | 8,75385.46 | 2,06770'48 | 87 |
| 38 | $0,90313.54$ | 8,80810-80 | 8,75365.50 | 2,09147.15 | 88 |
| 39 | $0,92690 \cdot 22$ | $8,80481 \cdot 69$ | 8,75346.62 | 2,11523.83 | 89 |
| 40 | 0,95066.89 | 8,80172-38 | 8,75328.74 | 2,13900.50 | 90 |
| 41 | 0,97443.56 | 8,79881.56 | 8,7531 $\times 84$ | 2,16277.17 | 91 |
| 42 | $0,99^{20} 23$ | 8,79608'02 | 8,75295-82 | 2,18653.84 | 92 |
| 43 | 1,0219690 | 8,79350.62 | 8,75280.68 | 2,21030.51 | 93 |
| 44 | 1,04573.58 | $8,79108.33$ | 8,75266.34 | 2,23407.19 | 94 |
| 45 | 1,06950.25 | 8,78880.18 | 8,75252.77 | 2,25783.86 | 95 |
| 46 | 1,09326.92 | 8,78665:27 | 8,75239.93 | 2,28160.53 | 96 |
| 47 | 1,11703.59 | 8,78462.79 | 8,75227.77 | 2,3053:20 | 97 |
| 48 | 1,14080.27 | 8,78271.96 | 8,75216.27 | 2,32913.88 | 98 |
|  | 1,16456.94 | 8,78092.06 | 8,75205.38 | $2,35290 \cdot 55$ | 99 |
| 50 | 1, $188833^{6} 1$ | 8,77922.42 | $\begin{aligned} & 8,75195^{\circ} 07 \\ & 8,75012.25 \end{aligned}$ | $2,37667022$ | $100$ Perp. |

## $5 \frac{3}{4}$ Per Cent.

| Years | Log. $\mathrm{r}^{\text {P. }}$ | Log. $a^{\prime \prime}$ | Log. $a^{n}$. | Log. re. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0,0242 | 0,02428.04 | 8,78551 ${ }^{\circ} \mathrm{O}$ | 1,23829.92 | 51 |
| 2 | 0,04856.08 | 9,73522.09 | 8,78406.54 | 1,26257.96 | 52 |
| 3 | 0,07284*11 | 9,57098.71 | $8,78270 \cdot 30$ | 1,28685'99 | 53 |
| 4 | 0,09712.15 | 9,45779:29 | 8,7814186 | 1,31114403 | 54 |
| 6 | $0,12140 \cdot 19$ | 9,37251.46 | $8,78020 \cdot 75$ $8,77006 \cdot 53$ | 1,33542*07 | 55 |
|  | $0,14568 \cdot 23$ $0,16996 \cdot 26$ | 9,30485.23 $9,24931 \cdot 21$ | 8,77798.80 | 1,3,9798-14 | 57 |
| 8 | 0, 19424.30 | 9,20261.44 | 8,7769718 | 1,40826.18 | 58 |
| 9 | 0,21852.34 | 9,16264.41 | $8,77601 \cdot 30$ | I, 43254.22 | 59 |
| 0 | $0,24280 \cdot 38$ | 9,12795*72 | 8,77510'82 | 1,45682.26 | 60 |
| 11 | 0,26\%08.41 | 9,09752.37 | 8,774 | 1,48110.29 | 61 |
| 12 | $0,29136.45$ | 9,07058.33 | 8,7734488 | 1,50538.33 |  |
| 13 | 0,3156449 | 9,04655•88 | $8,77268.80$ | I,52966.37 | 63 |
| 14 | $0,33992 \cdot 53$ | 9,02500.15 | 8,77196.99 | 1,553944.41 | 4 |
| 15 | $0,36420 \cdot 56$ | 9,00555.60 | $8,77129 \cdot 19$ $8,77065 \cdot 18$ | $1,57822.44$ $1,60250 \cdot 48$ 1,56 | 65 |
| 16 | 0,38848.60 | $8,98793.56$ | $8,77065 \cdot 18$ $8,77004 \cdot 74$ |  | 67 |
| 17 | $0,41276 \cdot 64$ $0,43704 \cdot 68$ | $8,97190 \cdot 62$ $8,95727.42$ | $8,77004 \cdot 74$ 8,7694766 | $1,62678 \cdot 52$ $1,65106.56$ | 68 |
| 18 | $0,4,3704 \cdot 68$ $0,46122.71$ | 8,95727.42 | $8,76893.75$ | 1,67534:59 | 69 |
| 20 | $0.48560 \cdot 75$ | 8,93157.74 | 8,76842.84 | 1,69962.63 | 70 |
| 21 | 0,50988•79 | 8,920 | 8,76794'75 | 1,72390.67 | 71 |
| 22 | $0,53416.83$ | 8,90981.98 | 8,76749:32 | 1,74818.71 | 72 |
| 23 | $0,55844 \cdot 86$ | 8,90017.44 | $8,76706 \cdot 41$ | 1,77246'74 | 73 |
| 24 | 0,58272.90 | 8,80124.64 | $8,76665 \cdot 86$ | 1,79674.78 | 4 |
| 25 | 0,60700'94 | $8,88296 \cdot 93$ | 8,76627.57 |  | 75 |
| 26 | 0,63128.98 | $8,87528 \cdot 47$ | $8,76591 \cdot 37$ | 1,84530.86 | 78 |
| 27 | ${ }^{0,65557}{ }^{\circ} 02$ | $8,86814 \cdot 10$ $886149 \cdot 22$ | $8,76557 \cdot 18$ $8,76524 \cdot 86$ | $1,86958.90$ $1,89386.93$ | 77 |
| 28 | $967985{ }^{\circ} \mathrm{O}$ 0,7041 0.09 | $8,86149 \cdot 22$ 8,85529 | $8,76524 \cdot 86$ $8,76494 \cdot 34$ | $1,89386.93$ $\mathbf{1}, 91814.97$ | 8 |
| 30 | $0,72841 \cdot 13$ | 8,84951.92 | 8,76465'49 | 1,94243 ${ }^{\circ}$ II | 80 |
| 31 | 0,75269-17 | 8,84412.52 | 8,76438.23 | 1,96671.05 | 81 |
| 32 | 0,77697-20 | 8,83908.53 | 8,76412.47 | 1,99099.08 |  |
| 33 | 0,80125.24 | 8,83437.28 | 8,76388.11 | 2,015 ${ }^{27} \cdot 12$ | 83 |
| 34 | 0,82553:28 | 8,82996.30 | 8,76365'10 | 2,03955.16 |  |
| 35 | 0,84981.32 |  | 8,76343.35 | 2,06383.20 | 85 86 |
| 36 | 0,87409'35 | 8,82196048 | $8,76322 \cdot 79$ $8,76303 \cdot 36$ | 2,08811.23 2,11239.27 |  |
| 37 <br> 3 | 0,89837.39 | $8,81833 \cdot 77$ 8,81493 | $8,76303.36$ $8,76284.98$ | $\begin{aligned} & \text { 2,11239.27 } \\ & \text { 2, } 13667.33^{2} \end{aligned}$ | 88 |
| 39 | $0,94693 \cdot 47$ | $8,81174 \cdot 25$ | 8,7626763 | 2, 16095.35 | 89 |
| 40 | 0,97121.50 | 8,80874.47 | 8,76251 21 | 2,18523; ${ }^{8}$ | 90 |
| 41 | 0,99549'5 | 8,80592.87 | 8,7623570 | 2,20951.42 | 2 |
| 42 | 1,01977.58 | 8,80328.26 | $8,76221.04$ | 2,23,379 46 | 92 |
| 43 | 1,04405.62 | 8,80079.50 | $8,76207 \cdot 18$ | $2,57^{807} 50$ | 93 |
| 44 | 1,06833.65 | 8,79845.58 | 8,76194.08 | 2,28235 ${ }^{\circ} 53$ | 94 |
| 45 | 1,09261-69 | $8,79625^{\circ} 54$ | 8,76181.68 | 2,30663.57 | 95 |
| 46 | 1,11689 73 | $8,79418 \cdot 47$ 8,79223 | $8,76160.97$ $8,76158.89$ |  |  |
| 47 |  | $8,79223.57$ $8,79040 \cdot 07$ | $8,76158 \cdot 89$ $8,76148 \cdot 42$ | $2,35519.65$ <br> 2,37947 | 97 98 |
| 49 | 1,16545.81 | 8,7784078 8,7886725 | 8 8,76138.53 | 2,40375.72 | 99 |
| $5{ }^{\circ}$ | 1,21401.88 | 8,78704.46 | 8,7612917 | 2,42803'76 | $\left.\right\|_{100} ^{1000}$ |


| $5 \frac{7}{8}$ Per Cent. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Toars | Log. $\mathrm{r}_{\text {. }}$ | Log. $a^{\text {n }}$. | Log. $a^{\text {a }}$. | Log. ${ }^{2}$. | Years |
| 1 | 0,02479.34 | 0,02479.34 | 8,79329.68 | $1,26446 \cdot 46$ | 51 |
| 2 | 0,04959 $0 \cdot 08$ | 9,7359832 | $8,79191 \cdot 28$ $8,79060.96$ | $1,28925.80$ $1,31450.14$ | 52 53 |
| 4 | ${ }^{0} 0,09917.37$ | 9,45903.94 |  | $1,38884.49$ <br> 1,36363 | 54 5 5 |
| 5 | ${ }^{0,12398 \cdot 71} 0$ | 9,30656.36 |  | $1,38843 \cdot 3$ $1,3883 \cdot 17$ | ${ }_{5}^{56}$ |
| 7 | 0,17355.40 | 9,25124.87 | 8,78611 13 |  | 57 |
| 8 | ${ }^{0,19834 * 74}$ | ${ }_{9}^{9,26477 \% 1.14}$ | $8,78514 \times 44$ 8,88423 | 1,48801•86 | 58 59 |
| 10 | $0,24793 \cdot 42$ | 9,13054 11 | 8,88337•41 | 1,48760'54 | 6 |
| 11 | ${ }^{0,27277}{ }^{0,77}$ | 9,10031.41 | $8,782.5643$ | 1,51239 88 | $6{ }^{6}$ |
| 12 | ${ }^{0,29752 \cdot 11}$ | 9,07357.53 | - | - 1,5371922 | 62 63 |
| 14 | $\stackrel{0}{0,34710.79}$ | 9,02838.32 | 8,78040.22 | 1,5867791 | 64 |
| 15 | ${ }^{0,37190 \cdot 13} \mathbf{0 , 3 9 6 5 9 4 8}$ | 8,00912.F5 |  | - | 6 |
| 17 | 0,42148.82 | ${ }^{8,97583} 38$ | $8,77858.88$ | 1,6611594 | 67 |
| 18 | 0,44628.16 | $88.96138 \cdot 11$ | $8,77805 \cdot 15$ | 1,68595 28 | ${ }_{69}^{68}$ |
| 19 | ${ }^{0,47108 \%}$ | $8,94155^{\circ} 41$ $8,9362.05$ | 8,777544888 |  | ${ }_{7}^{69}$ |
| 21 | 0, $52066 \cdot 19$ | 8,92486.34 | $8,77661 \cdot 55$ | 1,76033.31 | 71 |
| 22 | 0,54545: ${ }^{\text {a }}$ | 8,91458. 22 | $8,77688.98$ | 1,785512.65 | 72 |
| 23 24 | 0,55024:87 | -8,0959\% ${ }^{8,8063113}$ | 8,77578.81 | - $1,8,80991 \cdot 99$ | 73 74 |
| 25 25 25 | 0,669836.56 | 8,88877.95 | 8,77505.15 | - | ${ }_{75}$ |
| ${ }_{27}^{26}$ | 0,64462.90 | 8,88063.62 | 8,77471.40 | $1,88430 \cdot 2$ $1,90900.36$ | 78 |
| 28 | 0,6942159 | 8.8871146 | 8,77499.45 | 1,933888.70 | 78 |
| 29 | $0,71900 \cdot 93$ | ${ }^{8,86104} 9$ | ${ }^{8,7738508}$ | 1,95868.04 | 89 |
|  |  | 8,85539 88.73 88.8012 .57 | 8,77354'29 | 1,98347'39 |  |
| $3{ }_{32}$ | -0,76859.61 | ${ }^{8,85012 \cdot 57} 8$ | 8,77328.99 | 2,0082673 <br> 2,03306.0 | 81 88 81 |
| 33 | $0,81888.30$ | $8,88660 \cdot 73$ | 8,77282.59 | ${ }_{2,0578854}$ | 83 |
| 34 | 0,84297.64 | $8,8,3630 \cdot 93$ $8,83228 \cdot 85$ | $8,77261 \cdot 31$ 8,724123 | 2,08264 76 | 84 88 8 8 |
| 36 | 0,89256*32 | 8,82852 ${ }^{8} 47$ | 8,77222•27 | 2,13223.44 | 86 |
| 37 | 0,91735. ${ }^{\circ}$ | 88.82499 .95 | 8,7720436 |  | 887 |
| 38 39 | $\stackrel{0}{0,94215969} 0$ | 8,82169.99 | 8,7718747 | - | 88 89 |
| 40 | 0,99173 69 | 8,81569.33 | 8,77156*43 | 2,23140.81 | 90 |
| 4 4 | 1,01635304 | 8,81296.69 | $8,7142 \cdot 22$ $8,7128.79$ | ${ }^{2,256620} 15$ | ${ }_{92}^{91}$ |
| 42 | 1,04132 3 '3 ${ }^{8}$ | 8,81040'74 | 8,77128.79 | 2,28059.49 | 92 |
| 43 | 1,06611-72 ${ }^{1,0909}$ | $8,80800 \cdot 37$ 8,805747 | 8,77116.11 |  | 93 |
| 44 | 1,09091.06 | $8,80574.57$ 8,803623 | - |  | 94 |
| 46 | 1,11404975 | 8,80162:87 | 8,77022.14 | ${ }_{2,38016 \cdot 86}$ | 96 |
| 478 | 1,16520.09 | $8,79975.29$ $8,79798.87$ | 8,7072060 | $2,40496 \cdot 21$ 2,429755 | ${ }^{97}$ |
| 49 | 1,21487.77 | 8,79632:87 | 8,77053.55 | ${ }_{2,45454}$, 89 | 99 |
| 50 | 1,23967•12 | 8,79476.69 | $8,77045 \cdot 5$ $8,76900 \%$ | 2,49934:23 | ${ }_{1}^{100}$ |

For explanation see pp. 216-228

6 per Cont

| Years | Log. | Log. $a^{\text {a }}$. | Log. $a^{\text {n }}$. | Log. re. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,02530'59 | 0,02530'59 | 8,80098:36 | 1,29059'91 | 5 |
| 2 | 0,05061-17 | 9,73674*45 | 8,79965.87 | 1,31590.50 | 52 |
| 3 | 0,07591•76 | 9,57299.90 | 8,79841.25 | 1,34121.09 | 53 |
| 4 | 0,10122.35 | 9,46028.35 | 8,79723.99 | 1,36651.67 | 54 |
| 5 | 0,12652.93 | 9,37547'41 | 8,79613.68 | 1,39182.26 | 55 |
| 6 | 0,15183.52 | 9,30827.11 | 8,79509.86 | 1,41712.85 | 56 |
| 7 | 0,17714.11 | 9,25318.05 | 8,79412.15 | 1,44243*43 | 57 |
| 8 | 0,20244 69 | 9,20692'28 | 8,79320'16 | 1,46774*02 | 58 |
| 9 | 0,22775.28 | 9,16738.30 | 8,79233.56 | 1,49304.61 | 59 |
| 10 | 0,25305.87 | 9,1331171 | 8,79152.02 | 1,51835'19 | 60 |
| 11 | 0,27836.45 | 9,10309'50 | 8,79075-24 | 1,54365'78 | 61 |
| 12 | 0,30,367.04 | 9,07655.68 | 8,79002.03 | 1,56890.36 | 62 |
| 13 | 0,32897.62 | 9,05292.52 | 8,78934*2 | 1,59426.95 | 63 |
| 14 | 0,35428.21 | 9,03175.13 | 8,78870'67 | 1,61957 54 | 64 |
| 15 | 0,37958.80 | 9,01268.01 | 8,78810.23 | 1,64488.12 | 65 |
| 16 | 0,40489\%38 | 8,99542.52 | 8,78753.29 | 1,67018.71 | 66 |
| 17 | $0,43019.97$ | 8,97975 23 | 8,78699.65 | 1,69549'30 | 67 |
| 18 | 0,45550.56 | 8,96546'77 | 8,78649.09 | 1,72079:88 | 68 |
| 19 | 0,48081-14 | 8,95240'91 | 8,78601-46 | 1,74610'47 | 69 |
| 20 | 0,50611'73 | 8,94043.96 | 8,78556.56 | 1,77141 06 | 70 |
| 21 | 0,53142'32 | 8,92944 22 | 8,78514.26 | 1,79671.64 | 71 |
| 22 | 0,5,5772\% | 8,91931.64 | 8,78474.38 | 1,82202:23 | 72 |
| 23 | $0,58203.49$ | 8,90997.5 ${ }^{6}$ | 8,78436.80 | 1,84732.82 | 73 |
| 24 | 0,60734*8 | $8,90134^{\circ} 39$ | 8,78401 37 | 1,87263:40 | 74 |
| 25 | 0,63264 ${ }^{66}$ | $8,80335.51$ | 8,78367.97 | 1,89793'99 | 75 |
| 26 | 0,65795*25 | 8,88595 ${ }^{\circ} 9$ | 8,78336*49 | 1,92324.58 | 76 |
| 27 | 0,68325.84 | 8,8790797 | $8,78306 \cdot 81$ | 1,94855'16 | 77 |
| 28 | $0,70856 \cdot 42$ | 8,87269 55 | 8,78278.83 | 1,97385.75 | 78 |
| 29 | 0,73387\%01 | 8,86675'75 | 8,78252.45 | 1,99916.34 | 79 |
| 30 | 0,75917.60 | 8,86122'91 | 8,78227.58 | 2,02446*92 | 80 |
| 3 I | 0,78448•18 | 8,85607.74 | 8,78204 13 | 2,04977.51 | 81 |
| 32 | 0,80978.77 | 8,85127.26 | 8,78182.01 | 2,07508 10 | 82 |
| 33 | 0,83509.36 | 8,84678.81 | 8,78161'17 | 2,10038•68 | 83 |
| 34 | 0,8603994 | 8,84259'95 | 8,78141'51 | 2,1256927 | 84 |
| 35 | $0,88570 \cdot 53$ | 8,83868-45 | 8,78122.97 | 2,15099.86 | 85 |
| 36 | 0,91101'12 | 8,83502.33 | 8,78105.48 | 2, $17630 \cdot 44$ | 86 |
| 37 | 0,93631'70 | 8,83159 74 | 8,78088.99 | 2,2016I•03 | 87 |
| 38 | 0,96162'29 | $8,82839^{\circ} 0$ | 8,78073.45 | 2,22691 61 | 88 |
| 39 | 0,98692.87 | $8,82538 \cdot 58$ | 8,78058-78 | 2,25222'20 | 89 |
| 40 | 1,01223.46 | 8,82257'04 | 8,78044*95 | 2,27752'79 | go |
| 41 | $1,0375405$ | 8,81993'11 | 8,78031 ${ }^{\text {81 }}$ | 2,30283.37 | 91 |
| 42 | 1,06284.63 | 8,81745'57 | 8,78019.62 | 2,32813.96 | 92 |
| 43 | 1,08815.22 | 8,81513.34 | 8,78008.01 | 2,35344* 5 | 93 |
| 44 | 1,11345.81 | 8,81295.38 | 8,77997.08 | 2,37875.13 | 94 |
| 45 | $1,13876 \cdot 39$ | $8,81090.77$ | $8,77986 \cdot 75$ | $2,4040{ }^{\circ} 72$ | 95 |
| 46 | $1,16406 \cdot 98$ | $8,80898 \cdot 60$ | 8,77977.02 | 2,42936.31 | 90 |
| 47 | 1,18937.57 | $8,80718.09$ | $8,77967 \cdot 84$ | 2,45466.89 | 97 |
| 48 | 1,21468.15 | $8,80548 \cdot 49$ | $8,77959^{18}$ | 2,47997.48 | 98 |
| 49 | 1,23998.74 | 8,80389.09 | 8,77951 ${ }^{\circ} \mathrm{I}$ | 2,50528.07 | 99 |
| 50 | 1,26529:33 | 8,80239 25 | $\begin{aligned} & 8,77943 \cdot 31 \\ & 8,77815 \cdot 13 \end{aligned}$ | 2,53058.65 | 100 |

## $6 \frac{1}{4}$ Per Cent

| Years | Lag. r . | Log. $a^{\text {a }}$. | Log. $a^{\text {n }}$. | Log. F. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,026.32.89 | 0,02632.89 | 8,81 |  | 51 |
| 2 | 0,0526.79 | 9,73826.39 | 8,81485.28 | 1,36910.48 | 52 |
| 3 | 0,07898.68 | 9,57500'48 | 8,81371-35 | 1,39543; ${ }^{88}$ | 53 |
| 4 | $0,10531.58$ | 9,46276.53 | 8,812644.40 | 1,42176.27 | 54 |
| 5 | $0,13164.47$ | 9,37842•19 | $8,81163.97$ 888069.66 | 1,44809.16 | 55 |
| 6 | $0,151597 \cdot 36$ $0,18430 \cdot 26$ | $9,31167.48$ $9,25703.02$ | $8,81069 \cdot 66$ $8,80981 \cdot \mathrm{ra}$ | $1,47442.06$ $1,50074.95$ | 56 |
| 8 | 0,21063.15 | 9,21120.86 | 8,80897.90 | 1,52707.84 | 58 |
| 9 | 0,23696.04 | 9,17209'49 | 8,80819.75 | 1,55340'74 | 59 |
| 10 | $0,26328.94$ | 9,13824:52 | 8,80746'32 | 1,57973.63 | 6 |
| 11 | 0,28961.83 | 9, 10862'97 | 8,80677.32 | 1,60606.53 | 61 |
| 12 | 0,31594*73 | 9,08248.81 | 8,80612:48 | 1,63239.42 | 62 |
| 13 | $0,34227 \cdot 62$ | 9,05924 36 | 8,80551 $\cdot 55$ | 1,65872.31 | 63 |
| 14 | $0,36860^{\prime} 51$ | 9,03844 73 | 8,80494.27 | 1,6850.9.21 | 64 |
| 15 | $\bigcirc$ | 9,01974.43 | $8,80440 \cdot 43$ 8,80389 | 1,71138.10 | 65 |
| 16 | 0,42126.30 | 9,00284.80 $8,98752 \cdot 47$ | $8,80389 \cdot 82$ $8,80342 \cdot 25$ | $1,73771 \cdot 00$ $1,76403.89$ | 66 |
| 18 | $0,47392.09$ | 8,9735803 | 8,80297.51 | 1,79036.78 | 68 |
| 19 | 0,50024.98 | 8,96085.31 | 8,80255.45 | 1,81669.68 | 69 |
| 20 | 0,52657.88 | 8,94920'58 | 8,80215.91 | 1,84302'57 | 70 |
| 21 | 0,55290'77 | 8,93852.19 | 8,801 | 1,86935.46 | 1 |
| 22 | 0,57923.67 | 8,92870.11 | 8,80143*75 | 1,89568.36 | 72 |
| 23 | 0,60556.56 | 8,91965.64 | 8,80110-86 | 1,92201.25 | 73 |
| 24 | 0,63189.45 | $8,91131.26$ | 8,80079.93 | 1,94834.15 | 74 |
| 25 | 0,65822.35 | $8,90360 \cdot 33$ | 8,80050 84 | 1,97467.04 | 75 |
| 26 | 0,68455. 24 | 8,89647.05 | 8,80023.47 | 2,00099•93 | 76 |
| 27 | 0,71088.13 | 8,88986.25 | 8,79997.74 | 2,02732 ${ }^{\text {23 }}$ | 7 |
| 28 | $0,73721.03$ | 8,88373.38 | 8,79973 ${ }^{\text {8 }}$ | 2,05365 ${ }^{2} 2$ | 8 |
| 29 | $0,76353^{\circ}{ }^{2}$ | $8,87804 \cdot 36$ | 8,79950'76 | 2,07998.62 | 9 |
| 30 | 0,78986-82 | 8,87275.53 | 8,79929'33 | 2,10631.51 | 80 |
| 31 | 0,81619.71 | 8,86783.63 | 8,79909'18 | 2,13264:40 | $8 \mathrm{8I}$ |
| 32 | 0,84252.60 | 8,86325.70 | 8,79890'22 | 2,1589730 | 82 |
| 33 | 0,86885.50 | $8,85899 \cdot 07$ | 8,77872 ${ }^{8} 8$ | 2,18530'19 | 83 |
| 34 | 0,89518•39 | $8,85501 \cdot 33$ | $8,79835{ }^{\circ} 6 \mathrm{6I}$ | ${ }^{2,21163}{ }^{\circ} \mathrm{L} 2379{ }^{\circ}$ | 84 |
| 35 | $0,92151 \cdot 29$ $0,94784 \cdot 18$ | $8,85130 \cdot 29$ $8,84783.92$ | $8,79839 \cdot 82$ $8,79824.97$ | $\begin{aligned} & 2,23795.08 \\ & 2,26428 \cdot 87 \end{aligned}$ | 85 86 |
| 37 | 0,9747 ${ }^{\circ} \mathrm{O} 7$ | 8,84460 ${ }^{\text {86 }}$ | 8,79810.99 | 2,29061.77 | 87 |
| 38 | 1,00049.97 | 8,84158-20 | 8,7979784 | 2,31694.66 | 88 |
| 39 | 1,02682:86 | $8,83875 \cdot 63$ | 8,79785.47 | 2,34327.55 | 89 |
| 40 | 1,05315'75 | 8,83611 35 | 8,79773:83 | 2,36960.45 | 90 |
| 41 | 1,07948.65 | 8,83364.09 | 8,79762-88 | 2,39593.34 | 9 |
| 42 | 1,10581•54 | 8,83132'63 | 8,79752•5 | 2,42226.24 | 92 |
| 43 | I, 13214*44 | 8,82915.93 | 8,79742•87 | 2,44859 ${ }^{13}$ | 93 |
| 44 | 1,15847 33 | 8,82712.95 | 8,79733.75 | 2,47492 ${ }^{\circ}$ | 94 |
| 45 | 1,18480.22 | ${ }^{8,82522} 37$ | $8,79725 \cdot 16$ $8,79777.08$ | $2,50124.02$ $2,52757.81$ | 95 |
| 46 | $\begin{aligned} & \mathbf{1 , 2 1 1 1 3 \cdot 1 2} \\ & 1,2,3746^{\circ} 01 \end{aligned}$ | $8,32344.54$ 8,82177 | $8,79717.08$ $8,79709.48$ | 2,52757 $\mathbf{2 , 5 5 3 9}{ }^{\circ} \mathrm{l}$ | 96 |
| 48 | 1,26378.91 | 8,82020.77 | 8,79702.32 | 2,58023.60 | 98 |
| 49 | 1,29011 80 | $8,81873 \cdot 84$ | 8,79695.59 | 2,60656.49 | 99 |
| 50 | 1,31644'69 | 8,81736•00 | $8,79689 \cdot 25$ | 2,63289'39 | $\begin{aligned} & 100 \\ & \text { Perp } \end{aligned}$ |

For explanation see pp. 216-228

## $6 \frac{1}{2}$ Per Cent.

| Years | Log. | Log. $a^{*}$. | Log. $a^{n}$. | Log. ${ }^{\text {me.}}$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,02734.96 | 0,02734.96 | 8,83077.22 | 1,39483.00 | 51 |
| 2 | 0,0.5460'92 | 9,73977.92 | 8,82966.09 | 1,42217 ${ }^{\circ}{ }^{6}$ | 52 |
| 3 | 0,08204.88 | 9,57700.41 | 8,82862.00 | 1,44952.92 | 53 |
| 4 | 0,10939.84 | 9,46523.82 | 8,82764.50 | 1,47687.88 | 54 |
| 5 | 0,13674'80 | 9,38135-80 | $8,82673^{\prime} 15$ | 1,50422.84 | 55 |
| 6 | 0,16409.76 | 9,31506.37 | 8,82587.53 | 1,53157.80 | 56 |
| 7 | 0,19144* 73 | 9,26086.14 | $8,82507 \cdot 31$ | 1,58892.76 | 57 |
| 8 | 0,21879'69 | 9,21547 18 | 8,82432.11 | 1,5862\%'73 | 58 |
| 9 | $0,24614.65$ | 9,17677.99 | 8,82361 62 | 1,61362.69 | 59 |
| 10 | $0,27349.61$ | 9,14334-18 | 8,82295.53 | 1,64097.65 | 60 |
| 11 | 0,30084.57 | 9,11412.77 | 8,82233.58 | 1,66832 61 | 61 |
| 12 | $0,32819.53$ | 9,088.37.77 | $8,82175 \cdot 48$ | 1,69567.57 | 62 |
| 13 | 0,35554'49 | 9,06551 46 | 8,82121. 0 | 1,72302.53 | 63 |
| 14 | 0,38289'45 | 9,04509\%1 | 8,82069:90 | 1,75037'49 | 64 |
| 15 | 0,41024-41 | 9,02674.88 | 8,82021 99 | 1,77772.45 | 65 |
| 16 | 0,43759 37 | 9,01020.48 | 8,81977.04 | 1,80507.41 | 66 |
| 17 | 0,46494:33 | 8,99522.41 | 8,81934-88 | 1,83242.37 | 67 |
| 18 | 0,49229.29 | 8,98161.30 | 8,81895.33 | 1,85977.33 | 68 |
| 19 | 0,51964.25 | 8,96920.96 | 8,31858.32 | 1,88712.29 | 69 |
| 20 | 0,54699'22 | 8,95787'72 | 8,81823.41 | 1,91447. 25 | 70 |
| 21 | $0,57434 \cdot 18$ | 8,94749.91 | 8,81790.75 | 1,94182. 22 | 71 |
| 22 | 0,60169'14 | 8,93797. ${ }^{\circ}$ | 8,81760 10 | 1,9691718 | 72 |
| 23 | 0,62904'10 | 8,92921.85 | 8,8173 : 35 | 1,99652.14 | 73 |
| 24 | 0,65639'06 | 8,9211541 | 8,81704.36 | 2,02387.10 | 74 |
| 25 | 0,68374 ${ }^{\circ} 02$ | 8,91371.58 | 8,81679.04 | 2,05122.06 | 75 |
| 26 | 0,71108'98 | 8,90684.56 | 8,81655.27 | 2,07857.02 | 76 |
| 27 | 0,7384.94 | 8,90049.21 | 8,81632.98 | 2,10591.98 | 77 |
| 28 | 0,76578'90 | 8,89460.09 | $8,81612 \cdot 05$ | 2,13326.94 | 78 |
| 29 | 0,79313.86 | 8,88915.82 | 8,81592.41 | 2,16061.90 | 79 |
| 30 | $0,82048.82$ | 8,88410'09 | 8,81573.97 | 2,18796-86 | 80 |
| 31 | 0,8478,3.78 | 8,87940'g2 | 8,81556.67 | 2,21531.82 | 81 |
| 32 | 0,87518.74 | 8,87504 ${ }^{19}$ | 8,81540.43 | 2,24266.78 | 82 |
| 33 | 0,90253'71 | 8,87098.44 | 8,81525'19 | 2,27001 ${ }^{74}$ | 83 |
| 34 | 0,92988.67 | 8,86720.87 | $8,81510 \cdot 88$ | 2,29736.71 | 84 |
| 35 | 0,95723.63 | 8,86369 31 | 8,81497\%44 | 2,32471.67 | 85 |
| 36 | 0,98458.59 | 8,86041 78 | 8,81484.84 | 2,35206.63 | 86 |
| 37 | 1,01193.55 | 8,85736.47 | 8,81473.01 | 2,37941*59 | 37 |
| 38 | 1,03928.51 | 8,85451 74 | 8,81461-89 | 2,40676.55 | '38 |
| 39 | 1,06663*47 | 8,85186.07 | 8,81451-47 | 2,43411.51 | 69 |
| 40 | 1,09398.43 | 8,84938 ${ }^{\circ} \mathrm{Og}$ | 8,81441 67 | 2,46146.47 | 90 |
| 41 | 1,12133.39 | 8,84706.52 | 8,81432.48 | 2,48881.43 | 91 |
| 42 | 1,14868-35 | $8,84490 \cdot 21$ | 8,81423.86 | 2,51616.39 | 92 |
| 43 | 1,17603.31 | 8,84288.08 | 8,81415.75 | 2,54351-35 | 93 |
| 44 | 1,20338.27 | $8,84099^{13}$ | 8,81408-16 | 2,57086.31 | 94 |
| 45 | 1,23073.24 | $8,83922 \cdot 46$ | 8,8140102 | 2,59821.27 | 95 |
| 46 | 1,25808.20 | 8,83757.23 | 8,81394.32 | 2,62556.23 | 96 |
| 47 | 1,28543.16 | $8,83602 \cdot 65$ | $8,81388 \cdot 02$ | 2,65291 20 | 97 |
| 48 | 1,3127812 | $8,83458 \times 0$ | $8,81382 \cdot 12$ | 2,68026.16 | 98 |
| 49 | 1,34013.08 | $8,83322 \cdot 62$ | 8,81376.57 | 2,70761 12 | 99 |
| 50 | 1,36748.04 | 8,83195.89 | $\begin{aligned} & 8,81371 \cdot 36 \\ & 8.81291 \cdot 34 \end{aligned}$ | 2,73496.08 | $\left\lvert\, \begin{aligned} & 100 \\ & \text { Perp } \end{aligned}\right.$ |

\begin{tabular}{|c|c|c|c|c|c|}
\hline \multicolumn{6}{|c|}{$6 \frac{3}{4}$ Per Cent.} <br>
\hline Years \& Log. ${ }^{\text {re. }}$ \& Log. $a^{\text {n }}$. \& Log. $a^{\prime \prime}$. \& Log. ${ }^{\text {re. }}$ \& Years <br>
\hline 1 \& 0,02836.79 \& 0,02836.79 \& 8,84511.27 \& 1,44676.21 \& 51 <br>
\hline 2 \& $0,05673.58$ \& 9,74129 ${ }^{\circ} 9$ \& 8,84409.58 \& 1,47513.00 \& 52 <br>
\hline 4 \& -0,08510037 \& 9,57899.71 \& 8,84314.55 \& 1,503499.78 \& 53 <br>
\hline 4 \& $0,11347 \cdot 15$
$0,14183.94$ \& 9,46770 23
$9,38428 \cdot 23$ \& $8,84225^{\circ}{ }^{\circ}$
$8,84142.64$ \& $1,53186 \cdot 57$
$1,56023.36$ \& 54
55 <br>
\hline 8 \& $0,17020 \cdot 73$ \& 9,31843 ${ }^{\prime} 7$ \& 8,84064'98 \& 1,58860.15 \& 56 <br>
\hline 7 \& \& 9,26467.41 \& 8,83992.35 \& 1,61696.94 \& 5 <br>
\hline 9 \& $0,22694 \cdot 31$
$0,25531 \cdot 10$ \& 9,21971
9,278143
9,8 \& $8,83924.43$
8,8386089 \& $1,64533 \cdot 73$
$1,67370 \cdot 51$ \& 58 <br>
\hline 9 \& ${ }^{0}, 2836788$ \& 9, 9,14840'71 \& 8,83801 46 \& 1,732073
1, \& 69 <br>
\hline 11 \& 0,31204.67 \& 9,11958.96 \& 8,83745.86 \& 1,73044*09 \& 61 <br>
\hline 12 \& $0,34041^{1} 46$ \& 9,09422.58 \& $8,83693 \cdot 84$ \& 1,75880•88 \& 62 <br>
\hline 13 \& $0,36878 \cdot 25$
$0,39715.04$ \& 9,07173.86 \& $8,83645 \cdot 16$
$8,83590 \cdot 62$ \& $1,78717.67$
$\mathbf{1 , 8 1 5 4 . 4 6}$ \& 63 <br>
\hline 14 \& 0,39715 0.4 \& 9,05167.97
$9,03369.43$ \& 8,83599
8,83557 \& $1,81554.46$
1,84391.24 \& 64
65 <br>
\hline 16 \& 0,45388661 \& 9,01749'60 \& 8,83517'10 \& 1,87228.03 \& 68 <br>
\hline 17 \& 0,48225.40 \& 9,0285.12 \& $8,83479.77$ \& 1,90064•82 \& 67 <br>
\hline 18 \& 0,51062 219 \& 8,98956.65 \& 8,83444.82 \& 1,92901 61 \& 68 <br>
\hline 19 \& 0,53898.98 \& 8,97747
8,96645 \& $8,83412 \cdot 11$
$8,83381 \cdot 49$ \& 1,95738.40 \& 69 <br>
\hline 21 \& -,567577 \& 8,95637.47 \& 8,83352 83 \& 2,01411.97 \& <br>
\hline 22 \& 0,62409.34 \& 8,94713.96 \& 8,83325 ${ }^{\text {8, }}$ \& 2,014248.76 \& 71 <br>
\hline 23 \& 0,65246.13 \& 8,93866.31 \& 8,83300-87 \& 2,07085•55 \& 73 <br>
\hline 24 \& 0,68082.92 \& 8,93086.99 \& 8,8327736 \& 2,09922.34 \& 74 <br>
\hline 25 \& 0,70919.71 \& $8,923699^{42}$ \& 8,83255.33 \& 2,12759.13 \& 75 <br>
\hline 26 \& $0,73756.50$ \& 8,91707.8I \& $8,83234{ }^{\circ}{ }^{\circ}$ \& 2,15595*92 \& 76 <br>
\hline 27 \& $0,76593 \cdot 29$
$0,79430 \cdot 07$ \& $8,91097 \cdot 05$
$8,90532 \cdot 59$ \& $8,83215{ }^{\circ}{ }^{\circ}$
8,83197 \& 2,18432
$\mathbf{2 , 2 1 2 6 9}$

2 \& 77
78 <br>
\hline 29 \& 0,82266-86 \& $8,90010{ }^{40}$ \& 8,83180'40 \& 2,24106.28 \& 79 <br>
\hline 30 \& 0,85103.65 \& 8,89526-87 \& 8,83164.55 \& 2,26943 ${ }^{\circ} 7$ \& 80 <br>
\hline 31 \& $0,87940 \cdot 44$ \& $8,80{ }^{2} 8.74$ \& $8,83149.70$ \& 2,29779 ${ }^{86}$ \& 81 <br>
\hline 32 \& 0,90777.23 \& 8,88663.09 \& $8,83135 \cdot 80$ \& 2,32616.65 \& 82 <br>
\hline 33 \& 0,93614 02 \& $8,88277.31$
$8,87910 \cdot 00$ \& $8,83122 \cdot 78$
$8,83110 \cdot 58$ \& 2,35453.43
$2,38290 \cdot 22$ \& 83
84 <br>
\hline 35 \& 0,99287.59 \& 8,87586-0 \& $8,83009 \cdot 17$ \& 2,41127.01 \& 84 <br>
\hline 36 \& 1,02124.38 \& 8,87276.38 \& 8,83088.48 \& 2,43963.80 \& 86 <br>
\hline 37 \& 1,04961'17 \& 8,86988.30 \& $8,83078 \cdot 47$ \& 2,46800 59 \& 87 <br>
\hline 38 \& 1,07797.96 \& 8,86720'17 \& 8,83069.09 \& 2,49637.38 \& 88 <br>
\hline 39 \& 1,10634'75 \& 8,86470'49 \& $8,83060 \cdot 30$ \& 2,52474.16 \& 89 <br>
\hline 40 \& 1,13471 ${ }^{\prime} 53$ \& 8,86237'90 \& 8,83052 ${ }^{\circ}$ \& 2,55310'95 \& 90 <br>
\hline \& 1,16308.32 \& $8,86021 \cdot 12$ \& 8,83044 37 \& \& <br>
\hline 42 \& $1,19145^{\circ} 11$
$1,21881.00$
1,2485 \& 8,85819 ${ }^{\circ} \mathrm{O}$ \& 8,83037 15 \& 2,60984:53 \& 92 <br>
\hline 43 \& $1,21981.90$

$1,24818.69$ \& | $8,85630 \cdot 58$ |
| :--- |
| 8,85454 |
| 8 | \& $8,83030 \cdot 39$

8,83024 \& 2,63821:32 \& 93 <br>
\hline 45 \& 1,27655'48 \& 8,85290'74 \& 8,83018•13 \& 2,69494'90 \& 95 <br>
\hline 46 \& 1,30492'27 \& 8,85137.63 \& 8,83012 5 57 \& 2,72331.68 \& 96 <br>
\hline 48 \& \& 8,84994.69 \& 8,83007.37 \& 2,75168.47 \& 97 <br>
\hline 48 \& ${ }^{1,36165.84}$ \& $8,84861 \cdot 21$ \& 8,83002.50 \& 2,78005.26 \& 98 <br>
\hline 49 \& $1,39002 \cdot 63$ \& 8,84736.54 \& 8,82997.94 \& 2,80842 ${ }^{2} \mathbf{0}$ \& 99 <br>

\hline 50 \& 1,41839'42 \& 8,84620'09 \& $$
\begin{aligned}
& 8,82993 \cdot 66 \\
& 8,82930 \cdot 38
\end{aligned}
$$ \& 2,83678.84 \& \[

\left.\right|_{Perp.} ^{100}
\] <br>

\hline
\end{tabular}

For explanation see pp. 216-228

7 Per Cent.

| Years | Log. re. | Log. $a^{\text {n }}$. | Log. $a^{\text {n }}$. | Log. rer. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,02938.38 | 0,02938.38 | 8,85910.02 | 1,49857.27 | 51 |
| 2 | 0,05876.76 | 9,74279.72 | 8,85817.02 | 1,52795.64 | 52 |
| 3 | 0,08815.13 | 9,58098.38 | 8,85730.29 | 1,55734.02 | 53 |
| 4 | 0,11753.51 | 9,47015.78 | 8,85649'39 | 1,58672.40 | 54 |
| 5 | 0,14691.89 | 9,38719.52 | 8,85573.91 | 1,61610.78 | 55 |
| 6 | 0,17630.27 | 9,32179.69 | 8,85503.50 | 1,64549•16 | 56 |
| 7 | 0,20568.64 | 9,26846.85 | 8,85437 79 | 1,67487.53 | 57 |
| 8 | 0,23507.02 | 9,22393•12 | 8,85376.47 | 1,70425.91 | 58 |
| 9 | 0,26445'40 | 9,18607.01 | 8,85319.24 | 1,73364.29 | 59 |
| 10 | 0,29383.78 | 9,15344*14 | 8,85265.82 | 1,76302.67 | 60 |
| 11 | $0,32322 \cdot 16$ | 9,12501.56 | 8,85215.96 | 1,79241.04 | 61 |
| 12 | $0,35260{ }^{\circ} 53$ | 9,10003:26 | $8,85169 \cdot 41$ | 1,82179.42 | 62 |
| 13 | 0,3819891 | 9,07791.58 | 8,85125.95 | 1,85117.80 | 63 |
| 14 | 0,41137.29 | 9,05821.70 | 8,8508. 37 | 1,88056.18 | 64 |
| 15 | $0,44075.67$ | 9,04058•10 | $8,85047^{\circ} 48$ | 1,90994*5 ${ }^{6}$ | 65 |
| 16 | 0,47014.04 | 9,02472'23 | 8,85012.11 | 1,93932'93 | 66 |
| 17 | 0,49952.42 | 9,01040.68 | 8,84979 ${ }^{\circ} 7$ | 1,96871*31 | 67 |
| 18 | 0,52890.80 | 8,99744 14 | 8,84948.21 | 1,99809 69 | 68 |
| 19 | 0,55829.18 | $8,98566 \cdot 45$ | 8,84919 39 | 2,02748.07 | 69 |
| 20 | 0,58767.56 | 8,97493'95 | 8,84892*48 | 2,05686.44 | 70 |
| 2 L | 0,6ı705'93 | 8,96514.99 | 8,84867.34 | 2,08624•82 | 71 |
| 22 | 0,64644 ${ }^{\circ} 1$ | 8,95619.62 | 8,84843.87 | 2,11563*20 | 72 |
| 23 | 0,67582.69 | 8,94799 18 | 8,84821.93 | 2,14501.58 | 73 |
| 24 | 0,70521 -07 | 8,94046.18 | 8,84801 $\cdot 44$ | 2,17439'95 | 74 |
| 25 | 0,73459*44 | 8,93354.06 | 8,84782'30 | 2,20378.33 | 75 |
| 26 | 0,76397.82 | 8,92717.03 | 8,84764*42 | 2,23316.71 | 76 |
| 27 | 0,79336.20 | 8,92130.00 | 8,84747'72 | 2,26255 ${ }^{\circ} \mathrm{C}$ | 77 |
| 28 | 0,82274.58 | 8,91588.47 | 8,84732'11 | 2,29193.47 | 78 |
| 29 | 0,85212.96 | 8,91088.39 | 8,84717.54 | 2,32131•84 | 79 |
| 30 | 0,88151•33 | 8,90626.18 | 8,847 ${ }^{\circ} 3^{\prime 9}$ | 2,35070'22 | 80 |
| 31 | 0,91089.71 | 8,90198.61 | 8,84691 19 | 2,38008.60 | 81 |
| 32 | 0,94028.09 | 8,89802'78 | 8,84679 $3^{\circ}$ | 2,40946.98 | 82 |
| 33 | 0,96966.47 | 8,89436-08 | 8,84668-19 | 2,43885:35 | 83 |
| 34 | 0,99904 84 | 8,80096-14 | 8,84657.81 | 2,46823.73 | 84 |
| 35 | 1,02843.22 | 8,88780 ${ }^{83}$ | $8,84648^{\circ} 11$ | 2,49762'11 | 85 |
| 36 | I,05781-60 | $8,88488 \cdot 21$ | $8,84639 \cdot 5$ | 2,52700'49 | 86 |
| 37 | 1,08719.98 | 8,88216.49 | 8,84630.58 | 2,55638.87 | 87 |
| 38 | 1, $11658 \cdot 36$ | 8,87964'09 | 8,84622.67 | 2,58577.24 | 88 |
| 39 | 1,14596*73 | $8,87729^{\circ} 51$ | 8,84615.28 | 2,61515.62 | 89 |
| 40 | 1,17535'II | 8,87511.42 | 8,84608.37 | 2,64454.00 | 90 |
| 41 | 1,20473*49 |  | 8,84601 92 | 2,67392'38 | 91 |
| 42 | 1,23411.87 | 8,87119 ${ }^{8} 7$ | 8,84595.88 | 2,70330'75 | 92 |
| 43 | 1,26350. 24 | 8,86944 23 | 8,84590 25 | 2,73269'13 | 93 |
| 44 | 1,29288.62 | $8,86780 \cdot 72$ | 8,84584.98 | 2,76207.51 | 94 |
| 45 | 1,32237.00 | 8,86628-48 | 8,84580.06 | 2,79145.89 | 95 |
| 46 | 1,35165*38 | 8,86486.67 | 8,84575 ${ }^{46}$ | 2,82084.27 | 96 |
| 47 | 1,38103:76 | 8,86354.55 | 8,84571 15 | 2,85022.64 | 97 |
| 48 | 1,41042.13 | $8,8623 \mathrm{I} \cdot 45$ | 8,84567.14 | 2,87961 ${ }^{\circ} \mathrm{O}$ | 98 |
| 49 | 1,43980.51 | 8,86116.71 | 8,84563.40 | 2,90899.40 | 99 |
| 50 | 1,4691889 | 8,86009'74 | $\begin{aligned} & 8,84559 \cdot 88 \\ & 8,84509 \cdot 80 \end{aligned}$ | 2,93837 ${ }^{\prime} 8$ | ${ }_{100}^{100}$ |


| $7 \frac{1}{2}$ Per Cent. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | Log. $\mathrm{r}^{\text {m}}$ | Log. $a^{\prime \prime}$. | Log. $a^{\text {n }}$. | Log. rim. | Yeam |
| 1 |  | 0,03140.85 |  | $1,60183 \cdot 17$ | 51 |
| 2 | 0,06281 69 | 9,74579.88 | 8,88528.58 | 1,63324'01 | 52 |
| 3 | 0,09422.54 | 9,58493.88 | 8,884,56.46 | 1,66464.86 | 53 |
| 4 | 0,12563.39 | 9,47504.25 | $8,88389 \cdot 48$ | 1,69605 71 | 54 |
| 5 | 0,15704.23 | 9,39298.64 | 8,88327.27 | 1,72746.55 | 55 |
| 6 | 0,18845'08 | 9,32847.11 | 8,88269 ${ }^{\circ} 47$ | 1,75887.40 | 56 |
| 3 | 0,21985.92 | 9,27600.27 | 8,88215.78 | 1,79028-25 | 57 |
| 8 | 0,25126.77 | 9,23230.23 | 8,88165'89 | 1,82169.09 | 58 |
| 9 | 0,28267.62 | 9,19525.51 | 8,88119.53 | 1,85309'94 | 59 |
| 10 | 0,31408*46 | 9,16341.76 | $8,88076 \cdot 46$ | 1,88450'79 | 60 |
| 11 | 0,34549 31 | 9,13576.05 | 8,88036.42 | 1,91591 63 | 61 |
| 12 | $0,37690 \cdot 16$ | 9,11152.40 | 8,87999'21 | 1,94732.48 | 62 |
| 13 | 0,40831 00 | 9,09013•17 | 8,87964.63 | 1,97873.32 | 63 |
| 14 | 0,43971 85 | 9,07113.56 | $8,87932 \cdot 48$ | 2,01014 17 | 64 |
| 15 | 0,47112.70 | 9,05418.10 | 8,87902 60 | 2,04155 ${ }^{\circ} \mathbf{0}$ | 65 |
| 16 | 0,50253.54 | 9,03898.22 | 8,87874.82 | 2,07295.86 | 66 |
| 17 | 0,53394'39 | 9,02530.60 | 8,87848.99 | 2,10436.71 | 67 |
| 18 | 0,56535.24 | 9,01295'93 | 8,87834.99 | 2,13577.56 | 68 |
| 19 | 0,5967608 | 9,00178.08 | 8,87802 66 | 2,16718*40 | 69 |
| 20 | 0,62816.93 | 8,99163.44 | 8,87781-91 | 2,19859*25 | 70 |
| 21 | 0,65957.77 | 8,98240'41 | 8,87762.62 | 2,23000'10 | 71 |
| 22 | 0,69098.62 | 8,97399'04 | 8,87744.67 | 2,26140'94 | 72 |
| 23 | 0,72239'47 | 8,96630 ${ }^{\circ} 3$ | 8,87727.98 | 2,29281.79 | 73 |
| 24 | 0,75380.31 | 8,95928'03 | 8,87712.47 | 2,32422.64 | 74 |
| 25 | $0,78521 \cdot 16$ | $8,95284.4$ I | 8,87698.04 | 2,35563'48 | 75 |
| 26 | 0,81662.01 | 8,94694*14 | 8,87684.62 | 2,38704*33 | 76 |
| 27 | 0,84802.85 | 8,94152.15 | 8,87672.15 | 2,41845'17 | 77 |
| 28 | 0,87943'70 | 8,93653.99 | 8,87660'54 | 2,44986.02 | 78 |
| 29 | 0,91084'55 | 8,93195.65 | 8,87649*75 | 2,48126.87 | 79 |
| 30 | 0,94225'39 | 8,92773.59 | 8,87639*71 | 2,51267.71 | 80 |
| 31 | 0,97366:24 | 8,92384.62 | 8,87630.38 | 2,54408.56 | 81 |
| 32 | 1,00507.09 | 8,92025.89 | 8,87621'70 | 2,57549*41 | 82 |
| 33 | 1,03647 ${ }^{1} 93$ | 8,91694.84 | 8,87613.63 | 2,60690.25 | 83 |
| 34 | 1,06788.78 | 8,9138912 | 8,87606.12 | 2,63831 $\cdot 10$ | 84 |
| 35 | 1,09929'62 | 8,91106.65 | 8,87599.13 | 2,66971 95 | 85 |
| 30 | I, 13070.47 $\mathbf{I}, 16211.32$ | 8,90845.53 | 8,87592.64 | 2,70112'79 | 86 |
| 37 |  | 8,90604.04 | 8,87586.60 | 2,73253.64 | 87 |
| 38 | 1,19352'16 | 8,90380. 58 | 8,87580.98 | 2,76394'49 | 88 |
| 39 | 1,22493'01 | 8,90173.74 | 8,87575 ${ }^{\circ} 7$ | 2,79535.33 | 89 |
| 40 | 1,25633.86 | 8,89982.22 | 8,87570'89 | 2,82676.18 | 90 |
| 41 | ェ,28774.70 | 8,89804*82 | 8,87566.37 | 2,8,817.02 | 91 |
| 42 | 4,31915.55 | 8,89640'43 | 8,87562.17 | 2,88957.87 | 92 |
| 43 | 1,35056.40 | 8,89488.08 | 8,87558.25 | 2,92098.72 | 93 |
| 44 | 1,38197. 24 | 8,89346.82 | 3,87554'62 | 2,95239'56 | 94 |
| 45 | 1,41338.09 | 8,89215.84 | 8,87551 23 | 2,98380'41 | 95 |
| 46 | 1,44478.94 | $8,89094.35$ | 8,87548.08 | 3,01521-26 | 96 |
|  | 1,47619'78 | 8,889 81.64 | 8,87545.16 | $3,04662 \cdot 10$ | 97 |
| 48 | 1,50760'63 | 8,848877 ${ }^{\circ} \mathrm{O}$ | 8,87542.43 | 3,07802'95 | 98 |
| 49 | 1,53901 47 | $8,88779.99$ | 8,87539.89 | 3,10943.80 | 99 |
| 50 | 1,57042'32 | 8,88689.89 | $\begin{aligned} & 8,87537.54 \\ & 8.87506 \cdot 12 \end{aligned}$ | 3, $14084 \cdot 64$ | 100 Perp. |

For explanation see pp. 216-228

Per Cent.

| Years | Log. rn. | Log. $a^{n}$. | Log. ${ }^{\text {a }}$ | Log. ${ }^{\text {no. }}$ | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,03342'38 | 0,03342.38 | 8,91174.95 | 1,70461 15 | 51 |
| 2 | 0,06684:75 | 9,74878-43 | 8,91110'22 | 1,73803.53 | 52 |
| 3 | 0,10027.13 | 9,58886.92 | 8,91050:36 | 1,77145.90 | 53 |
| 4 | 0,13369'50 | 9,47989 ${ }^{\circ}$ | 8,90995 | 1,80488:28 | 54 |
| 5 | 0,16711.88 | 9,39873.22 | 8,9094.3 81 | 1,83830.66 | 55 |
| 6 | 0,20054.25 | 9,3,3508.74 | 8,90896.47 | 1,87173.03 | 56 |
| 7 | 0,23396. 63 | 9,28346*49 | 8,90852-68 | 1,90515.41 | 57 |
| 8 | 0,26739 ${ }^{\circ}$ | 9,24058.61 | 8,90812.18 | 1,938577 ${ }^{8}$ | 58 |
| 9 | 0,30081•38 | 9,20433.63 | 8,90774.70 | 1,97200'16 | 59 |
| 10 | 0,33423.76 | 9,17327.22 | 8,90740'04 | 2,00542'53 | 60 |
| 11 | 0,36766.13 | 9,146,36.48 | 8,90707.96 | 2,03884.91 | 61 |
| 12 | 0,40108.51 | 9,12285.46 | 8,90678.27 | 2,07227.28 | 62 |
| 13 | 0,43450.88 | 9,10216.54 | 8,90650'81 | 2,1056966 | 63 |
| 14 | 0,46793:26 | 9,08384.95 | $8,90625.41$ | 2,13912.04 | 64 |
| 15 | 0,50135 ${ }^{\circ} 63$ | 9,0675. ${ }^{27}$ | 8,90601.89 | 2,17254*41 | 65 |
| 16 | 0,53478.01 | 9,05298.95 | $8,90580 \cdot 13$ | 2,2059679 | 66 |
| 17 | 0,56820.38 | 9,03992 72 | 8,90559'98 | 2,23939'16 | 67 |
| 18 | 0,60162\%6 | 9,02817'29 | 8,90541 34 | 2,27281.54 | 68 |
| 19 | 0,63505•14 | 9,01756.60 | 8,90524.08 | 2,30623'91 | 69 |
| 20 | 0,6684751 | 9, $00797 \cdot 05$ | 8,90508'12 | 2,33960'29 | 70 |
| 21 | 0,70189.89 | 8,99927.09 | 8,90493.34 | 2,37308.66 | 71 |
| 22 | 0,73532.26 | 8,99136.82 | 8,90479.66 | 2,40651 ${ }^{\circ} 04$ | 72 |
| 23 | 0,76874*64 | 8,98417.69 | 8,90466.99 | 2,43993.42 | 73 |
| 24 | 0,80217.01 | 8,97762 28 | 8,90455 ${ }^{\circ} 7$ | 2,47335*79 | 74 |
| 25 | 0,83559.39 | 8,97164.12 | 8,90444'41 | 2,50678-17 | 75 |
| 26 | 0,86901 76 | 8,966r7.52 | 8,90434'37 | 2,54020:54 | 76 |
| 27 | 0,90244 14 | 8,961 17.47 | 8,90425 ${ }^{\circ} 7$ | 2,57362'92 | 77 |
| 28 | 0,93586.52 | 8,95659.53 | 8,90416.46 | 2,60705.29 | 78 |
| 29 | 0,96928.89 | 8,95239.79 | 8,90408.49 | 2,64047 67 | 79 |
| 30 | 1,00271*27 | 8,94854.71 | 8,90401•12 | 2,67390'04 | 80 |
| 31 | 1,03613.64 | 8,94501'18 | 8,90394.29 | 2,70732.42 | 81 |
| 32 | 1,06956.02 | 8,94176.38 | 8,90387'96 | 2,74074.79 | 82 |
| 33 | 1,10298:39 | 8,93877.80 | 8,90382.11 | 2,7741717 | 83 |
| 34 | 1,13640'77 | 8,93603'14 | 8,90376.68 | 2,80759.55 | 84 |
| 35 | 1,16983.14 | 8,93350.38 | 8,90371 68 | 2,84101.92 | 85 |
| 36 | 1,20325.52 | 8,93117.65 | $8,90367.03$ | 2,87444 30 | 86 |
| 37 | 1,23667.90 | 8,92903.25 | 8,90362 ${ }^{\circ} 7$ | 2,90786.6y | 87 |
| 38 | 1,27010.27 | 8,92705.68 | 8,90358 74 | 2,941 29.05 | 88 |
| 39 | 1,30352.65 | 8,92523.54 | 8,90355.06 | 2,97471.42 | 89 |
| 40 | 1,33695 ${ }^{\circ}$ | 8,92355:57 | 8,99351 64 | 3,00813-80 | 90 |
| 41 | 1,37037'40 | 8,92200'62 | 8,90348•49 | 3,04156.17 | 91 |
| 42 | 1,40379.77 | 8,92057.63 | 8,90345.56 | 3,07498.55 | 92 |
| 43 | 1,43722'15 | 8,91925.67 | 8,90342.85 | 3,10840.93 | 93 |
| 44 | 1,47064'52 | 8,91893.83 | 8,90340'34 | 3,14183.30 | 94 |
| 45 | 1,50406.90 | $8,9169 \mathrm{I} \cdot 32$ | 8,90338.02 | 3,17525.68 | 95 |
| 46 | 1,53749.28 | 8,91587.40 | 8,90335.86 | 3,20868-05 | 96 |
| 47 | 1,57091-65 | 8,91491'41 | 8,90333.87 | 3,24210.43 | 97 |
| 48 | 1,60434.03 | $8,91402 \cdot 71$ | 8,90332'04 | 3,27552-80 | 98 |
| 49 | 1,63776.40 | 8,91320'74 | 8,90330.33 | 3,30895.18 | 99 |
| 50 | 1,6718878 | 8,91244.98 | $\begin{aligned} & 8,90328 \cdot 74 \\ & 8,90309 \cdot 00 \end{aligned}$ | 3,34237'55 | $100$ |


|  |  |  | Per Cent |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Years | Log. $r^{*}$. | Log. $a^{\prime \prime}$. | Log. $a^{\prime \prime}$. | Log. 5 | Years |
| 1 | 0,03742.65 | 0,03742.65 | 8,95963.42 | $1,90875 \cdot 14$ | 51 |
| 2 | 0,07485.30 | $9,75470 \cdot 67$ | $8,95918.65$ | $1,9461779$ | 52 |
| 3 | $0,11227.95$ | 9,59665.73 | $8,95877 \cdot 61$ | $1,98360 \cdot 44$ | 53 |
| 4 | $0,14970 \cdot 6$ | 9,48949'26 | $8,95840.00$ | 2,02103.09 | 54 |
| 5 | 0,18713.25 | 9,41008.93 | $8,95805.52$ | 2,05845.74 | 55 |
| 6 | 0,22455.90 | 9,34814.86 | 8,95773.91 | 2,09588.39 | 56 |
| 7 | 0,26198.55 | 9,29817 ${ }^{\circ} 72$ | 8,95744.93 | 2,13331 04 | 57 |
| 8 | $0,29941 \cdot 20$ $0,33683.85$ | 9,25689.66 | 8,95718.36 | $2,17073.69$ $2,20816.34$ | 58 |
| 9 | 0,33683.85 | 9,22219.29 | 8,95694*I | 2,20816.34 | 59 |
| 10 | 0,37426.50 | 9,19262.35 | 8,95671 67 | $2,24558.99$ | 60 |
| 11 | 0,41169'15 | 9,16715.98 | 8,95651'19 | 2,28301.64 | 61 |
| 12 | 0,44911-80 | 9,14504:29 | 8,95632.40 | 2,32044.29 | 62 |
| 13 | 0,48654.45 | 9,12569'77 | 8,95615.18 | 2,35786.94 | 63 |
| 14 | 0,52397'10 | 9,10867\% 72 | 8,95599:38 | 2,39529.59 | 64 |
| 15 | $0,56139.75$ | 9,00362'78 | 8,95584.89 | 2,43272.24 | 65 |
| 16 | $0,59882.40$ | 9,08026.53 | 8,95571.61 | 2,47014.89 | 66 |
| 17 | $0,63625.05$ | 9,06835.74 | $8,95559.43$ | 2,50757.54 | 67 |
| 18 | 0,673677\% | 9,05771•28 | 8,95548.24 | 2,54500'19 | $68$ |
| 19 | 0,71110'35 | 9,04817.14 | 8,95537.99 | 2,58242.84 | 69 |
| 20 | 0,74853*00 | 9,03959.84 | 8,95528. 59 | 2,61985.49 | 70 |
| 21 | $0,78595.65$ | 9,03187.94 | 8,95519'96 | 2,65728.14 | 71 |
| 22 | 0,823,38.30 | 9,02491.64 | 8,95512'06 | 2,69470'79 | 72 |
| 23 | $0,86080.95$ | 9,01862.51 | 8,95504.80 | 2,7321.343 | 73 |
| 24 | $0,89823 \cdot 6$ | 9,01293:22 | 8,95498.14 | 2,76956008 | 74 |
| 25 | 0,93566.24 | 9,00777.44 | 8,95492.04 | 2,80698.73 | 75 |
| 26 | 0,97308.89 | 9,003a9.57 | 8,95486.44 | 2,84441.38 | 76 |
| 27 | 1,01051.54 | 8,99884.72 | 8,95481 29 | 2,88184.03 | 77 |
| 28 | 1,04794.19 | 8,99498.57 | 8,95476 59 | 2,9192668 | 78 |
| 29 | 1,0853684 | 3,9914730 | $8,95472 \cdot 26$ | $2,95^{669} 33$ | 79 |
| 30 | 1, $12279^{\circ} 49$ | 8,98827.51 | 8,95468.29 | 2,9941198 | 80 |
| 31 | 1,16022.14 | $8,98536 \cdot 18$ | 8,95464.65 | 3,03154.63 | 81 |
| 32 | 1,19764*79 | $8,98270 \cdot 62$ | 8,95461 32 | $3,06897 \cdot 28$ | 82 |
| 33 | $1,2350744$ | $8,98028 \cdot 40$ | $8,95458 \cdot 26$ | $3,1063993$ | 83 |
| 34 | $1,2.7250$ $1,30992.74$ | 8,97807.36 | $8,95455.45$ $8,95452.87$ | $3,14382 \cdot 58$ $3,18125.23$ | 84 |
| 35 | $1,30992.74$ $\mathbf{1}, 3473 \cdot 39$ | $8,97605 \cdot 57$ $8,97421.25$ | $8,95452 \cdot 87$ $8,95450.50$ | $\begin{aligned} & 3,18125 \cdot 23 \\ & 3,21867 \cdot 88 \end{aligned}$ | 85 |
| 36 | 1,34735.39 | $8,97421.25$ $8,97252.83$ | 8,95450 $8,95448 \cdot 34$ | 3,21867.88 | 87 |
| 37 38 | 1,3847804 $1,42220.69$ | 8,9725283 $8,97098.90$ | 8,95446 $8,95443^{\circ}$ | 3,29353•18 | 88 |
| 39 | 1,45963.34 | 8,96958.15 | 8,95444.2 | 3,33095.83 | 89 |
| 40 | 1,49705.99 | 8,96829 ${ }^{\circ} 43$ | 8,95442 85 | 3,36838-48 | 90 |
| 4 I | 1,53448•64 | 8,96711.67 | 8,9544I'31 | 3,4058I'13 | 91 |
| 42 | 1,57191*29 | 8,96603.91 | 8,95439 ${ }^{\text {81 }}$ | 3,44323.78 | 92 |
| 43 | 1,60933.94 | 8,96505.28 | 8,95438.61 | 3,48066.43 | 93 |
| 44 | 1,64676.59 | $8,96415.00$ | 8,95437.42 | $3.51800^{\circ} 08$ | 94 |
| 45 | 1,68419:24 | $8,96332 \cdot 33$ | 8,95436.34 | $3.55551 \cdot 73$ | 95 |
| 46 | 1,72161.89 | $8,96256 \cdot 63$ | $8,95435 \cdot 34$ | $3,59294: 38$ | 96 |
| 47 | 1,75904.54 | 8,96187.29 | $8,95434^{\circ} 43$ | 3,63037'03 | 97 |
| 48 | 1,79647'19 | 8,96123.78 | 8,95433. ${ }^{8}$ | 3,66779'68 | 98 |
| 49 | I,83389.84 | $8,96065^{\circ} 59$ | 8,95432.81 | 3,70522.33 | 99 |
| 50 | 1,87132.49 | 8,96012.28 | $\begin{aligned} & 8,9,4,32 \cdot 11 \\ & 8,954^{24} 4^{\circ} 25 \end{aligned}$ | 3,74264'98 | $\begin{aligned} & 300 \\ & \text { Perp. } \end{aligned}$ |

10 Per Cent

| Yeara | Log. 7 . | Log $a^{\text {n }}$. | Log. $a^{n}$ : | Log. $\boldsymbol{r}$. | Years |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0,04139.27 | 0,04139.27 | 9,00337.63 |  | 51 |
| 2 | 0,08278.54 | 9,76056.60 | 9,00306.83 | 2,15241.96 | 52 |
| 3 | 0,12417.81 | 9,60435\%1 | 9,00278.85 | 2,19381-23 | 53 |
| 4 | 0, 16557.07 | 9,49895.92 | 9,00253.42 | 2,23520'50 | 54 |
| 5 | 0, 20696.3- | 9,42127.07 | 9,002,30.32 | 2,27659 77 | 55 |
| 6 | 0,24835.61 | 9,36098.59 | 9,00209:33 | 2,31799.04 | 56 |
| 7 | 0,28974.88 | 9,31261-21 | 9,00190.26 | 2,35938.31 | 57 |
| 8 | $0,33114.15$ | 9,27287.16 | 9,00172.93 | 2,40077 ${ }^{\circ} 7$ | 58 |
| 9 | 0,37253.42 | 9,23965.11 | 9,00157'18 | 2,44216.84 | 59 |
| 10 | 0,41392'69 | 9,21150.87 | 9,00142.87 | 2,48356.11 | 60 |
| 1 | 0,45531 95 | 9,18741-68 | 9,00129.86 | 2,52495.38 | 61 |
| 12 | 0,49671-22 | 9,16661 75 | 9,00118.04 | 2,56634.65 | 62 |
| 13 | 0,53810'49 | 9,14853.64 | 9,00107.30 | 2,60773'92 | 63 |
| 14 | 0,57949 ${ }^{\circ} 6$ | 9,13272.77 | 9,00097. 53 | 2,64913.19 | 64 |
| 15 | 0,62089'03 | 9,11883.91 | 9,00088.65 | 2,69052.45 | 65 |
| 16 | $0,66228 \cdot 30$ | 9,10658.73 | 9,00080'59 | 2,73191'72 | 66 |
| 17 | 0,70367.57 | 9,09574*15 | 9,00073:26 | 2,77330.99 | 67 |
| 18 | 0,74506.83 | 9,08611.14 | 9,00066. 59 | 2,81470.26 | 68 |
| 19 | $0,7864{ }^{\prime} 10$ | 9,07753.82 | 9,00060. 53 | 2,85609. 53 | 69 |
| 20 | 0,82785:37 | 9,06988-86 | 9,00055'03 | 2,89748.80 | 70 |
| 21 | 0,86924.64 | 9,06304.95 | 9,00050.03 | 2,93888.06 | 71 |
| 22 | 0,91063.91 | 9,05692.41 | 9,00045'47 | 2,98027.33 | 72 |
| 23 | 0,95203.18 | 9,0514297 | 9,00041.34 | 3,02166.60 | 73 |
| 24 | 0,99342.44 | 9,04649.44 | 9,00037'57 | 3,06305'87 | 74 |
| 25 | 1,03481.71 | 9,04205.57 | 9,00034.16 | 3,10445'14 | 75 |
| 26 | 1,07620'98 | 9,03805.97 | 9,00031.05 | 3,14584.41 | 76 |
| 27 | 1,11760.25 | 9,03445.86 | 9,00028.23 | 3,18723.68 | 77 |
| 28 | 1,15899 $5^{2}$ | 9,03121.05 | 9,00025.66 | 3,22862.94 | 78 |
| 29 | 1,20038.79 | 9,02827.87 | 9,00023.33 | 3,27002 21 | 79 |
| 30 | 1,24178.06 | 9,02563.04 | 9,00021 21 | 3,31141.48 | 80 |
| 31 | 1,28317.32 | 9,02323.69 | 9,00019:28 | 3,35280. 75 | 81 |
| 32 | 1,32456.59 | 9,02107.23 | 9,00017.53 | 3,39420.02 | 82 |
| 33 | 1,36595.86 | 9,01911-38 | 9,00015.93 | 3,43559:29 | 83 |
| 34 | 1,40735. 13 | 9,01734 10 | 9,00014.48 | 3,47698.56 | 84 |
| 35 | 1,44874*40 | 9,01573.56 | 9,00013'17 | 3,51837.82 | 85 |
| 36 | 1,49013.67 | 9,01428.13 | 9,0001197 | 3,55977.09 | 86 |
| 37 | 1,53152.94 | 9,012y6.35 | 9,00010.88 | 3,60116.36 | 87 |
| 38 | 1,57292.20 | 9,01176.88 | 9,00009-89 | 3,64255.63 | 88 |
| 39 | 1,61431 47 | 9.01068.57 | 9,00009.00 | 3,68394,90 | 89 |
| 40 | 1,65570\%74 | 9,00970.32 | 9,00008-17 | 3,72534* ${ }^{17}$ | 90 |
| 41 | 1,69710.01 |  |  |  | 91 |
| 42 | 1,73849.28 | 9,00800 $3^{6}$ | 9,00006 76 | 3,80812.70 | 92 |
| 43 | 1,77988.55 | 9,00726.99 | 9,00006 14 | 3,84951•97 | 93 |
| 44 | 1.82127 .81 | 9,00660'40 | 9,00005.58 | 3,89091.24 | 94 |
| 45 | 1 81.267 .08 | 9,00599.94 | 9,00005 08 | 3,93230.51 | 95 |
| 46 | 1,4-+06.35 | 9,00545.06 | 9,00004 61 | 3,9736978 | 96 |
| 47 |  | 9,00495.22 | 9,00004.19 | 4,01509.05 | 97 |
| 48 | 1,98684.89 | 9,00449.97 | 9,00003•1 | 4,05648.31 | 98 |
| 49 | 2,02824.16 | 9,00408.87 | 9,00003.47 | 4,09787.58 | 99 |
| 50 | 2,06963.43 | 9,00371'54 | 9,00003.15 $9,00000 \cdot 00$ | 4,13926.85 | $\begin{aligned} & 100 \\ & \text { Perp. } \end{aligned}$ |

12 Per Coot.

| Yea | Log. ${ }^{\text {re. }}$ | Log. $a^{\text {n }}$. | Log. $a^{\circ}$. | Log. ${ }^{\text {r. }}$ | Year |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0,04921 80 | 0,0 |  | 2,51011'92 | 51 |
| 2 | 0,09843.60 | 9,77210*02 | 9,08038.09 | 2,55933'72 | 52 |
| 3 | 0, 14765.41 | 9,61945 76 | 9,08025.22 | 2,60855; ${ }^{2}$ | 53 |
| 4 | 0,1968j21 | 9,51750'53 | 9,88013.73 | 2,65777*32 | 54 |
| 5 | 0,24609 ${ }^{\circ} \mathrm{OI}$ | 9,44312.17 | 9,08003.48 | 2,70699.12 | 55 |
|  | $0,29530 \cdot 81$ $0,34452 \cdot 62$ | $9,3860 c$ 9,34067 |  | 2,75620'93 2,80542.73 |  |
| 8 | $0,39374 \cdot 42$ | 9,30384.99 | 9,07978.86 | 2,854273 | 58 |
| 9 | 0,44296.22 | 9,27341•55 | 9,07972 35 | 2,90386.33 | 59 |
| 10 | 0,49218.02 | 9,24793 44 | 9,07966.53 | 2,95308•14 | 6 |
| 11 | 0,54139 82 | 9,22638-18 | 9,07961 35 | 3,00229.94 | 61 |
| 12 | 0,59061.63 | 9,20800'26 | 9,07956 ${ }^{71}$ | 3,05151.74 | 62 |
| 13 | 0,63983.43 | 9,192222.50 | 9,07952.59 | 3, 10073.54 | 63 |
| 14 | 0,68905 23 | 9,17860.65 | 9,07948.88 | 3, 14995.35 | 64 |
| 15 | 0,7382783 $0,78748 \cdot 84$ | $9,16679 \%$ $9,15651.89$ | 9,07945.59 | $3,19917.15$ $\mathbf{3 , 1 9 8 3 8 . 9 5}$ | 65 66 |
| 17 | 0,83670.64 | 9,14754.25 | 9,07940 02 | 3,29760'75 | 67 |
| 18 | 0,88592.44 | 9,13968.18 | 9,07937.67 | 3,34682.55 | 68 |
| 19 | 0,93514 24 | 9,13278.15 | 9,07935•58 | 3,39604:36 | 69 |
| 30 | 0,9843605 | 9,12671-17 | 9,07933\% | 3,44526'16 | 70 |
| 21 | 1,03357\% ${ }^{5}$ | 9,12136.31 | 9,07932.04 | 3,49447.96 | 71 |
| 22 | 1,08279 65 | 9,11664:26 | 9,07930.55 | 3.54369'76 | 72 |
| 23 | 1, 13201.45 | 9,11247.08 | 9,07929:21 | 3,59291.57 | 73 |
| 24 | 1,18123.25 | 9, 10877.96 | 9,07928.03 | 3,64213.37 | 74 |
| 25 | 1,23045.00 | 9, 10551.01 | 9,07926.97 | 3,69135.17 | 75 |
| 26 | 1,27966.86 | 9, 10261 $\cdot 16$ | 9,07926.01 | 3,74056.97 | 76 |
| ${ }_{28}^{27}$ | $1,32888.66$ $1,37810 \cdot 46$ | 9,10003'99 | 9,07925 ${ }^{\text {9, }}$ | 3,78978.77 | 77 |
| 29 | 1,42732.27 | 9,09572 ${ }^{\prime} 8$ | 9,07923'75 | 3,88822.38 |  |
| 30 | 1,47654\%7 | 9,09392'45 | 9,07923.14 | 3,93744'18 | 80 |
| 31 | 1,52575.87 | 9,09232 ${ }^{\circ}$ | 9,07922 60 | 3,98665'98 | I |
| 32 | 1,57497.67 | 9,09089'38 | 9,07922•12 | 4,03587'79 | 82 |
| 33 | 1,62419'47 | 9,08962:36 | 9,07921'70 | 4,88509'59 | 8 |
| 34 | 1,67341 $\cdot 28$ | 9,08849.27 | 9,07921.31 | 4,1343139 | 84 |
| 35 | $1,72263.08$ $\mathrm{r}, 77184.88$ | 9,08748.55 | 9,07920.97 | 4,18353 19 | 85 86 |
| 36 |  | 9,08658.81 | 9,07920.67 | 4,23274.09 | 86 87 |
| 38 | 1,87028.49 | 9,88507.57 | 9,07920 15 | 4,33118.60 | 88 |
| 39 | 1,91950'29 | 9,88444.03 | 9,07919.93 | 4,36040'40 | 89 |
| 40 | 1,96872.09 | 9,88387.38 | 9,07919'74 | 4,42962-20 | 90 |
| 41 | 2,01793•89 | 9,08336.86 | 9,07919.57 | 4,47884.0I | 91 |
| 42 | 2,06715 ${ }^{\circ}$ | 9,08291.80 | 9,07919'41 | 4,52805.81 | 92 |
| 43 | 2,11637.50 | 9,08251 61 | 9,07919.27 | 4,57727.61 | 93 |
| 44 | 2,16559.30 | 9,08215 76 | 9,07919.15 | 4,62649'4I | 94 |
| 45 | 2,21481'10 | 9,88183.77 | 9,07919.04 | 4,67571 22 | 95 |
| 46 | 2,26402'90 2,31324 | 9,88555.23 9,08129 | 9,07918.04 $\mathbf{9 , 0 7 9 1 8} 8$ | $4,72493.02$ $4,77414.82$ | 96 |
| 48 | 2,36246.51 | 9,08107.04 | 9,07918•78 | 4,82336.62 | 98 |
| 49 | 2,41168.31 | 9,08086 76 | 9,07918'71 | 4,87258.42 | 99 |
| 50 | 2,46090'II | 9,08068.66 |  | 4,92180'23 | $\left.\right\|_{\text {Perr }} ^{100}$ |

## TABLE II.

## SHOWING

A. For every rate contained in the preceding table the logarithms, to 10 and 7 decimals, of $t, t$ being the interest of $£_{1}$ per annum or the rate ; of $r, r$ being $£ \mathrm{I}$ increased by interest for one year ; and the logarithm of $\log ^{2} r$.
B. For every rate between 0 and 10 per cent., proceeding by roths, the logarithms of $t$ and $r$.
C. For every fractionary rate between 0 and io per cent., proceeding by 12 ths, the logarithms of $t$ and $r$.

The rate of interest which M. Thoman calls $t$ is in modern notation denoted by $r$, and the amount of 1 in 1 period is now expressed by $\mathrm{r}+i$ instead of by $r$.

Table II This table shews the Logarithms of ( $t$ ) $(\boldsymbol{r})$, and ( $\log ^{2} \cdot r$ ), $t$ being the rate of interest per cent. and $r £ 1$ increased by ite intereat for one year.

| $\begin{gathered} \text { Rate } \\ \text { per } \\ \text { Cent. } \end{gathered}$ | Log. 6 | Log. r. | Logt. | $\begin{aligned} & \text { Rete } \\ & \text { per } \\ & \text { Cont. } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
| 1/8 | 7,69897 00043 | 0,00216.60658 | 7,33567.08 | 1/8 |
|  | 8,00000 00000 | 0,00432'13738 | 7,63562•18 | 1 |
| $1 / 8$ | 8,17609'12591 | 0,00646•60422 | 7,81063:85 | $11 / 8$ |
| $18 / 8$ | 8,21085.33653 | $0,007 \times 0 \cdot 055^{86}$ | 7,845 $3^{\circ} 27$ |  |
| 18 | 8,24303.80487 | 0,00753.44179 | 7,87704.97 |  |
| $1 \%$ | 8,27300'12721 | 0,00806.76217 | 7,90674.55 | $1 / 8$ |
| 2 | 8,30102*99957 | 0,00860 01718 | 7,93450.71 | 2 |
| $21 / 9$ | 8,32735.89344 | 0,00913.20695 | 7,96056.92 | $2 \mathrm{~J} / 6$ |
| $21 / 4$ | 8,35218.25t81 | 0,00966*33167 | 7,98512.62 | $2 \mathrm{~J} / 6$ |
| $28 / 8$ | 8,37566.36140 | 0,01019.39148 | 8,00834 10 | $28 / 8$ |
| $21 / 8$ | 8,39794.00087 | 0,01072.38654 | 8,03035.14 | $21 / 9$ |
| $2 \%$ | 8,41912.93a77 | 0,01125.31701 | 8,05127.49 | $28 / 8$ |
| 28 | 8,43933.26938 | 0,01178.18305 | 8,07121.28 | 28 |
| $2 \%$ | 8,45863.78490 | 0,01230.98482 | 8,09025.27 | $21 / 6$ |
| 3 | 8,47712.12547 | 0,01283'72247 | 8,10847.11 |  |
| $31 / 8$ | 8, 19485.00217 | 0,01336-39616 | 8,12593.52 | $3 \mathrm{3} / \mathrm{s}$ |
| $31 / 4$ | 8,51188.33610 | $0,01389 \cdot 00603$ | 8, 14270'41 |  |
| 3 m | 8,52827.37772 | 0,0144] 555226 | 8,15883.04 | $3 \%$ |
| $31 / 9$ | 8,54406.80444 | 0,01494.03498 | 8,17436-08 | $31 / 8$ |
| 38 | 8,5593a.80109 | $0,01546.45436$ | 8,18933.71 | 3 m |
| $31 / 4$ | 8,57403.12677 | 0,01598.81054 | 8,20379'70 |  |
| $3 \%$ | 8,58827'17068 | $0,0165 \mathrm{~J} 10368$ | 8,21777.43 | $3 \%$ |
| 4 | 8,60205'99913 | 0,01703.33393 | 8,2312908 |  |
| 4 \% | $8,61542 \cdot 39529$ | $0,01755.50144$ | $8,24440 \cdot 12$ | $41 / 9$ |
| $4 \%$ | $8,62838.893$ al | $0,01807.60636$ | 8,25710:39 | $41 / 6$ |
| $4 \frac{8}{1 / 8}$ | 8,64097.80574 | -,01859.64885 | 8,26943'10 | $4 \frac{8}{1 / 8}$ |
| $41 / 2$ | 8,65321.25138 | 0,01911.62904 | 8,28140 36 | $41 / 8$ |
| $4 \%$ | 8,66511.17371 | 0,01963.54710 | 8,29304.13 | 48 |
| $4 \sqrt{6}$ | 8,67669:36096 | 0,02015.40316 | 8,30436.19 | 4\% |
| $4 \%$ | 8,68797.46200 | 0,02067*19738 | 8,3) $538 \cdot 19$ | $4 \%$ |
| 5 | 8,69897.00043 | 0,02118.92991 | 8,32611.66 |  |
| $51 / 8$ | 8,70969.38697 | 0,02170.60088 | 8,33658.00 | $51 / 8$ |
| $51 / 4$ | 8,72015.93034 | $0,02222 \cdot 21045$ | 8,34678.52 | $51 / 4$ |
| $58 / 8$ | 8,73037.84686 | 0,02273.75876 | 8,35674*44 |  |
| $51 / 9$ | 8,74036.26895 | 0,02325.24596 | 8,36646.89 | $51 / 8$ |
| $5 \%$ | 8,75012.25268 | $0,02376 \cdot 67220$ | 8,37596.93 |  |
| $5 \%$ | 8,75966*78447 | $0,02428 \cdot 03760$ | 8,38525.54 |  |
| $5 \%$ | 8,76900'78709 | $0,02479.34233$ | 8,39433.65 | $5 \%$ |
| 6 | 8,77815.12504 | 0,02530.58653 |  | 6 |
| $61 / 4$ | 8,79588-00173 | $0,02632 \cdot 89387$ | $8,42043 \cdot 34$ | $61 / 4$ |
| $61 / 9$ | 8,81291 33566 | 0,02734'96078 | 8,43605.11 | $61 / 8$ |
| $68 / 4$ | 8,82930'37728 | $0,02836 \cdot 78837$ | 8,45282.69 | 6 \% $/ 4$ |
|  | 8,84509.80400 | $0,02938 \cdot 37777$ | 8,46810.76 |  |
| 7 \% | 8,87506. 12634 | $0,03140 \cdot 84643$ | 8,49704.67 | $71 / 8$ |
| 8 | 8,90308.99870 | 0,03342'37555 | 8,52405.52 | 8 |
| 9 | 8,95424.2,094 | $0,03742.64979$ | 8,57317.92 | 9 |
| 10 | 9,00000*00000 | 0,04139.26852 | 8,61692'36 | 10 |
| 12 | 9,07918.12460 | 0,04921 80227 | 8,69212.42 | 12 |

Table II This table shewe the Lagarithma of $t$ and $r$, $t$ heing the rate of interest per cent, and $r$ boing $£ 1$ increased by its intereat for one year.

| $\begin{aligned} & \text { Rato } \\ & \text { per } \\ & \text { Cent. } \end{aligned}$ | Log. r. | t. | g. | r. | $\begin{aligned} & \text { Rate } \\ & \text { por } \\ & \text { cont. } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| $9 / 10$ | 0,00086.77215 | 7,30103.00 | 8,71600 33 | 0,02201.57398 |  |
| 810 | 0,00130.09330 | $7,47712 \cdot 13$ $7,60206 \cdot 00$ | $8,72427 \cdot 59$ $8,73230 \cdot 38$ | $0,0224283712$ 0,02284•06109 |  |
| $1 / 10$ | -, | $7,69897 \cdot 00$ |  |  |  |
|  | -,00259'79807 | 7,77815. | 8,74818.80 | 0,02366.39182 |  |
| $1 / 10$ | 0,00302'94706 | 7,84509 80 | 8,75587-49 | 0,0240749873 |  |
| 810 | $0,00346.05321$ | 7,90309 00 | 8,76342.80 | 0,02448.56677 |  |
|  | $0,00389 \cdot 11662$ | 7,95424.25 | $8,77085 \cdot 20$ | $0,02489 \cdot 5961$ |  |
|  | 0,00432 13738 | 8,00000 00 | $8,77815 \cdot 13$ | $0,02530 \cdot 58653$ |  |
| $1 / 10$ | $0,00477^{111556}$ | 8,041 39.27 | $8,78532 \cdot 98$ | 0,02571.53839 |  |
|  | $0,00518.05125$ | 8,07918.12 | 8,79239.17 | 0,02612.45167 |  |
| 18/101 | 0,00560'94454 | $8,11394 \cdot 34$ $8,14612.80$ | 8,79934 ${ }^{\circ} \mathrm{C}$ | $\begin{aligned} & 0,02653 \cdot 32645 \\ & 0,02694 \cdot 16280 \end{aligned}$ |  |
| 1 $1 / 10$ |  | 8,17609 13 | 8,81291-34 | $0,02734 \cdot 96078$ |  |
| 1110 | $0,00680^{\circ} 37979$ | 8,20412.00 | 8,8 | ${ }^{0,02775 \cdot 72047}$ |  |
| $1 \%$ | 0,00732 ${ }^{\circ} 000$ | $8,23044 \cdot 89$ $8,2552 \cdot 25$ |  | $0,02816 \cdot 44194$ $0,02857 \cdot 12527$ |  |
| $18 / 10$ 18 |  | $8,25527 \cdot 25$ 8,27875 | 8,8 | $\left\lvert\, \begin{aligned} & 0,0285712527 \\ & 0,02897.77052 \end{aligned}\right.$ |  |
| 2 | $0,00860 \cdot 01718$ | 8,30103 ${ }^{\circ}$ | 8,84509-80 | 0,02938.37777 |  |
| $21 / 10$ | 0,000 | 8, |  | 0,02978.94708 | 7810 |
| $22 /$ | $0,00945^{\circ} 08958$ | 8,34242 27 | 8,8633 | $0,03019.47854$ |  |
| 23 | 0,00987.56337 | 8,36172'78 | 8,86332 | 0,03059.97220 |  |
| 26 | 0,010 | 8,33027 12 |  | $0,03140 \cdot 84643$ |  |
| $20 / 10$ | $0,01114{ }^{7} 3^{6}$ | 8,4149733 | 8,88081-36 | $0,0.3181 \cdot 22713$ |  |
| $27 / 10$ | $0,01157^{\circ} 044$ | 8,4313 | 8,88649 ${ }^{\circ}{ }^{\circ}$ | $0,03221 \cdot 57033$ |  |
| $2 \% 10$ $2 \%$ | 0,01 | 8,4 | 8,89762 71 |  |  |
| ${ }^{1}$ | -,01283.72247 | 8,47712 13 | 8,90309 00 | 0,03342 37555 |  |
| $31 / 10$ | 0,01 | 8, 49 | 8,9084 | $0,03382 \cdot 56940$ |  |
| $3 \% / 10$ | $0,01367.96973$ | 8,50515.00 | 8,91381.39 | 0,03 |  |
| $31 / 10$ | $0,01410 \cdot 03215$ |  |  |  |  |
| 3\% 10 | $0,0142{ }^{\circ} 0.53498$ | 8,5440680 | 8,92941.89 | 0,03542.97382 |  |
| $3 \% 10$ | $0,01535.97554$ | $8,556.30 \cdot 25$ | 8.93449 .85 | $\bullet, 03582.98253$ |  |
| $3 \% 10$ | 0,0157787564 | 8,5682 | $8,93951 \cdot 93$ $8,94448 \cdot 27$ | 0,03622.05441 |  |
| 3 | 0,01619'73535 | $8,57978 \cdot 36$ 8.59106 .46 | 8. 27 |  |  |
| 4 | 0,01703.33393 | 8,60206•00 | 8,95424-25 | 0,03742.64979 |  |
| $41 / 10$ | $0,01745^{\circ} 07295$ | 8,6127 |  | 0, |  |
| $43 / 10$ | 0,01786777 | 8,6 |  | 0,0 |  |
| 4810 | 0,0182 |  |  | 0 0,03862 0101619 |  |
| 4810 | ,,01911-62904 | 8,65321 25 | 8 8,97772.36 | 0,03941.41192 |  |
| 110 | -,01953 16845 | 8,66275 ${ }^{8} 8$ | 8,98227.12 | 0,03981 105541 |  |
| 410 | $0,01994 \cdot 668$ | 8,67209 79 | 8,98677.17 | $0,04020 \cdot 66276$ |  |
| $4 \% 10$ | $0,02036 \cdot 128$ | $8,68124 \cdot 12$ $8,69019 \cdot 61$ | 8,99122.61 | 0,04060'23401 |  |
| $4!$ | 0,0207718.9299 | $8.6089 \%$ | 9,00000-0 | 0,04139.26852 | $10^{10}$ |

Table II This table shews the Logarithme of $\mathbf{t}$ and r , $t$ being the rate of interest per ceat. and $r$ being $£ 1$ increased hy its intereat for one year.

| $\begin{aligned} & \text { Rate } \\ & \text { part } \\ & \text { Cent. } \end{aligned}$ | g. | . t. | g. 8. | g. $\quad$. | $\begin{gathered} \text { Rate } \\ \text { Per } \\ \text { Cent. } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $1 / 18$ | 0, |  | 8,70614:86 |  |  |
| 1/6 | 0,000 |  | 8,71321.04 |  |  |
| $1 / 1$ | 0,00144'52409 |  |  | 0,02256.58279 |  |
| $1 / 18$ | $0,00252 \cdot 60240$ | 7,76591•68 | 8,74689.36 | 0,02359.53688 |  |
| $8 /$ | 0,00288.56882 | 7,8239 |  | 0,02393.80075 |  |
|  | $0,00360 \cdot 41243$ | 7,92081. | 8,76591 | 0,02462'24749 |  |
|  | 0,00396.28971 | 7,96221 14 | 8,77207\% ${ }^{1}$ | 0,02496•43045 |  |
| $12 / 18$ | 0,00467.95548 |  | 8,78414'16 |  |  |
| $1 \%$ | $0,00503 \cdot 74407$ | 8,0669 |  | 0,0259881820 |  |
| $11 / 3$ | 0,00575.23289 | 8,1249 | $8,80163^{\cdot 23}$ | 0,02666-94283 |  |
| $13 / 18$ | 0,00610'93322 | 8,15126777 | 8,80730'95 | 0,02700.96512 |  |
| 11818 | $0,00682 \cdot 24,96$ $0,00717 \cdot 85846$ | 8,19957'24 $8,22184.87$ |  | $0,02768 \cdot 92984$ $0,02802 \cdot 87236$ |  |
| $15^{5}$ | 0,00788.99599 | 8,26324.14 | 8,834 | 0,02870.67791 |  |
| 1 | $0,00824.52110$ | 8,28 | 8,83989'68 | 0,02904 54103 | $61 / 18$ |
| $21 / 10$ | 0,00895.48427 | 8,31875•88 | 8,85023.77 | 0,02972.18816 |  |
| $2 \%$ | $0,0093{ }^{\circ} 9224 \mathrm{~T}$ | 8,33579 21 | $8,85531 \cdot 72$ | 0,03005.97225 |  |
| $21 / 8$ | $0,01001 \cdot 71208$ | 8,3679768 | 8,80530'14 | 0,03073.46170 |  |
| 28 | 0,010 |  | 8,87020 888 | $0,03107 \cdot 1$ |  |
| 2 m | 0,01142.94618 | 8,42596.87 | 8,88460.66 | 0,03174.49962 |  |
|  | 0,01213.39136 | 8,45229 ${ }^{7}$ | 8,89394'66 | 0,03275.30303 |  |
| $211 / 12$ | $0,01248 \cdot 57115$ | 8, | 8,89854.24 | 0,03308.85224 | $7^{11 / 28}$ |
| $31 / 22$ | 0,013 |  |  |  |  |
|  | $0,01353.93986$ | $8,50060 \cdot$ | $8,91204.48$ | 0,03 |  |
|  | $0,01424 \cdot 04391$ | 8,522878 | $8,92081 \cdot 88$ | 0,03476.210 |  |
| 3 | $0,01459.0535 .5$ |  | 8,92514.01 | 0,03599.605 |  |
| 3 | $\bigcirc, 0$ |  |  |  |  |
| 3 | 0,01633.67963 |  | 8,94612 -46 | 0,03676-19309 |  |
| $311 / 18$ | 0,01668.52074 | 8,59291.66 | 8,95020'25 | 0,03709.43415 | - 18 |
|  | 0,01738.11923 |  | 3 |  |  |
|  | 0,01772 87670 | 8,61978 ${ }^{8} 88$ | 8,96221. | $0,03809.0$ |  |
| $41 / 2$ | 0,01842'30828 | 8,63682.21 | $8,97003.68$ | $0,03875 \cdot 2$ |  |
| 4812 |  |  |  | ${ }^{0,03908}$ |  |
| 4 | 0,01980-83934 | 8,6 | 8,98527.67 | 0,0400\% 46432 |  |
|  | 0,02049'93951 | 8,68424:67 | 8,99270'08 | 0,04073.41642 |  |
| $41 / 18$ | Q,02084'44841 | 8,69167'08 | 8,99636 57 | 0,04106-35495 | $911 / 28$ |

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[^0]:    Examples．－A lease or annuity for 40 years to make 4 per cent．and to get back the principal is worth 19.793 or $19 \frac{3}{4}$ years＇purchase of the clear annual rent．At 6 per cent，it is worth $15 \% 046$ or 15 years＇purchase．

[^1]:    * London : Crosby Lockwood and Son.

[^2]:    For explanation see pp. 16, 17

[^3]:    For explanation see pp. 16, I7

