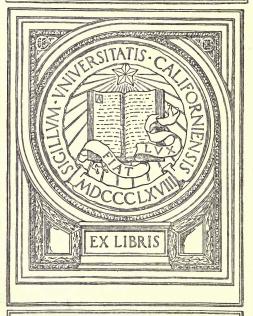
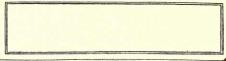


## GIFT OF Geo. Davidson









# A MANUAL

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# TABLES

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GLASS HYDROMETERS

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# A MANUAL,

CONTAINING

# TABLES

TO BE USED BY THE

### REVENUE OFFICERS OF THE UNITED STATES,

WITH

### GLASS HYDROMETERS,

INDICATING THE PER CENTS BY VOLUME OF

#### ALCOHOL IN SPIRITUOUS LIQUORS,

FOR

DETERMINING THEIR RELATIVE VALUES, &c.

CALCULATED BY

PROF. R. S. McCULLOH,

Messes. WOODS BAKER AND J. B. REYNOLDS, Assistants;

UNDER THE SUPERINTENDENCE OF

PROF. A. D. BACHE.

PRINTED BY AUTHORITY OF THE TREASURY DEPARTMENT OF THE UNITED STATES. Stereotyped by L. Johnson & Co.  $1\,8\,4\,9.$ 

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The following tables have been computed from data observed with the greatest skill and ones, and the calculations were, in every instance, verified by causing them to be made at the sage time independently by two persons. It is, therefore, believed that they are free from errors.

The work was undertaken by request of the Scoretary of the Treasury, and has been executed by Irak II. S. Midwilled, under the general direction and control of Prof. A. D. Buche, Superintendent of Weights, Measures, and Ralances.

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Those who desire full information with reference either to the fundamental data upon which these tables are based, or to the methods employed in their calculation, may refer to Sen. Doc. No. 50, 1st Sess. 30th Cong. and to a supplementary report submitted with this manual to the Treasury Department.

## EXPLANATION OF THE TABLES,

Those who desire full information with a

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### TABLE I.

#### TRUE PER CENTS.

This table shows the true per cent. of alcohol by volume, or the number of gallons of pure alcohol in 100 gallons of spirit, for every indication of the hydrometer, and every degree of temperature from 20° to 100° of Fahrenheit's thermometer.

Provided, that the number of gallons, or the volumes, be measured at the standard temperature of 60° of Fahrenheit's thermometer.

### Example.

Suppose a cask of spirits to have been gauged at the temperature of 60° Fahr., and

the liquor contained to have been found to be precisely 90 gallons at that temperature. Also, suppose a portion of the spirit, when tested with the hydrometer, at the temperature of 51° Fahr., to have given an indication of 48; then we find by the table 49.99 exactly, or 50 nearly, to be the corresponding true per cent. of alcohol; hence 44.99, or 45 gallons nearly, will be the quantity of alcohol upon which the value of the spirit depends and duty is to be levied.

Remark. As the operations of gauging are not to be depended upon for the measurement of quantities so small as hundredths of the gallon, the officers of the revenue should, in every instance, carry their calculations only to tenths of the gallon. Thus any quantity greater than 44.85, and less than 44.95, should be estimated at 44.90 only; and any quantity between 44.95 and 45.05 at 45.00.

### TABLE II. mortived add dies

precisely 90 gullons of that temperations a thing

# VOLUMES.

What we have said above has been on the supposition that the gauging of spirits has been performed at the temperature of 60° Fahr.;—a condition which in practice cannot be realized, except in a very few accidental instances.

That an increase of heat causes liquids to expand in volume, and a decrease produces contraction, is a familiar truth. Hence the gauged quantity of the same liquor in a cask varies with its temperature, and it is necessary to refer all measurements to some assumed standard temperature, such as 60° Fahrenheit; or, in other words, to reduce the quantities measured at other degrees of temperature to what they would have been if measured at a given temperature. Table II. has been constructed for this purpose; it shows at once the *volume* which

1000 gallons of spirit, measured at any temperature from 20° to 100° Fahr., would become if brought to the temperature of 60° Fahr., the true per cent. or strength being known.

### Example.

Suppose that a cask of rum is found by gauging to contain 100 gallons, the temperature of the liquor being 29° Fahr., and the observed indication of the hydrometer 60 per cent. Then, by Table I., we see that the true per cent. of this liquor is 60.60; and by Table II., that the 100 gallons at 29° Fahr. would expand to 101.44 gallons at 60° Fahr. Hence 101.44 multiplied by 60.6 per cent. gives 61.47 [7.56] gallons (or practically 61.5) as the quantity 67.6

These calculations are simple, but to render their performance by the revenue officers unnecessary, as well as to prevent errors, they have been made and embodied in the following table of *Commercial Values*; which alone is to be used in levying duties.

### TABLE III.

place from 209 to 100° Fair, word become if

#### COMMERCIAL VALUES.

This table is a combination of Tables I. and II. It gives at once, for any gauged quantity, particular temperature and corresponding indication of the hydrometer, the proportion, or per cent., of that quantity, which is pure alcohol. As the commercial values of liquors are proportional to their quantities and strengths, or to the total amount of alcohol they contain, this table is consequently one by which spirits may be bought and sold, and duties justly levied.

In the use of this table, it should be particularly observed that both the gauging and the proving must be performed at one and the same temperature.

### Example 1.

Suppose a cask to contain 100 gallons of whiskey gauged at 70° Fahr., and for which the corresponding indication is 10 upon the stem of the hydrometer. Then we see, at once, by Table III., that 9.06, or *practically* 9.1 gallons, is the quantity of alcohol in the 100 gallons of whiskey, which fixes its value.

### Example 2.

Suppose 120 gallons to be the gauged quantity of spirit in a cask; 67° Fahr. the temperature of the liquor; and 59 the indication of the hydrometer. Then 57.5 per cent. of the 120 gallons, or 69 gallons, is the quantity of pure alcohol in the cask.

must therefore be added to 67 61; making

The above is all that is necessary to permit any one to comprehend the nature and general mode of using these tables. Simple examples have been purposely selected to render this explanation as clear as possible. In practice, however, it will happen constantly that more complicated cases will arise; the observed temperatures and indications will be intermediate to whole degrees. In such instances, to arrive at the exact result, calculations become necessary. The following are examples of all possible particular cases.

### Example A.

The observed temperature being a whole number, but the indication fractional. Let 29° Fahr. be the temperature, and 60\frac{1}{3} the indication. Then we find, opposite the indication 60, in Table III., the value 67.61, and for the indication 61 the corresponding value 68.57; between which values 0.96 is the difference; one third of which difference, or 0.32, must therefore be added to 67.61; making 67.93, for the true value of the liquor.

### Example B.

The temperature being fractional, but the indication integral. Let 29½° Fahr. be the temperature, and 58 the indication. Then 65.72 is the value for 29° Fahr., and 65.44

that for 30°; the difference being 0.28, we have, by proportion, 0.14 for the number to be subtracted from 65.72 to obtain 65.58, the exact value.

# Example C.

Both the temperature and the indication being fractional. Let 68½ be the observed indication, and 28½° Fahr. the temperature. Then, for the indication 68, we find, for the temperatures 28° and 29°, the respective values 75.64 and 75.38; which give, by proportion, 75.51 for 28½°. Similarly, for the indication 69, we obtain, for the temperature 28½°, the value 76.43. These two results give, by proportion, 75.74 for the value corresponding to 68¼, the observed indication.

To avoid such calculations as those just given, and cause uniformity of practice in the collection of the revenue, it may be well to neglect fractions in observing temperatures and indications. Any temperature, for example, greater than 49½° and less than 50½°, should be assumed to be 50°; and similarly, any indication greater than 44½ and less than 45½ would be considered the same as though 45 were the observed number.

distribution and 222° But the temperature

### LABLE L

Show up the true per cents by wolume of edcohol contained in spirituous liquors for any predication of the hydrometer, and any temyerature between 20° and 100° of Pahrenhell's thermometer.

By the term true per cent by rolume, is signified the ratio of the volume of the contained alcohol, at.60° Fahrenheit, to the volume of the liquor itself measured at the same temperature.

### TABLE I.

Showing the true per cents by volume of alcohol contained in spirituous liquors for any indication of the hydrometer, and any temperature between 20° and 100° of Fahrenheit's thermometer.

By the term true per cent. by volume, is signified the ratio of the volume of the contained alcohol, at 60° Fahrenheit, to the volume of the liquor itself measured at the same temperature.

THER PER CENT.

		34°		228	
			8 800 Y		
		3.01			
179					
	Tie				30
11+7	-8		44.8		
	OI	16.01			
	15.1				
			88.64		
		4 50			
14.5		ES [1			
1	-81				
			22, 22		
10			DR TA		
	26	25-13	26,43	A6.62	10
	2.7				
	205				
	101				
41					
1 1	32				

TRUE PER CENT.

Indica- tion.	21°	22°	23°	24°	25°
1	0.79	0.83	0.88	0.92	0.97
2	1.80	1.86	1.91	1.97	2.02
3	2.84	2.90	2.95	3.01	3.06
4	3.90	3.95	4.01	4.06	4.11
5	4.95	5.00	5.06	2.11	5.17
6	6.06	6.13	6.17	6.23	6.28
7	7.19	7.25	7.30	7.36	7.41
8	8.33	8.38	8.44	8.49	8.54
9	9.47	9.52	9.57	9.62	9.67
10	10.60	10.65	10.69	10.74	10.78
11	11.93	11.98	12.02	12.07	12.11
12	13.21	13.25	13.29	13.33	13.37
13	14.49	14.52	14.56	14.59	14.63
14	15.77	15.80	15.82	15.85	15.88
15	17.19	17.20	17.22	17.23	17.24
16	18.69	18.70	18.70	18.71	18.71
17	20.20	20.19	20.17	20.16	20.12
18	21.69	21.67	21.64	21.62	21.59
19	23.31	23.26	23.22	23.17	23.13
20	24.99	24.93	24.86	24.80	24.73
21	26.72	26.62	26.53	26.43	26.34
22	28.43	28.31	28.20	28.08	27.96
23	30.03	29.87	29.73	29.58	29.44
24	31.52	31.37	31.51	31.06	30.90
25	33.14	32.94	32.75	32.55	32.36

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TRUE PER CENT.

Indica- tion.	21 °	220	23°	24 °	25°
T P					
26 27	34.97	34·95 36·13	34·92 35·89	34.90	33.88
28	36.38	37.72	37.45	37.17	36.89
29 30	39.58	39.28	38.97	38.67	38.37
31	42.70	42.33	41.97	41.60	41.54
32	43.95	43.57	43.18	42.80	42.42
33 34	45.22	44.82	44.42	44.02	43.62
35	47.39	46.97	46.56	46.14	45.72
36	48.47	48.04	47.61	47.18	46.75
37 38	49.60	49.17	48.73	48.30	47.86
39	51.37	50.94	50.51	50.08	49.65
40	52.05	51.64	51.53	50.82	50.41
41 42	52.76	52.36	51.97	51.57	21.12
43	54.25	53.88	53.50	53.13	52.76
44 45	55.88	54.69	54.33	53.96	53.60
46	56.72	56.37	56.02	55.67	55.32
47	57.52	57.18	56.84	56.50	56.16
48 49	58.27	57°94 58°74	57.62	57.29	56.96
50	59.90	59.59	59.29	58.98	58.67

TRUE PER CENT.

Indica- tion.	21°	22°	23°	24°	25°
51	60.76	60.46	60.16	59.86	59.56
52	61.65	61.35	61.05	60.75	60.45
53	62.52	62.23	61.93	61.64	61.35
54	63.32	63.04	62.75	62.47	62.19
55	64.11	63.84	63.57	63.30	63.03
56	65.00	64.73	64.47	. 64.20	63.93
57	65.88	65.61	65.35	65.08	64.82
58	66.77	66.51	66.25	65.99	65.73
59	67.66	67.41	67.16	66.91	66.66
60	68.53	68.29	68.04	67.80	67.55
				1 20	
61	69.45	69.20	68.96	68.71	68.47
62	70.40	70.16	69.91	69.67	69.43
63	71.29	71.05	70.82	70.28	70.34
64	72.22	71.99	71.75	71.52	71.28
65	73.16	72.93	72.69	72.46	72.23
66	74.10	73.87	73.65	73.42	73'19
67	75.09	74.87	74.64	74.42	74.19
68	75.98	75.75	75.53	75.30	75.08
69	76.83	76.61	76.39	76.17	75:95
70	77.74	77.52	77.31	77.09	76.87
71	78.68	78.46	78.24	78.02	77.80
72	79.58		79.15	78.94	78:73
73	80.21	79.37	80.08	79.87	79.66
74	81.45	81.21	81.01	80.80	80.60
75	82.33	82.13	81.92	81.72	31.21
1.0	02 33	1 2 13	0192	01/2	31 ) 1
-					

TRUE PER CENT.

Indica- tion.	21	0	22	0	28	0	24	0	25°	Transfer a
76 77 78 79 80	84 85 86	·26 ·21 ·15 ·09 ·02	84	96	83 84 85	·87 ·81 ·76 ·70 ·63	83 84 85	·67 ·61 ·57 ·50 ·44	82·4 83·4 84·3 85·3 86·2	7 0
81 82 83 84 85	88 89 90	.97 .92 .86 .76	87 88 89 90	7 <sup>2</sup> 67 57	88 89 90	·58 ·53 ·48 ·39 ·27	88 89 90	·39 ·33 ·29 ·20 ·09	87·2 88·1 90·0 90·9	4 0 1
86 87 88 89 90	92 93 94 95 96	·41 ·29 ·19	92° 93° 94° 95° 95°	12	93 93 94	·18 ·06 ·94 ·85 ·69	92 92 93 94 95	77	91·8 92·7 93·5 94·5 95·3	I 9 I
91 92 93 94 95	96 97 98 99 100	72 62 42	96 97 98 99 100	57 46 27	97 98 99	·52 ·41 ·31 ·12 ·92		·26 ·16 ·97	96·2 97·1 98·0 93·8 99·6	0 0 2
96 97 98 99 100	100 101 102 103 104	74 53 35	100 101 102 103 104	60 40 23	100 101 102 103 103	·45 ·28 ·12	100 101 102 103 103	31	100.4 101.1 102.0 102.8 103.7	7 3 8

TRUE PER CENT.

Indica- tion.	26	0	27	0	28	300	29	0	30	0
1 2	2	05	2 2	13	2	·2 I	8 2	29	2	37
3 4 5	4	16	4	18	4	·23 ·27 ·30	4	32	084	35 37 39
6 7	867.	32	557.	37	28 7	54	88 7	46	887	50
8 9 10		58 70 81		62 74 84	9	·65 ·77 ·88	No.	81	009	73 84 94
11 12	13.	39	13.	41	13	18		45	13	47
13 14 15	14.	88	14.	88	15	89		67 89 22	14	89
16 17 18	18· 20· 21·	II	18.	07	20		18	00	19.	95
19 20	23.	06	21.	98	21	91	21.	83	21.	76
21 22 23	26· 27· 29·	82	26· 27· 29·	68	26 27 28	55	25· 27· 28·	41	25° 27° 28°	27
24 25	30.	70	30.	49		29	30.	08	29.	98

TRUE PER CENT.

Indica- tion.	26	0	27	0	28	0	29	0	30	0
26 27 28 29 30	36· 38·	14	34 36 37	·42 ·89 ·34 ·77 ·17	34 36 37	·20 ·65 ·07 ·47 ·85		79	34 35 36	74
31 32 33 34 35	40° 42° 43° 44°	89 06 25 34	40 41 42 43	54	40 41 42	33 50 59		85 96 13	3	50 60 76 83
36 37 38 39	45° 46° 47° 43° 49°	37 46 57	45 47 48 48	·98 ·07 ·16 ·88	45 46 47	60 67 75 49	45 46 47 48	21 28 34	44 45 46 47	·83 ·88 ·93 ·72
40   41   42   43   44	50	80 63 42	50 51 52	·65 ·44 ·28 ·08	50	27 92 73		71	49 50 51 51	34
45 46 47 48	54° 55° 55°	15	53 54 55	·82 ·68 ·54 ·36	53 54 55	49	53	03	53° 53° 54° 55°	83 71 60
49 50		38		·21 ·09		80	56		56	-

TRUE PER CENT.

Indica- tion.	26 °	27°	28°	29 °	30°
51 52 53 54 55	59·28 60·17 61·07 61·92 62·77	59.00 59.90 60.80 61.66	58·71 59·62 60·52 61·39 62·26	58·43 59·35 60·25 61·13 62·01	58·15 59·07 59·97 60·86 61·75
56 57 58 59 60	63.67 64.57 65.49 66.42 67.31	63·41 64·32 65·24 66·17 67·07	63·15 64·06 65·00 65·93 66·84	62·89 63·81 64·75 65·68 66·60	62.63 63.56 64.51 65.44 66.36
61 62 63 64 65	68·24 69·20 70·11 71·05	68·00 68·96 69·88 70·83	67.77 68.73 69.65 70.60	67·53 68·49 69·42 70·38	67·30 68·26 69·19 70·15 71·12
66 67 68 69	72.01 72.97 73.97 74.86 75.74	71.79 72.75 73.75 74.64 75.53	72·54 73·52 74·42 75·31	71·34 72·32 73·30 74·20 75·10	72·10 73·08 73·98 74·89
70 71 72 73 74	76.66 77.59 78.52 79.46 80.39	76·45 77·38 78·32 79·25 80·19	76·24 77·18 78·11 79·05 79·98	76.03 76.97 77.91 78.84 79.78	75·82 76·76 77·70 78·64 79·57
75	81.35	81.13	80.93	79.78 80.73	79.57

### TRUE PER CENT.

Indica-	26°	27°	28°	29°	30°
76 77 78 79 80	83·22 84·18 85·11	82.08 83.03 83.98 84.92 85.86	81.88 82.83 83.79 84.72 85.68	81.69 82.64 83.59 84.53 85.49	81·49 82·45 83·40 84·34 85·30
81 82 83 84 85	87.01 87.95 88.91 89.83 90.72	86.82 87.76 88.72 89.65 90.54	86.63 87.58 88.54 89.46 90.37	86·44 87·39 88·35 89·28 90·19	86·25 87·20 88·16 89·10
86 87 88 89 90	91·64 92·54 93·42 94·34	91·47 92·37 93·25 94·17	91·29 92·19 93·08 94·00	91·12 92·91 92·02	90·94 91·85 92·74 93·66
91 92 93 94	95·20 96·04 96·94 97·85 98·67	95.04 95.88 96.79 97.69 98.53	94.87 95.72 96.63 97.54 98.38	94·71 95·56 96·48 97·38 98·24	94.54 95.40 96.32 97.23 98.09
95 96 97 98 99	99.49 100.27 101.04 101.91 102.76	99.35 100.13 100.91 101.79 102.65	99·20 99·98 100·79 101·66 102·53	99.06 99.84 100.66 101.54 102.42	98.92 99.70 100.53 101.42 102.30
100	103.63	103.25	103.40		103.18

TRUE PER CENT.

Indica- tion.	286	31	0	1 8 C 1 V	32	0	-320	33	0	44	34	Į. °	0	67	35	<b>5</b> °	
1 2 3	X507.00	2	·44 ·38	20000000	2	·51 ·42 ·42	00/00/00	2	58 47 46	20.00.00	2	·6	I	30,00 00	2	72	5
4 5	30 100 100	4 5	·40 ·42	OH 1881 DO	4 5	·43 ·45	000 CO D	4 5	46	001-001-00	4 5	.4	9	00 00 0x	4	.53	3
6 7 8 9	000000000000000000000000000000000000000	78	·53 ·65 ·75 ·86	200 200 200	7 8	·56 ·67 ·77 ·88	500 - CO - CO	78	79 79 89	100 CO 00	7	5.6 7.7 8.8 9.9	2	00 00 00 0	78	6.6. 7.7. 3.8.	5
10 11 12	- OX - 1341	10	·95	36 30	10	·96	1	10	·98	8 6	12	2.2	9	S S S S	II	2.20	5
13 14 15	O JONES	14	·47 ·67 ·87 ·18	10000	14	·47 ·66 ·85		14	·47 ·65 ·83		12	3·4 4·6 5·8	4	00000	I	3·4; 4·6; 5·7; 7·0	3
16 17 18	37576	18	.56		18	.52		18	·47 ·78	Copy Copy of	18	3.4	3	The state of	18	3.3	9
19 20	St. Carlon	22	·24 ·67 ·16	X (Prod)	22	·17	105,100	22	·09 ·49 ·93	The second	2:	2.4	0	Share we	2:	2.3	1
21 22 23	2000	27	.64	10	28	97		28	·39 ·82 ·12	01	20	5.6	7 5	A 190 00 10	20	5.5	8
24 25	1	-	.15			9.95			·43	10		0.2	•			0.3	- 1

TRUE PER CENT.

Indica- tion.	31	3	2°	33°	34°	35°
26 27 28 29 30	32·5 33·9 35·2 36·5 37·8	00 3 26 3 8 3	2·28 3·65 5·00 6·29 7·58	32.06 33.40 34.73 36.01 37.27	31.83 33.15 34.47 35.72 36.96	31.60 32.90 34.21 35.43 36.65
31 32 33 34 35	39.1 40.2 41.4 42.4 43.4	7 3 11 4 17 4	8·85 9·94 1·06 2·11 4·10	38·52 39·61 40·72 41·76 42·74	The second second	37·87 38·95 40·02 41·04 42·04
36 37 38 39 40	44.4 45.5 46.5 47.3 48.1	57 4 36 4	.4·12 .5·14 .6·21 .7·00 .7·83	43.77 44.77 45.86 46.64 47.48	1100	43.06 44.03 45.14 45.92 46.80
41 42 43 44 45	49.6 49.8 50.7 51.6 52.1	88 4 74 5 64 5	8.67 9.56 0.42 1.32 2.21	48·34 49·23 50·11 51·01 51·90	48·91 49·79 50·69	47.67 48.58 49.48 50.38 51.28
46 47 48 49 50	53°4°3 54°3 55°5 56°6	31 5 17 5 94 5	3·11 4·02 4·88 5·77 6·68	52·80 53·72 54·60 55·49 56·41	53.43 54.31 55.22	

TRUE PER CENT.

Indica- tion.	31	0	32	0	33	0	34	0	35	60
51 52 53 54 55	58 59 60	·88 ·80 ·71 ·60 ·50	58 59 60	·61 ·53 ·45 ·35 ·25	58 59 60	·33 ·26 ·20 ·99	57 58 59	·06 ·99 ·94 ·84 ·74	57 58 59	.79 .72 .68 .58
56 57 58 59	62 63 64 65	·39 ·32 ·27 ·21	62 63 64 64	·14 ·08 ·04 ·97	61 62 63 64	·90 ·85 ·80 ·74	61 62 63 64	·65 ·61 ·57 ·50	61 62 63 64	·41 ·37 ·33 ·27
60 61 62 63 64	67 68 68	·13 ·07 ·03 ·97 ·93	66 67 68	·84 ·81 ·75 ·71	66 67 68	·67 ·62 ·58 ·53 ·50	66 67 68	·44 ·39 ·36 ·31 ·28	66 67 68	·16 ·13 ·09 ·06
65 66 67 68	70 71 72 73	·90 ·88 ·86 ·77	71 72 73	·68 ·66 ·65 ·55	70 71 72 73	·47 ·44 ·43 ·34	71 72 73	·25 ·23 ·22 ·12	71 72 72	·03
69 70 71 72 73	75 76 77	·68 ·61 ·56 ·50 ·44	75 76 77	·47 ·40 ·35 ·30 ·24	75 76 77	·26 ·19 ·15 ·09 ·05	74 75 76	·05 ·98 ·94 ·89 ·85	74 75 76	·84 ·77 ·74 ·69 ·65
74 75	79	·38	79	.18	78	.99	78	·79 ·76	78	·60 ·56

TRUE PER CENT.

l. & .		Bolle P. L			
Indica- tion.	31°	32°	33°	34°	35°
-	87.00	0	90.01	90.77	90.40
76 77	81.30	82.06	80.91	80.71	80.52
78	83.21	83.02	82.83	82.64	82.45
79	84.15	83.96	83.78	83.59	83.40
80	82.11	84.92	84.74	84.22	84.36
81	86.07	85.88	85.70	85.21	85.33
82	87.01	86.83	86.64	86.46	86.27
83	87.98	87.80	87.61	87.43	87.25
84 85	89.83	88.74	89.48	89.30	89.12
				THE ROLL	
86	90.77	90.60	90.42	90.52	90.08
88	92.57	92.41	92.24	92.08	91.91
89	93.50	93.33	93.17	93.00	92.84
90	94.38	94.22	94.05	93.89	93.73
91	95.25	95.10	94.94	94.79	94.64
92		96.01	95.86	95.70	95.55
93		96.94	96.79	96.65	96.50
94 95	97.95	97.81	98.51	97.52	97.38
	THE PARTY	1575			
96 97	99.56	99.43	99.29	99.16	99.02
98		101.18	101.06	100.04	100.82
99	3	102.07	101.95	101.84	101.72
100	103.07	102.96	102.85	102.74	102.63
			1		

TRUE PER CENT.

Indica-		36°	37°	38°	39 °	40°
1 2 3 4 5 6	100000	1.75 2.56 3.54 4.53 5.54 6.65		3·56 4·56 5·56	2.60 3.57 4.58 5.57	1.85 2.61 3.58 4.59 5.58
7 8 9 10 11	OC 05 00 00 00 00	7.75 8.84 9.93 11.00	7.76 8.84 9.92 11.00		7.77 8.84 9.91	7.77 8.84 9.91 10.99
12 13 14 15 16	0/ 00/	13.45 14.60 15.76 17.02	13.42 14.57 15.72 16.98	13.40 14.55 15.69 16.93	14·52 15·65 16·89	13·35 14·49 15·62 16·84
17 18 19 20 21	かなる	19.60 20.86 22.20 23.58 24.98	19·52 20·77 22·09 23·46 24·83	19.45 20.67 21.99 23.33 24.69	20·58 21·88 23·21 24·54	19·30 20·49 21·77 23·09 24·39
22 23 24 25	01	26·35 27·60 28·86 30·11	26·19 27·42 28.66 29·90	26·02 27·23 28·46 29·68	28.26	25.69 26.87 28.06 29.25

TRUE PER CENT.

Indica- tion.	36 °	37°	38°	39 °	40°
26	31·37	31·14	30.91	30.68	30·45
27	32·65	32·41	32.16	31.92	31·67
28	33·94	33·67	33.41	33.14	32·87
29	35·15	34·86	34.58	34.29	34·01
30	36·35	36·06	35.76	35.47	35·17
31	37.56	37.24	36.93	36.61	36·30
32	38.63	38.31	37.98	37.66	37·34
33	39.69	39.37	39.04	38.72	38·39
34	40.71	40.39	40.06	39.74	39·41
35	41.71	41.38	41.05	40.72	40·39
36	42·73	42·39	42.06	41.72	41·39
37	43·71	43·38	43.06	42.73	42·41
38	44·80	44·46	44.12	43.78	43·44
39	45·60	45·28	44.96	44.64	44·3 <sup>2</sup>
40	46·48	46·17	45.85	45.54	45·22
41	47°37	47.06	46·76	46·45	46·15
42	48°28	47.98	47·68	47·38	47·08
43	49°18	48.88	48·59	48·29	47·99
44	50°09	49.79	49·50	49·20	48·91
45	51°00	50.71	50·43	50·14	49·86
46	51.92	51.65	51·37	51·10	50·82
47	52.87	52.60	52·32	52·05	51·78
48	53.76	53.50	53·23	52·97	52·70
49	54.68	54.41	54·15	53·88	53·62
50	55.61	55.35	55·08	54·82	54·56

TRUE PER CENT.

Indica- tion.	36°	37°	38°	39°	40°
51 52 53 54 55	56·54 57·47 58·43 59·34 60·25	56·28 57·22 58·18 59·10 60·01	56.03 56.98 57.93 58.85	55.77 56.73 57.68 58.61	55.52 56.48 57.43 58.37 59.29
56	61·18	60·95	60·72	60·49	60·26
57	62·14	61·91	61·68	61·45	61·22
58	63·10	62·87	62·64	62·41	62·18
59	64·05	63·82	63·60	63·37	63·15
60	64·99	64·77	64·54	64·32	64·10
61	65.94	65·72	65·50	65·28	65.06
62	66.91	66·69	66·48	66·26	66.04
63	67.87	67·66	67·44	67·23	67.01
64	68.85	68·63	68·42	68·20	67.99
65	69.82	69·61	69·40	69·19	68.98
66	70·80	70·59	70·37	70·16	69.95
67	71·79	71·58	71·36	71·15	70.94
68	72·70	72·50	72·29	72·09	71.88
69	73·64	73·43	73·23	73·02	72.82
70	74·57	74·37	74·17	73·97	73.77
71 72 73 74 75	75.54 76.49 77.46 78.41 79.37	75.34 76.29 77.26 78.22 79.18	75.14 76.09 77.07 78.03	74·94 75·89 76·87 77·84 78·81	74.74 75.69 76.68 77.65 78.62

TRUE PER CENT.

Indica- tion.	36	3	70	38°	39°	40°
76 77 78 79 80	80·3 81·2 82·2 83·2 84·1	29 81 26 82 22 83	00	79.96 80.92 81.89 82.95 83.82	79.77 80.74 81.71 82.77 83.64	79·58 80·55 81·52 82·49 83·46
81 82 83 84 85	85·1 86·0 87·0 88·0 88·9	9 85 9 86 91 87	.97 .91 .89 .84 .78	84·78 85·74 86·72 87·66 88·61	84·60 85·56 86·54 87·49 88·44	84·42 85·38 86·36 87·31 88·27
86 87 88 89 90	89.9 90.8 91.7 92.6 93.5	1 90 4 91 8 92	.74 .65 .58 .51	89.57 90.48 91.41 92.35 93.26	89·40 90·32 91·25 92·18 93·11	89·23 90·15 91·08 92·02 92·95
91 92 93 94 95	94.4 95.4 96.3 97.2 98.0	0 95 6 96 4 97	·33 ·25 ·21 ·10	94·18 95·10 96·07 96·95 97·80	94.02, 94.95 95.92 96.81 97.66	93.87 94.80 95.78 96.67 97.52
96 97 98 99 100	98·9 99·8 100·7 101·6	0 99 0 100 1 101	.50	98.65 99.55 100.47 101.38 102.30	98·53 99·42 100·35 101·27 102·19	98.41 99.30 100.23 101.16 102.08

TRUE PER CENT.

Indica- tion.	41°	42°	43°	44 °	45°
$\begin{bmatrix} 1\\2\\3 \end{bmatrix}$	1.85 2.61 3.58	1.85 2.61 3.58	1.85 2.61 3.57	1.85 2.61 3.57	1·85 2·61 3·57
4 5 6	4·58 5·57 6·67	4·58 5·57	4·57 5·56 6·66	4·57 5·56 6·65	4·56 5·55 6·64
7 8 9	7·76 8·82 9·89	7:75 8:80 9:86	7:73 8:79 9:84	7·72 8·77 9·81	7.71 8.75 9.79
10 11 12	12.18	10.93	10.91	12.08	12.04
13 14 15	13·31 14·44 15·56 16·77	13·27 14·39 15·51 16·70	13.22 14.34 15.45 16.62	13·18 14·29 15·40 16·55	13.14 14.24 15.34 16.48
16 17 18	18.01	17.92	17.84	17.75	17.67
19 20	20·38 21·65 22·95	20.53	20·17 21·40 22·66	21.28	19.95
21 22 23	24·23 25·51 26·68	24.07 25.33 26.49	23.90	23.74 24.97 26.12	23·58 24·79 25·93
$\begin{bmatrix} 24 \\ 25 \end{bmatrix}$	27.86	27.66	27.45	27.25	27.05

TRUE PER CENT.

Indica- tion.	41	0	42	0	43	0	44	0	45	0
26 27	1	·22 ·42	the same	.99		·76		·53 ·69	29	30
28	. 32	.61	32	.35	32	.09	31	.83	31	57
29 30		.74		·47		.32		·93		·66
31		.01	35	.72	35	.42		.13	34	.84
32 33		.04		74		45		15	35	·85
34		.10		79		·48 ·49		.19		.88
35	40	.08	39	.78	39	47	-	.17	38	.86
36		.09		79		.48	40	.18		.88
37 38		.10		·79 ·83		·49		.22		·87
39	44	.02	43	.72	43	.42	43	· I 2	42	.82
40	Jan.	1.94	4	65		.37		.08		.80
41 42		·86		5.52		.29		.01		·72
43	47	7.71	47	1.44	47	.16	46	6.89	46	.61
44 45		3·64 9·60		3.37		.07		·84 3·80	47	·57
46	100	o·56	T.V.	30	1	0.04	1	78		.52
47	-	1.25	-	1.26	51	.01	50	75	50	.49
48	1000	2.45	1	2.19		:94	51	.68	51	43
49   50	1	3·37 4·31		1.07		·87		3.58		·37
1	34		10						1 3	

TRUE PER CENT.

Indica-	41°	42°	43°	44 °	45°
51	55·28	55.04	54·80	54·56	54·32
52	56·24	56.00	55·77	55·53	55·29
53	57·19	56.95	56·72	56·48	56·24
54	58·13	57.90	57·66	57·43	57·19
55	59·06	58.84	58·61	58·39	58·16
56	60.04	59·82	59·59	59°37	59·15
57	61.00	60·77	60·55	60°32	60·10
58	61.96	61·74	61·52	61°30	61·08
59	62.93	62·71	62·49	62°27	62·05
60	63.88	63·66	63·45	63°23	63·01
61	64.85	64.64	64·42	64·21	64·00
62	65.83	65.62	65·41	65·20	64·99
63	66.80	66.60	66·39	66·19	65·98
64	67.78	67.58	67·37	67·17	66·96
65	68.77	68.56	68·36	68·15	67·94
66	69.74	69·53	69·33	69·12	68.91
67	70.73	70·52	70·32	70·11	69.90
68	71.68	71·48	71·27	71·07	70.87
69	72.62	72·43	72·23	72·04	71.84
70	73.58	73·38	73·19	72·99	72.80
71	74·54	77.28	74·15	73.96	73·76
72	75·50		75·11	74.92	74·73
73	76·49		76·12	75.93	75·74
74	77·46		77·09	76.91	76·72
75	78·43		78·06	77.87	77·68

# 41°-45°

TRUE PER CENT.

Indica- tion.	41°	42°	43°	44°	45°
76 77 78 79 80 81 82 83	79.40 80.37 81.34 82.31 83.28 84.24 85.21	79.21. 80.18 81.16 82.13 83.10 84.07 85.03 86.01	79.03 80.00 80.98 81.94 82.92 83.89 84.86 85.84	78·84 79·81 80·80 81·76 82·74 83·72 84·68 85·66	78.66 79.63 80.62 81.58 82.56 83.54 84.51 85.49
84 85 86 87 88 89 90	87·14 88·10 89·06 89·99 90·92 91·87 92·80	86·97 87·93 88·89 89·83 90·76 91·71 92·65	86·80 87·77 88·73 89·66 90·60 91·56 92·49	86.63 87.60 88.56 89.50 90.44 91.40 92.34	86·46 87·43 88·39 89·34 90·28 91·25 92·19
91 92 93 94 95 96	93·7² 94·65 95·64 96·53 97·38	93.57 94.52 95.50 96.39 97.25 98.16	93·4 <sup>2</sup> 94·37 95·36 96·25 97·11	93·27 94·23 95·22 96·11 96·98	93·12 94·09 95·08 95·97 96·84 97·78 98·72
97 98 99 100	101.08 101.02 101.02	99.07 100.00 100.94 101.87	98.95 99.89 100.83	98·84 99·77 100·72 101·66	99.66

TRUE PER CENT.

Indica- tion.	46°	47°	48°	49°	50°
1	1.80	1.74	1.69	1.63	1.58
2	2.58	2.55	2.53	2.50	2.47
3	3.55	3.25	3.20	3.47	3.45
4	4:54	4.21	4.49	4.46	4.44
5	5.23	2.21	5.48	5.46	5.44
6	6.61	6.58	6.55	6.52	6.49
7	7.68	7.64	7.61	7:57	7.54
8	8.72	8.68	8.65	8.61	8.58
9	9.75	9.72	9.68	9.65	9.61
10	10.91	10.77	10.45	2 Act	8 198
11	11.99	11.93	11.88	11.82	11.77
12	13.08	13.01	12.95	12.88	12.82
13	14.17	14.10	14.02	13.95	13.88
14	15.26	15.18	15.11	15.03	14.95
15	10.40	10.31	10.23	0 0 7	0 110
16	17.57	17.47	17:37	17.27	17.17
17	18.70	18.59	18.49	18.38	18.27
18	19.83	19.71	19.60	19.48	19.36
19 20	21.02	20.89	20.75	21.76	20.48
	4 10	6 1 EB	12 10000	O. HESS	0-480
21	23.42	23.25	23.09	22.92	22.76
22	24.61	24.42	24.24	24.05	23.87
23 24	25.73	25.53	25.34	25.14	24.94
25	27.96	27.75	27.53	27.32	27.11
20	-/ 90	-//3	-/ 33	-/ 3-	

## 46°-50°

TRUE PER CENT.

Indica- tion.	46°	47°	48°	49 °	50°
26	29·17	28.84	28.61	28·38	28·15
27	30·20	29.96	29.71	29·47	29·23
28	31·32	31.07	30.83	30·58	30·33
29	32·41	32.15	31.90	31·64	31·39
30	33·49	33.22	32.96	32·69	32·42
31	34·55	34·26	33.97	33.68	33.49
32	35·58	35·30	35.03	34.75	34.48
33	36·60	36·32	36.05	35.77	35.49
34	37·60	37·33	37.05	36.78	36.50
35	38·59	38·31	38.04	37.76	37.49
36	39·60	39·32	39.05	38·77	38·49
37	40·59	40·32	40.04	39·77	39·49
38	41·64	41·36	41.07	40·79	40·51
39	42·55	42·28	42.02	41·75	41·48
40	43·53	43·26	42.98	42·71	42·44
41	44·45	44·19	43.92	43.66	43·39
42	45·41	45·15	44.88	44.62	44·36
43	46·35	46·09	45.84	45.58	45·32
44	47·32	47·07	46.82	46.57	46·32
45	48·29	48·04	47.80	47.55	47·30
46	49·27	49.02	48:78	48·53	48·28
47	50·24	50.00	49:75	49·51	49·26
48	51·19	50.95	50:70	50·46	50·22
49	52·13	51.89	51:66	51·42	51·18
50	53·10	52.87	52:63	52·40	52·17

TRUE PER CENT.

Indica- tion.	46°	47°	48°	49°	50°
51 52 53 54 55 56 57 58	54.09 55.06 56.01 56.97 57.94 58.93 59.89 60.87	55.78 56.75 57.72 58.71 59.68 60.66	53.63 54.59 55.56 56.54 57.51 58.49 59.46 60.44	53.40 54.36 55.33 56.32 57.29 58.27 59.25 60.23	53·17 54·13 55·10 56·10 57·07 58·05 59·04 60·02
59 60 61 62 63 64 65	61·84 62·80 63·79 64·79 65·78 66·76 67·74	61.63 62.60 63.59 64.58 65.57 66.56 67.54	61·43 62·39 63·38 64·38 65·37 66·35 67·34	61·22 62·19 63·18 64·17 65·16 66·15 67·14	61·01 61·98 62·97 63·97 64·96 65·95 66·94
66 67 68 69 70	68·71 69·70 70·67 71·65 72·61	68·52 69·50 70·47 71·45 72·42 73·38	68·32 69·30 70·28 71·26 72·22 73·18	68·13 69·10 70·08 71·06 72·03 72·99	67.93 68.90 69.88 70.87 71.84 72.80
72 73 74 75	74·54 75·55 76·53 77·50	74·36 75·36 76·35 77·32	74·17 75·18 76·16 77·13	73.99 74.99 75.98 76.95	73·80 74·80 75·79 76·77

## 46°-50°

TRUE PER CENT.

Indica- tion.	46°	47°	48°	49°	50°
76	78·48	78·30	78·11	77.93	77.75
77	79·45	79·27	79·10	78.92	78.74
78	80·44	80·26	80·09	79.91	79.73
79	81·41	81·23	81·06	80.88	80.71
80	82·38	82·21	82·03	81.86	81.68
81	83·37	83·19	83.02	82.84	82.67
82	84·34	84·17	83.99	83.82	83.65
83	85·32	85·15	84.98	84.81	84.64
84	86·29	86·13	85.96	85.80	85.63
85	87·26	87·10	86.93	86.77	86.60
86 87 88 89 90	88·23 89·34 90·12 91·10	88·07 89·18 89·96 90·94 91·89	87·91 89·02 89·81 90·79 91·74	87.75 88.87 89.65 90.63 91.59	87.59 88.55 89.49 90.48 91.44
91	92·97	92·83	92.68	92·54	92·39
92	93·95	93·81	93.66	93·52	93·38
93	94·94	94·80	94.66	94·52	94·38
94	95·83	95·69	95.55	95·41	95·27
95	96·72	96·59	96.47	96·34	96·22
96 97 .98 99 100	-	97.54 98.48 99.44 100.40	97.41 98.37 99.33 100.29 101.26	97·29 98·25 99·21 100·18	97·17 98·13 99·10 100·07 101·04

TRUE PER CENT.

Indica- tion.	51	0	52	2 °	5	3°	5	4°	5	5°
1 2 3	2	·52 ·43 ·41	3	·46 ·39 ·37		1·40 2·34 3·33	8	1·34 2·30 3·29	7.9	1·28 2·26 3·25
5	5	·40 ·40	8 5	.36	8	4·3 <sup>2</sup>	8	4.58	100 N	4·24 5·25
6 7 8	7	·45 ·50 ·53	7	·41 ·45 ·48	8	6·37 7·41 8·42	8 ;	6·33 7·36 3·37	00 00	6·29 7·32 8·32
9 10	10	·56	10	.50	186	9°45 0°46	810	9.39	I	9.34
11 12 13	12	·70 ·75 ·80	I 2	·63 ·68	81	1.55 2.60 3.64	1 2	1.48 2.53 3.56	81	1·41 2·46 3·48
14 15	14	·86 ·96	14	77.86	ool.	4·69 5·77	1215	·60 ·67	191 191	4·5·1 5·57
16 17 18	18	·06	18	.03 .10	I	6·84 7·91 8·96	17	73	EQI	6.62 7.67 8.70
19 20	20 21	·34 ·45	21	·20 ·29	2	0.05	20	.98	I 2	9.77 0.82
21 22 23	23	·58 ·69	23	·41 ·50 ·56	2	2·23 3·32 4·36	23		2	1·88 2·95 3·98
24 25	25	.83	25	·63 ·68	2	5·42 6·47	25	.22	2	5·02 6·04

#### 51°-55°

TRUE PER CENT.

Indica- tion.	51°	52°	53°	54 °	55°
26	27.93	27.71	27·50	27·28	27.06
27	29.00	28.78	28·55	28·33	28.10
28	30.10	29.86	29·63	29·39	29.16
29	31.14	30.89	30·64	30·39	30.14
30	32.17	31.92	31·66	31·41	31.16
31	33·23	32.97	32·72	32·46	32·20
32	34·22	33.96	33·69	33·43	33·17
33	35·23	34.97	34·72	34·46	34·20
34	36·24	35.98	35·71	35·45	35·19
35	37·23	36.97	36·71	36·45	36·19
36	38·23	37.98	37.72	37:47	37.21
37	39·23	38.97	38.71	38:45	38.19
38	40·25	40.00	39.74	39:49	39.23
39	41·22	40.96	40.70	40:44	40.18
40	42·19	41.94	41.68	41:43	41.18
41	43·14	42·89	42.64	42·39	42·14
42	44·12	43·87	43.63	43·38	43·14
43	45·08	44·84	44.60	44·36	44·12
44	46·08	45·84	45.61	45·37	45·13
45	47·06	46·83	46.59	46·36	46·12
46	48·04	47.81	47.57	47.34	47·10
47	49·03	48.79	48.56	48.32	48·09
48	49·99	49.76	49.52	49.29	49·06
49	50·96	50.74	50.51	50.29	50·07
50	51·95	51.73	51.50	51.28	51·06

TRUE PER CENT.

Indica- tion.	51	0	52	0	53	0	54	0	55°	Hodbot. II
51 52 53 54 55	52° 53° 54° 55° 56°	91 89 89	52· 53· 54· 55· 56·	69 67 67	53 54 55	·50 ·47 ·46 ·46 ·46	53 54 55	· 28 · 25 · 24 · 24 · 23	52·0 53·0 54·0 55·0 56·0	3
56 57 58 59 60	57° 58° 59° 60°	83 81 81	57° 58° 59° 60° 61°	62 61 60	58 59 60	·43 ·42 ·40 ·40 ·37	58 59 60	·22 ·21 ·20 ·19 ·17	57.0 58.0 58.9 59.9 60.9	9
61 62 63 64 65	62· 63· 64· 65· 66·	77 76 75	64	57 56	63 64 65	·38 ·37 ·36 ·36 ·35	63 64 65	·18 ·17 ·16 ·16 ·15	61·9 62·9 63·9 64·9	7.6
66 67 68 69 70	67. 68. 69. 70. 71.	71 69 68	69 70	·53 ·52 ·50 ·49 ·46	68 69 70	·33 ·32 ·31 ·31 ·27	68 69 70	·13 ·13 ·12 ·08	66·9 67·9 68·9 69·9	94
71 72 73 74 75	72. 73. 74. 75. 76.	62	73 74 75	·44 ·44 ·43 ·41	73 74 75	·26 ·25 ·25 ·24 ·23	73 74 75	·08 ·07 ·07 ·06 ·05	71.9 72.8 73.8 74.8 75.8	39

## 51°-55°

Indica- tion.	51	0	52	0	53	0	54	0	55	0
76 77 78	78	57 56 56	77: 78: 79:	39	77° 78°	21	77· 78· 79·	04	76· 77· 78·	86
79 80	81.	54 51	80.	36 34	80.	18	80.	10	79° 80°	84 84
81 82 83		50 48 48	82 · 83 · 84 ·	32 31	82 83 84	15	82. 82. 83.	99	81. 82. 83.	82
84 85 86	86	47	85	28	86	14	84· 85·	95	84· 85·	79
87 88 89	189	39 34	2 -	23	88	08	86. 87. 88.	92 90	87. 88.	76 75
90 91	91	33	90	14	91	97	90. 80.	85	90.	70
92 93 94	94	·24 ·24 ·14	93 94 95	10	93	97 97 89	92° 93° 94°	83	93° 94°	69
95	96	.10	96	97	95 96	·85	95	72	95	58
97 98 99	98	·02 ·99 ·96	98	·90 ·88 ·85	98 99	79 76 75	99	65	97 98 99	54 53
100	100	.94	100	.83	100	73	100	02	100.	52

TRUE PER CENT.

Indica- tion.	56°	57°	58°	59°	60°
1 2 3	1.23	2.16	1.11	1.06	1.00
5 4 5	3·20 4·10 5·20	5.12	3.10	3.05 4.05 5.05	2.00 4.00
6 7 8	6·23 7·26 8·26	7.19	6·12 7·13 8·13	6.06 7.06 8.06	6·00 7·00 8·00
9 10 11	10.5	9.20	9.14	9.07 10.07	10.00
12 13 14	13.38	12.28	13.19	12.09 13.10 14.10	12.00
15 16	15.40	15.34	15.23	15.11	15.00
17 18 19	19.6	18.42	19.31	19.13	19.00
20 21 22	20.60	21.53	50.33	20.16	21.00
23 24 25	23.7 24.8 25.8	23.59	23·39 24·41 25·42	23.20	23.00

TRUE PER CENT.

Indica- tion.	56°	57°	58°	59°	60°
26 27 28 29 30	26.85 27.88 28.93 29.91 30.93	26.64 27.66 28.70 29.68 30.70	26·42 27·44 28·46 29·46 30·46	26·21 27·22 28·23 29·23 30·23	26·00 27·00 28·00 29·00 30·00
31 32 33 34 35	31·96 32·94 33·96 34·95 35·95	31·72 32·70 33·72 34·71 35·71	31·48 32·47 33·48 34·48 35·48	31·24 32·23 33·24 34·24 35·24	31·00 32·00 34·00 34·00
36 37 38 39 40	36·97 37·95 38·98 39·94 40·94	36·73 37·71 38·74 39·71 40·71	36·48 37·48 38·49 39·47 40·47		36·00 37·00 38·00 40·00
41 42 43 44 45	41.91 42.91 43.90 44.90	41.68 42.68 43.67 44.68 45.67	41·46 42·46 43·45 44·45 45·45	42.23	41.00 42.00 43.00 44.00
46 47 48 49 50		46.66 47.65 48.64 49.64 50.64	46·44 47·44 48·42 49·43 50·42	47.22 48.21 49.21	48.00

TRUE PER CENT.

Indica- tion.	56°	57°	58°	59°	60°
51 52 53 54 55 56 57 58 59	51.85 52.82 53.82 54.82 55.82 56.81 57.80 58.79 59.79	51.64 52.62 53.62 54.62 55.61 56.61 57.60 58.59 59.59	51.42 52.41 53.41 54.41 55.41 56.40 57.40 58.40 59.40	51·21 52·21 53·21 54·21 55·20 56·20 57·20 58·20 59·20	51.00 52.00 53.00 54.00 55.00 56.00 57.00 58.00
60 61 62 63 64 65	60·78 61·78 62·78 63·77 64·77 65·76	60·58 61·59 62·58 63·58 64·58 65·57	60·39 61·39 62·39 63·38 64·38 65·38	60·19 61·20 62·19 63·19 64·19 65·19	60·00 61·00 62·00 63·00 64·00 65·00
66 67 68 69 70 71	66·74 67·75 68·74 69·74 70·71	66·56 67·56 68·56 69·56 70·53	66·37 67·38 68·39 69·39 70·36	66·19 67·19 68·19 69·19 70·18	66.00 67.00 68.00 69.00 70.00
72 73 74 75	72.71 73.71 74.70 75.70	72.53 73.53 74.53 75.52	72·36 73·36 74·35 75·35	72.18	72.00 73.00 74.00 75.00

# 56°-60°

TRUE PER CENT.

Indica- tion.	56°	57°	58°	59°	60°
76	76·69	76·52	76·34	76·17	76.00
77	77·69	77·52	77·34	77·17	77.00
78	78·69	78·52	78·34	78·17	78.00
79	79·67	79·50	79·34	79·17	79.00
80	80·67	80·50	80·34	80·17	80.00
81	81.66	81·50	81·33	81·17	81.00
82	82.66	82·49	82·33	82·16	82.00
83	83.66	83·49	83·33	83·16	83.00
84	84.65	84·49	84·32	84·16	84.00
85	85.63	85·47	85·32	85·16	85.00
86	86.64	86·48	86·32	86·16	86.00
87	87.61	87·46	87·30	87·15	87.00
88	88.60	88·45	88·30	88·15	88.00
89	89.60	89·45	89·30	89·15	89.00
90	90.56	90·42	90·28	90·14	90.00
91 92 93 94 95	91·55 92·56 93·55 94·50 95·48	91·41 92·42 93·41 94·38 95·36	91·28 92·28 93·28 94·25 95·24	91·14 92·14 94·13 95·14	91.00 92.00 93.00 94.00 95.00
96 97 98 99 100	96·46 97·45 98·43 99·42 100·42	96·35 97·34 98·32 99·32 100·31	96·23 97·22 98·22 99·21 100·21	96·12 99·11 99·11	96.00 97.00 98.00 99.00 100.00

TRUE PER CENT.

Indica- tion.	6]	L°	62°	63 °	64 °	65°
1 2 3 4	I 2	.95 .95 .95	0.91 1.90 2.89 3.89	0.86 1.84 2.84 3.83	0.82 1.79 2.78 3.78	0·77 1·74 2·73 3·72
5 6 7	18 4	93	4·87 5·86 6·86	4·81 5·80 6·78	4·74 5·73 6·71	4·68 5·66 6·64
8 9 10	7 8	.93 .92	7·85 8·85 9·82	7·78 8·77 9·73	7:70 8:70 9:64	7.63 8.62 9.55
11 12 13	811	.90	10.81 11.80 12.79	10.71	10.62 11.61 12.58	10.52
14 15 16	14	·89 ·88	13.78	13.66 14.63 15.61	13.55	13:44
17 18 19 20	17	·86 ·85 ·84 ·83	16·72 17·71 18·68 19·66	16·59 17·56 18·53	16.45 17.42 18.37	16·31 17·27 18·21 19·16
21 22 23	20 2I	·82 ·81 ·80	20.64 21.62 22.61	20·47 21·44 22·41	20.29	20·11 21·06 22·02
24 25	23	.80	23.60	23.40	23.50	23.00

TRUE PER CENT.

Indica- tion.	61	0	62	0	63	0	64	0	65	0
26 27 28 29 30	26	79 79 79 78	26 27 28	·59 ·57 ·56 ·56	26 27 28	·38 ·36 ·36 ·35 ·33	26 27 28	·18 ·14 ·14 ·13 ·11	25 26 27	.97 .93 .93 .91
31 32 33 34 35	31	78	32 33	57 55 56 56 56	3 I 3 2	35 33 34 34 34	31 32 33	14 10 12 12	30 31 32	·92 .88 ·90 ·90 ·89
36 37 38 39 40	35 36 37 38	78 77 78 77	36 37 38	56 55 55 55	36 37 38	34 32 33 32 36	36 37 38	12 10 10 10	34 35 36 37	·90 ·87 ·88 ·87 ·93
41 42 43 44 45	40 41 42 43	78 79 79 78 78	40 41 42 43		41 42 43	·35 ·36 ·36 ·36 ·36	41 42 43	·14 ·14 ·15 ·15	40 41 42	·92 ·93 ·93 ·94 ·94
46 47 48 49 50	45 46 47 48	.79 .79 .79 .79 .79	45 46 47 48	·58 ·59 ·59 ·59	45 46 47 48	·37 ·38 ·38 ·38 ·38 ·38	46 47 48	·16 ·18 ·18	45 46 47	.95 .97 .97 .97

TRUE PER CENT.

52         51·80         51·60         51·41         51·21         5           53         52·80         52·60         52·41         52·21         5           54         53·80         53·61         53·41         53·22         5           55         54·80         54·61         54·41         54·22         5           56         55·81         55·61         55·42         55·22         5           57         56·81         56·61         56·42         56·23         5           58         57·81         57·62         57·42         57·23         5           59         58·81         58·62         58·54         58·24         5           60         59·81         59·62         59·43         59·24         5           61         60·81         60·62         60·43         60·24         6           62         61·81         61·62         61·44         61·25         6           63         62·81         62·62         62·44         62·25         6           64         63·81         63·63         63·44         63·26         6	5°
56 55.81 55.61 55.42 55.22 5 57 56.81 56.61 56.42 56.23 55 58 57.81 57.62 57.42 57.23 5 59 58.81 58.62 58.54 58.24 55 60 59.81 59.62 59.43 59.24 59 61 60.81 60.62 60.43 60.24 66 62 61.81 61.62 61.44 61.25 66 63 62.81 62.62 62.44 62.25 66 64 63.81 63.63 63.44 63.26 66	0.02 1.01 2.01 3.02 4.02
61 60·81 60·62 60·43 60·24 66 62 61·81 61·62 61·44 61·25 66 63 62·81 62·62 62·44 62·25 62 64 63·81 63·63 63·44 63·26 63	5.03 6.04 7.04 8.05
	0.05 1.06 2.06
66 65.82 65.63 65.45 65.26 66 67 66.82 66.63 66.45 66.26 66 68 67.82 67.63 67.45 67.26 67 69 68.82 68.64 68.47 68.29 68	4·08 5·08 5·08 7·08
71 70·82 70·65 70·47 70·30 70 72 71·82 71·65 71·47 71·30 71 78 72·83 72·65 72·48 72·30 72	0.12

# 61°-65°

Indica- tion.	61°	62°	63°	64°	65°
76 77 78 79 80	75.83 76.83 77.84 78.84 79.84	75.66 76.66 77.67 78.67 79.67	75.50 76.50 77.51 78.51	75.33 76.33 77.34 78.34 79.34	75·16 76·16 77·18 78·18 79·18
81	80·84	80.68	80·52	80·36	80·20
82	81·84	81.68	81·52	81·36	81·20
83	82·84	82.68	82·53	82·37	82·21
84	83·84	83.69	83·53	83·38	83·22
85	84·84	84.69	84·53	84·38	84·22
86	85.85	85.70	85·56	85.41	85·26
87	86.85	86.71	86·56	86.42	86·27
88	87.85	87.71	87·56	87.42	87·27
89	88.86	88.72	88·57	88.43	88·29
90	89.86	89.73	89·59	89.46	89·32
91	90·86	90.73	90·59	90·46	90·32
92	91·86	91.72	91·59	91·45	91·31
93	92·88	92.75	92·63	92·50	92·38
94	93·88	93.76	93·64	93·52	93·40
95	94·88	94.77	94·65	94·54	94·42
96 97 98 99 100	95·89 96·89 98·90 99·90	95.78 96.78 97.79 98.80	95.66 96.68 97.68 98.69	95.55 96.57 97.58 98.59	95.44 96.46 97.47 98.49 99.51

TRUE PER CENT.

Indica- tion.	66°	67°	68°	69°	70°
1 2 3 4	0.74 1.69 2.68 3.66	0·71 1·65 2·62 3·60	0.67 1.60 2.57 3.54	0.64 1.56 2.51 3.48	
5 6 7 8 9	4·62 5·59 6·56 7·55 8·53	4·55 5·51 6·49 7·47 8·45	4·49 5·44 6·41 7·39 8·36	4·4² 5·36 6·34 7·31 8·28	4·36 5·29 6·26 7·23 8·19
10 11 12 13 14	9.43 10.42 11.40 12.36 13.32	9°34 10°32 11°30 12°25 13°20	9.25 10.23 11.19 12.14 13.07	9·16 10·13 11·09 12·03	9.07 10.03 10.98 11.92 12.83
15 16 17 18	14·25 15·22 16·17 17·12	14·13 15·08 16·03 16·97	14.00 14.95 15.88 16.83	13·88 14·81 15·74 16·68	13.75 14.68 15.61 16.53
19 20 21 22 23	18.05 18.99 19.94 20.87 21.83	17.90 18.83 19.76 20.69 21.64	17.74 18.66 19.59 20.50 21.46	17.59 18.50 19.41 20.32	17.43 18.33 19.24 20.13 21.08
24 24 25	53.81	22.63	23.43	21·27 22·26 23·24	22.07

53

E 2

## 66°-70°

TRUE PER CENT.

Indica- tion.	66°	67°	68°	69°	70°
26	24.77	24.57	24·38	24·18	23.98
27	25.73	25.54	25·34	25·15	24.95
28	26.73	26.53	26·33	26·13	25.93
29	27.71	27.50	27·30	27·09	26.89
30	28.69	28.49	28·28	28·08	27.88
31 32 33 34 35	29.71 30.68 31.69 32.69 33.69	29·50 30·47 31·49 32·48 33·48	29·30 30·27 31·28 32·28 33·28	29.09 30.06 31.08 32.07	28.88 29.86 30.87 31.86 32.87
36	34.69	34·49	34·28	34.08	33.87
37	35.66	35·46	35·25	35.05	34.84
38	36.67	36·46	36·24	36.03	35.82
39	37.67	37·46	37·26	37.05	36.85
40	38.73	38·52	38·32	38.11	37.91
41	39.72	39.52	39·31	39.11	38.91
42	40.73	40.53	40·32	40.12	39.92
43	41.73	41.52	41·32	41.11	40.91
44	42.74	42.53	42·33	42.12	41.92
45	43.74	43.54	43·34	43.14	42.94
46	44.75	44.55	44·37		43.97
47	45.77	45.57	45·38		44.98
48	46.77	46.58	46·38		45.99
49	47.77	47.57	47·38		46.98
50	48.78	48.59	48·40		48.02

TRUE PER CENT.

Indica- tion.	66°	67°	68°	69 °	70°
51 52 53 54 55	49.83 50.82 51.82 52.83 53.83	49.64 50.63 51.63 52.64 53.64	49°44 50°43 51°44 52°44 53°45	49.25 50.24 51.25 52.25 53.26	49.06 50.05 51.06 52.06 53.07
56 57 58 59 60	54·84 55·85 56·85 57·87 58·87	54.64 55.66 56.67 57.68 58.69	54·46 55·48 56·48 57·50 58·50	54.28	54·09 55·10 56·11 57·13 58·14
61 62 63 64 65	59.87 60.87 61.88 62.89 63.90	59.68 60.69 61.69 62.71 63.72	59·50 60·50 61·51 62·53 63·55	59·31 60·32 61·32	59:13 60:13 61:14 62:17 63:19
66 67 68 69 70	64·90 65·90 66·91	64·73 65·72 66·74 67·76 68·77	64·55 65·55 66·56 67·59 68·59	64·38 65·37 66·39 67·41	64·20 65·19 66·22 67·24 68·25
71 72 73 74 75	69.95 70.95 71.96 72.97	69·77 70·77 71·79 72·80	69.60 70.60 71.62 72.63 73.64	69·42 70·42 71·45 72·46	69.25

#### 66°—70°

TRUE PER CENT.

Indica- tion.	66	0	67	00	68	0	69	0	70°
76 77 78 79	76 77 78	99	76	·83 ·85 ·85	75 76	66 69 69	75° 76° 77°	49 50 52 52	74·3 <sup>2</sup> 75·34 76·36 77·36
80 81 82 83 84	80 81 82 83	·02 ·04 ·04 ·06 ·07	79 80 81 82	·86 ·88 ·89 ·90	79 80 81 82	7° 72 73 75 76	79 80 81 82	54 56 58 59 60	78·38 79·40 80·42 81·44 82·45
85 86 87 88 89	85 86 87	·07 ·11 ·12 ·13 ·15	84 85 86	·92 ·96 ·98 ·99 ·02	84 85 86	·77 ·82 ·83 ·84 ·88	84 85 86	·62 ·67 ·69 ·70 ·75	83·47 84·52 85·54 86·56 87·61
90 91 92 93	89 90 91 92	·18 ·18 ·18 ·26	90 91 92	·05 ·06 ·14	88 89 90 92	·91 ·93 ·02	88 89 90 91	·78 ·81 ·90	88.64 89.64 90.68 91.78
94 95 96 97 98	94 95 96	·28 ·31 ·33 ·35 ·37	94 95 96	·16 ·19 ·22 ·24 ·27	94 95 96	·05 ·08 ·10 ·14 ·16	93 94 96	.93 .96 .99 .03	92·81 93·85 94·88 95·92 96·96
99	98	37	98	.32	98	·19	98	.09	97.97

TRUE PER CENT.

Indica- tion.	0.71	0	72	0	87	3 00	74	0	75°
1 2 3 4 5	1 2 3	·58 ·47 ·41 ·36 ·29	3	35 30 22	75	0.53 1.38 2.30 3.24 4.14	1 2 3	·51 ·33 ·24 ·18	0.48 1.29 2.19 3.12 4.00
6 7 8 9	5 6 7 8	·22 ·18 ·15	5.6.7.8.	14	07 80 80 81 82 82	5.07 6.02 6.98	4 5 6 7	·99 ·94 ·89 ·81	4·92 5·86 6·81
10 11 12 13 14	9 10 11	·97 ·92 ·87 ·80 ·70	10.	88 81 76 68	10	3·78 9·71 0·65 1·56 2·45	9 10 11	·69 ·60 ·54 ·44 ·32	9:49 10:43 11:32
15 16 17 18	14	·62 ·54 ·47 ·38	14	32	1.	3·36 4·27 5·18 6·08	14	·23 ·14 ·03 ·93	14·00 14·89 15·78
19 20 21 22 23	18	·27 ·17 ·06 ·95 ·90	18	88	1	6.96 7.84 8.71 9.58	17 18	·80 ·67 ·53 ·40 ·36	16.64 17.51 18.35 19.22 20.18
24 25	21	·89 ·86	21	70.68	2	1.52	2 I	.33	21.12

## 719-759

Indica- tion.	71	0	72	0	78	30	74	0	75	0
26 27 28 29 30	24 25 26	·80 ·76 ·74 ·79 ·69	24 25 26	·61 ·57 ·55 ·52 ·50	24 25 26	·43 ·39 ·37 ·33 ·31	24 25 26	·24 ·20 ·18 ·15	24 24 25	·06 ·01 ·99 ·96 ·93
31 32 33 34 35	28 29 30 31	·69 ·67 ·68 ·67	28 29 30 31	·50 ·48 ·49 ·48 ·48	28 29 30 31	·31 ·30 ·29 ·29 ·28	28 29 30 31	·12 ·11 ·10 ·10	27 28 29 30	.93 .92 .91 .91
36 37 38 39 40	33 34 35 36	·67 ·64 ·63 ·66	33 34 35 36	·48 ·44 ·43 ·47	33 34 35 36	·28 ·25 ·24 ·27 ·33	33 34 35 36	09	3 <sup>2</sup> 33 34 35	·89 ·85 ·85 ·89
41 42 43 44 45	38 39 40 41	72 ·73 ·72 ·73 ·76	38 39 40	53 54 53 54	38 39 40 41	33 34 34 35	38 39	14	37 38 39 40	·95 ·96 ·95
46 47 48 49 50	43 44 45 46	78 79 80 80 80	43	59 60 61 62	43 44	41 41 42 43	43° 44° 45° 46° 47°	22 22 23 25	43 44 45 46 47	03

TRUE PER CENT.

Indica- tion.	71 °	72°	73°	74°	75°
51 52 53 54 55	48.87 49.87 50.87 51.88 52.89	48.69 49.68 50.69 51.69 52.70	48·50 49·50 50·50 51·51 52·52	48·32 49·31 50·32 51·32 52·33	48·13 49·13 50·13 51·14 52·15
56 57 58 59 60	53.92 54.92 55.93 56.95 57.96	53·7² 54·74 55·76 56·77 57·78	53·55 54·57 55·58 56·60	53·35 54·39 55·41 56·42 57·41	53·17 54·21 55·23 56·24 57·23
61 62 63 64	58.95 59.95 60.96 61.99	58·77 59·77 60·79 61·82	58·59 59·59 60·61 61·64	58·41 59·41 60·44 61·47	58·23 59·23 60·26 61·29
65 66 67 68 69	63·02 64·02 65·02 66·05 67·07	62·84 63·85 64·85 65·88 66·90	62.67 63.67 64.68 65.70 66.73	62·49 63·50 64·51 65·53 66·56	62·32 63·32 64·34 65·36 66·39
70 71 72 73	68·08 69·08 70·09 71·11	67.91 68.91 69.92 70.95	68·75 69·76 70·78	67·56 68·58 69·59 70·62	67·39 68·41 69·43 70·45
74 75.	72.13	71.96	71.80	71.63	71.47

## 71°—75

TRUE PER CENT.

Indica- tion.	71°	72°	73°	74°	75°
76 77 78 79 80	74·16 75·18 76·26 77·26	75.02	73.83 74.85 75.89 76.89 77.91	73.67 74.69 75.73 76.74 77.76	73.51 74.53 75.57 76.58 77.60
81 82 83 84 85	79.25 80.27 81.29 82.30 83.33	79.09 80.11 81.14 82.15	78·94 79·96 80·98 82·00 83·04	78·78 79·80 80·83 81·85 82·89	78.63 79.65 80.68 81.70 82.75
86 87 88 89 90	84·38 85·46 86·42 87·48 88·51	84·24 85·26 86·29 87·34	84.09 85.11 86.15 87.21 88.24	83.95 84.97 86.02 87.07 88.10	83.81 84.83 85.88 86.94 87.97
91 92 93 94 95	89.51 90.56 91.66 92.72 93.74	89·37 90·44 91·54 92·58	89·24 90·31 91·43 92·47 93·52	89·10 90·19 91·31 92·35 93·41	88·97 90·07 91·19 92·24 93·30
96 97 98 99 100	94.77 95.82 96.86 97.87 98.94	95.71 96.75 97.78	94·56 95·61 96·65 97·68 98·74	94·46 95·50 96·54 97·59 98·64	94·35 95·40 96·44 97·49 98·54

TRUE PER CENT.

Indica- tion.	76	°°	77	0	78	3 °	79	) °	80	) °
1 2 3 4	I 2	·46 ·25 ·14 ·06	I 2	·44 ·22 ·10	I 2	·43 ·17 ·05	I 2	·41 ·14 ·01 ·87	1	·39 ·11 ·96 ·81
5 6 7 8	4 5	.93 .84 .78	4:5:	77	4 5	·79 ·69 ·61 ·55	4 5	·72 ·62 ·53 ·47	4	·65 ·54 ·45 ·38
9 10 11 12	7 8 9	·61 ·48 ·39 ·31	7 8 9	51 38 28	7 8 9	·42 ·27 ·18 ·08	7 8 9	·32 ·17 ·07 ·97	8 8	·22 ·06 ·97 ·85
13 14 15 16	I I I 2 I 2	·20 ·07 ·97	I I :	08 94 83	10 11 12	.95 .82 .70	10 11 12	·83 ·69 ·56	1 C	·71 ·57 ·43
17 18 19 20	14 15 16	·86 ·75 ·63 ·49 ·35	14	72 60 48 34 18	14 15 16	·58 ·46 ·34 ·18	14 15 16	·44 ·31 ·19 ·03 ·85	14	·30 ·17 ·04 ·88
21 22 23 24	18 19 20	·18 ·05 ·01	18	88 83 80	17	·85 ·71 ·66 ·62	17 18	·68 ·54 ·48 ·45	17	·51 ·37 ·31 ·27
25		.95		78		.60		43		.26

F

#### 76°-80°

Indica- tion.	76°	770	78°	79°	80°
26	22.89	22:71	22·54	22·36	22·19
27	23.83	23:66	23·48	23·31	23·13
28	24.81	24:64	24·46	24·29	24·11
29	25.78	25:60	25·43	25·25	25·07
30	26.76	26:58	26·41	26·23	26·06
31 32 33 34 35	27.75 28.74 29.73 30.73 31.71	27·58 28·56 29·55 30·55 31·53	27·40 28·39 29·38 .30·37 31·35	27·23 28·21 29·20 30·19	27.05 28.03 29.02 30.01 30.99
36	32·71	32·53	32·34	32·16	31·98
37	33·67	33·49	33·31	33·13	32·95
38	34·67	34·49	34·30	34·12	33·94
39	35·71	35·53	35·35	35·17	34·99
40	36·77	36·59	36·40	36·22	36·04
41	37.77	37.59	37:40	37·22	37.04
42	38.78	38.59	38:41	38·22	38.04
43	39.77	39.59	39:40	39·22	39.04
44	40.79	40.61	40:42	40·24	40.06
45	41.82	41.64	41:45	41·27	41.09
46	42.85	42.66	42·48	42·29	42·11
47	43.85	43.67	43·49	43·31	43·13
48	44.86	44.68	44·51	44·33	44·15
49	45.89	45.71	45·54	45·36	45·18
50	46.92	46.74	46·56	46·38	46·20

TRUE PER CENT.

Indica- tion.	76°	770	78°	79°	80°
51	47.95	47·78	47.60	47:43	47.25
52	48.95	48·78	48.60	48:43	48.25
53	49.95	49·78	49.60	49:43	49.25
54	50.96	50·78	50.61	50:43	50.25
55	51.97	51·79	51.62	51:44	51.26
56	53.00	52.82	52.65	52·47	52·30
57	54.03	53.85	53.68	53·50	53·32
58	55.05	54.87	54.70	54·52	54·34
59	56.06	55.88	55.71	55·53	55·35
60	57.06	56.89	56.71	56·54	56·37
61	58.05	57.88	57.70	57.53	57.35
62	59.06	58.89	58.71	58.54	58.37
63	60.09	59.92	59.74	59.57	59.40
64	61.12	60.95	60.78	60.61	60.44
65	62.15	61.98	61.81	61.64	61.47
66	63·15	62·99	62·82	62.66	62·49
67	64·17	64·00	63·84	63.67	63·50
68	65·19	65·03	64·86	64.70	64·53
69	66·22	66·05	65·89	65.72	65·55
70	67·22	67·06	66·89	66.73	66·56
71	68·24	68.08	67·91	67.75	67·58
72	69·27	69.10	68·94	68.77	68·61
73	70·29	70.13	69·96	69.80	69·64
74	71·31	71.15	70·98	70.82	70·66
75	72·33	72.17	72·00	71.84	71·68

TRUE PER CENT.

Indica- tior.	76°	77 °	78°	∂79°	80°
76 77 78	73:35 74:37 75:41	73·19 74·21 75·26	73.04 74.06 75.10	72·88 73·90 74·95	72·72 73·74 74·79
79 80	76·42 77·45	76.27	76.11	75.96 76.99	75.80
81 82 83 84	78·48 79·50 80·53 81·56	78·33 79·35 80·38 81·42	78·18 79·20 80·24 81·27	80.09 80.09 80.03	77.88 78.90 79.94 80.99
85 86	82.61	82.47	82.33	82.19	82.05
87 88 89	84.69 85.75 86.81	84·56 85·61 86·68	84·42 85·48 86·54	84·29 85·34 86·41	84·15 85·21 86·28
90 91 92	87·84 88·97 89·95	88·85 89·83	87·57 88·73 89·72	87·43 88·61 89·60	87·30 88·37 89·48
93 94 95	93.13 95.13 91.07	92.02	90·84 91·90 92·97	90·73 91·79 92·86	90.61 91.68 92.75
96 97 98	94·25 95·30 96·34		95.09	94.98	93·83 94·88 95·94
99 100	97·39 98·45	97.29	97.20	97.10	97.00

TRUE PER CENT.

Indica- tion.	81°	82°	83°	84 °	85°
1	0.38	0.36	0.35	0.33	0.32
2	1.08	1.05	1.03	1.00	0.97
3	1.91	1.87	1.82	1.78	1.73
4	2.75	2.69	2.64	2.58	2.52
5	3.59	3.25	3.46	3.39	3.33
6	4.47	4.40	4.32	4.25	4.18
7	5.37	5.29	5.22	5.14	5.06
8	6.29	6.20	6.10	6.01	5.92
9	7.12	7.03	6.93	6.84	6.74
10	7.96	7.87	7.77	7.68	7.58
11	8.86	8.76	8.65	8.55	8.44
12	9.74	9.62	9.51	9.39	9.28
13	10.29	10.47	10.35	10.53	10.11
14	11.44	11.31	11.10	11.06	10.93
15	12.30	12.17	12.03	11.90	11.77
16	13.16	13.03	12.89	12.76	12.62
17	14.03	13.89	13.75	13.61	13.47
18	14.90	14.76	14.61	14.47	14.33
19	15.73	15.28	15.42	15.27	15.15
20	16.53	16.38	16.22	16.07	15.91
21	17.35	17.19	17.03	16.87	16.71
22	18.30	18.03	17.87	17.70	17.53
23	19.14	18.98	18.81	18.65	18.48
24	50.11	19.94	19.78	19.61	19.45
25	21.09	20.93	20.76	20.60	20.43
1	1				

#### 81°-85°

TRUE PER CENT.

Indica- tion.	81°	82°	83°	84°	85°
26 27 28 29 30	22.02 22.97 23.94 24.90 25.89	21.86 22.80 23.78 24.74 25.72	21.69 22.64 23.61 24.57 25.56	21.53 22.47 23.45 24.41 25.39	21·36 22·31 23·28 24·24 25·22
31 32 33 34 35	26.88 27.86 28.85 29.84 30.82	26·72 27·69 28·68 29·67 30·65	26·55 27·53 28·52 29·49 30·48	26·39 27·36 28·35 29·32	26·22 27·19 28·18 29·15
36 37 38 39 40	31.81 32.78 33.77 34.82 35.87	31·64 32·61 33·59 34·64 35·70	31·47 32·44 33·42 34·47 35·52	31·30 32·27 33·24 34·29 35·35	31·13 32·10 33·07 34·12
41 42 43 44 45	36.87 37.87 38.87 39.88 40.92	36.69	36·52 37·52 38·52 39·53 40·57	36·34 37·35 38·35 39·36 40·40	36·17 37·18 38·18 39·18 40·23
46 47 48 49 50	41.94 42.96 43.98 45.01 46.03	41.77 42.79 43.81 44.84	41.59 42.62 43.64 44.67	41·42 42·45 43·47 44·50	41·25 42·28 43·30 44·33 45·36

TRUE PER CENT.

Indica- tion.	81°	82°	83°	84°	85°
51	47.08	46.91	46·73	46·56	46·39
52	48.08	47.90	47·73	47·55	47·38·
53	49.08	48.91	48·73	48·56	48·39
54	50.08	49.91	49·73	49·56	49·39
55	51.09	50.92	50·75	50·58	50·41
56 57 58 59 60 61	52·13 53·15 54·17 55·18 56·20 57·18	51.96 52.98 54.00 55.01 56.02	51.78 52.81 53.83 54.84 55.85	51.61 52.64 53.66 54.67 55.67	51.44 52.47 53.49 54.50 55.50
62 63 64 65 66	58·20 59·23 60·27 61·31	58.03 59.07 60.10 61.14 62.16	57.86 58.90 59.94 60.98	57·69 58·74	57.52 58.57 59.60 60.65
67	63·34	63·18	63.01	62·85	62.69
68	64·36	64·20	64.03	63·87	63.70
69	65·38	65·22	65.05	64·89	64.72
70	66·40	66·24	66.07	65·91	65.75
71	67:42	67·26	67·10	66.94	66.78
72	68:45	68·29	68·13	67.97	67.81
73	69:48	69·32	69·16	69.00	68.84
74	70:50	70·34	70·19	70.03	69.87
75	71:53	71·37.	71·22	71.06	70.91

TRUE PER CENT.

Indica- tion.	81	0	82°	83°	84°	85°
76 77 78 79 80	72· 73· 74· 75· 76·	59 64 65	72·41 73·44 74·48 75·50 76·54	72·26 73·28 74·33 75·35 76·38	72·10 73·13 74·17 75·20 76·23	71.95 72.98 74.02 75.05 76.08
81 82 83 84 85	77 78 79	73 75 80 85	77.58 78.60 79.66 80.71 81.77	77.42 78.46 79.51 80.58 81.62	77.27 78.31 79.37 80.44 81.48	77.12 78.16 79.23 80.30 81.34
86 87 88 89 90	82: 84: 85: 86:	The same	82.83 83.89 84.95 86.01 87.05	82.69 83.75 84.81 85.88 86.93	82·56 83·62 84·68 85·74 86·80	82·42 83·49 84·55 85·61 86·68
91 92 93 94 95	88 89 90 91	·25 ·36 ·50 ·57 ·64	88·13 89·25 90·38 91·46 92·53	88·02 89·13 90·27 91·35 92·42		88.90
96 97 98 99 100	93 94 95 96	·72 ·78 ·84 ·90 ·97	93.61 94.68 95.74 96.81 97.89	93·51 94·57 95·64 96·71	93.41 94.47 95.54 96.62	93·29 94·37 95·44 96·52

TRUE PER CENT.

Indica- tion.	86	0	87	0	88°	89 °	900
1 2 3	0.	31 94 69	0.	30 91 65	0.28 0.89	0·27 0·86 1·57	0·26 0·83 1·53
4 5	3.	47	3.	42 2 I	2.36	3.08	3.02
6 7 8 9	4.	98 83 65	4.	90 74 56	3·98 4·83 5·66 6·47	3·91 4·75 5·57 6·38	3·84 4·67 5·48 6·29
10 11	7.	48 33	7· 8·	38	7·29 8·12	7·19 8·02	7.09
12 13 14 15	1			-	8·94 9·76 10·50	8·82 9·64 10·36	8.71 9.52 10.22
16 17	12-	49	13.	36	12.23	12.10	11.97
18 19 20	14.	97	14.	83	13·90 14·68 15·46	13.76	13.62 14.39 15.16
21 22 23	17		16.	17	16.25	16.09 16.91 17.86	15.94 16.76 17.71
24 25		29	20		18.98	19.82	18.67

TRUE PER CENT.

Indica- tion.	86°	87°	88°	89 °	90°
26	21·21	21.06	20.90	20.75	20.60
27	22·16	22.00	21.85	21.69	21.54
28	23·12	22.97	22.81	22.66	22.50
29	24·08	23.93	23.77	23.62	23.46
30	25·07	24.91	24.76	24.60	24.45
31	26.06	25.91	25.75	25.60	25.44
32	27.03	26.88	26.72	26.57	26.41
33	28.02	27.86	27.69	27.53	27.37
34	28.99	28.83	28.67	28.51	28.35
35	29.98	29.82	29.66	29.50	29.34
36	30.97	30.81	30.65	30.49	30·33
37	31.94	31.77	31.61	31.44	31·28
38	32.91	32.75	32.58	32.42	32·26
39	33.96	33.79	33.63	33.46	33·30
40	35.02	34.85	34.69	34.52	34·36
41	36.01	35.85	35.69	35.53	35·37
42	37.02	36.85	36.69	36.52	36·36
43	38.01	37.85	37.68	37.52	37·35
44	39.01	38.85	38.68	38.52	38·35
45	40.06	39.90	39.73	39.57	39·40
46	41·09	40·92	40·76	40·59	40.43
47	42·11	41·95	41·78	41·62	41.45
48	43·13	42·97	42·80	42·64	42.47
49	44·16	44·00	43·83	43·67	43.50
50	45·19	45·02	44·86	44·69	44.52

TRUE PER CENT.

Indica- tion.	86°	87°	88°	89°	90°
51	46·22	46.06	45.89	45.73	45.56
52	47·21	47.05	46.88	46.72	46.55
53	48·22	48.06	47.89	47.73	47.56
54	49·23	49.06	48.90	48.73	48.57
55	50·24	50.08	49.91	49.75	49.58
56	51·27	51·10	50.94	50.77	50.60
57	52·31	52·14	51.98	51.81	51.65
58	53·32	53·16	52.99	52.83	52.66
59	54·33	54·17	54.00	53.84	53.67
60	55·34	55·18	55.01	54.85	54.69
61 62 63 64 65	56·35 57·36 58·41 59·44 60·49	56·18 57·20 58·24 59·28	56·02 57·03 58·08 59·13 60·18	55.85 56.87 57.91 58.97 60.02	55.69 56.71 57.75 58.81 59.86
66	61·51	61·35	61·19	61·03	60.87
67	62·53	62·36	62·20	62·03	61.87
68	63·54	63·38	63·21	63·05	62.89
69	64·56	64·40	64·24	64·08	63.92
70	65·59	65·43	65·27	65·11	64.95
71	66.62	66·47	66·31	66·16	66.00
72	67.65	67·50	67·34	67·19	67.03
73	68.69	68·53	68·38	68·22	68.07
74	69.72	69·57	69·41	69·26	69.11
75	70.76	70·61	70·45	70·30	70.15

TRUE PER CENT.

Indica- tion.	86°	87°	88°	89°	90°
76	71.80	71.65	71·49	71·34	71·19
77	72.83	72.68	72·43	72·28	72·23
78	73.87	73.72	73·57	73·42	73·27
79	74·9°	74.75	74.61	74·46	74·31
80	75·93	75.79		75·50	75·35
81 82 83 84	76.98 78.02 79.09 80.16	76.83 77.88 78.96 80.02	76.69 77.75 78.82 79.89	76·54 77·61 78·69	76·40 77·47 78·55 79·61
85 86	81.21	81·07 82·16	80.94	79.75 80.80 81.89	80.67
87	83·36	83·23	83·10	82.97	82.84
88	84·42	84·29	84·16	84.03	83.90
89	85·48	85·36	85·23	85.11	84.98
90	86·56	86·44	86·33	86.21	86.00
91	87·66	87·55	87:43	87·32	87·20
92	88·79	88·67	88:56	88·44	88·33
93 94 95	95.10 91.05 86.63	90.92 92.00	90·81 90·81	89.60 90.71 91.79	89·49 90·60 91·69
96	93·19	93.09	92.98	92·88	92·78
97	94·27	94.17		93·97	93·87
98	95·34	95.25		95·06	94·96
100	96.42	96·32 97·42	96.23	97.23	97.14

TRUE PER CENT.

Indica- tion.	91°	92°	93°	94°	95°
1 2 3	0·25 0·81 1·49	0·24 0·79 1·45	0·24 0·76 1·42	0·23 0·74 1·38	0.55 0.4 1.34
4 5 6	2·21 2·97	2·16 2·91 3·71	2·12 2·86 3·65	2·07 2·80 3·58	2·02 2·75 3·52
7 8 9	4.59 5.39 6.20	4.21 2.31	4.44 5.22 6.01	4·36 5·14 5·92	4·28 5·05 5·83
10 11 12	6·99 7·80 8·60	6·89 7·70 8·49	6·79 7·59 8·39	7.50 8.28	6·59 7·38 8·17
13 14 15	9.41 10.12 11.02	9·29 10·02 10·89	9·18 9·92 10·77	9.06 9.82 10.64	8·95 9·7 <sup>2</sup> 10·5 <sup>2</sup>
16 17 18	11.84 12.66 13.48	11.71 12.53 13.35	11.59	11·46 12·26 13·08	11.33
19 20 21	14·25 15·02 15·80	14·11 14·88	13·98 14·74 15·51	13·84 14·60	13·70 14·46 15·23
22 23 24	16.62 17.56 18.53	16·47 17·42 18·39	16·33 17·27 18·24	16.18	16·04 16·98 17·96
25	19.53	19.38	19.24	19.09	18.95

G

## TRUE PER CENT.

T.	T	-	1	-					1	
Indica-	9	1°	99	20	93	3 °	94	0	98	5°
26	4	0.46		.31	4	0.17		0.02		.88
$\begin{array}{ c c c } 27 \\ 28 \end{array}$	1	1.40		.25		.11		96		
29		2:36	1230	18		.03		·92		78
30	1	1.30		.16		10.		.87		.72
31	2	5.29		.15	25	.00	24	.86	24	.71
32		5.26		11		.95		.80		.65
33	1	7.22		.07	26	.93		.78	26	.63
34	5 10 1	3.20		.05		16.		.76		.61
35	29	0.19	29	.04	28	.88	28	73	28	.28
36		0.18	-	.03	,	.87	-	.72		.57
37		1.13		.98		.82		.67		.52
38 39	200	2.10		94		79		·63		·47
40		.2 I		.05		.90		.74		.59
41		·2 I		.06		.90	16	75		.59
42		.20	00	.04		.89		73		.57
43		.19		.03		.87	36	.71	36	.55
44		8.19	38	.03	37	.87	37	71	37	.55
45	39	24	39	.09	38	.93	38	78	38	.62
46	40	.27	40	11	39	.96	39	.80	39	.64
47	100	.29		13	40	97	100	.81	100	.65
48	EDITOR TO	.31		15	CORNEL TO	.00		.84	17.7%	.68
49   50		34		18		.02		·86 ·89	1	70
00	44	.36	44	20	44	.05	43	9	43	13

TRUE PER CENT.

Indica- tion.	91	0	92	•	98	300	94	60	98	5°
51 52 53 54 55	45° 46° 47° 48° 49° 49° 49° 49° 49° 49° 49° 49° 49° 49	39 40 41	46 47 48	·24 ·23 ·24 ·25 ·26	46 47 48	·08 ·07 ·09 ·09	45 46 47	.92 .91 .93 .93	45	.76 .75 .77 .77
56 57 58 59 60	50°2 51°2 53°2 54°3	49 50 51	51	34	51 52 53	·11 ·16 ·18 ·20 ·21	49 51 52 53	.05 .02 .04 .05	50 51 52	·79 ·84 ·86 ·88 ·89
61 62 63 64 65	55°5 56°5 57°5 58°6	55	55° 56° 57° 58° 59°	39 44 50	55 57 58	·22 ·22 ·28 ·34 ·39	56 57 58	·06 ·06 ·13 ·19 ·24	54 55 56 58	.90 .90 .97 .03
66 67 68 69 70	60.7	74	60· 61· 62· 63· 64·	56 56 58 61	61	43	61 62 63	·25 ·25 ·27 ·30 ·33	60 61 62 63	12
71 72 73 74 75	65.8 66.8 67.9 68.9	38	65. 66. 67. 68. 69.	72 77 81	65 66 67 68	54	65 66 67 68	38 41 46 50 54	66 67 68	23 26 31 35 39

TRUE PER CENT.

Indica- tion.	91°	92°8	93°	94 °	95°
76 77 78 79 80	71.04 72.08 73.12 74.17 75.21	70·89 71·93 72:98 74·02 75·06	70.75 71.79 72.83 73.88	72.69	70:45 71:49 72:54 73:59 74:63
81 82 83 84	76·26 77·33 78·41 79·48	76·12 77·19 78·28 79·34	74:92 75:99 77:06 78:14 79:21	75.85 76.92 78.01 79.07	75°71 76°78 77°87 78°94
85 86 87 88 89	80·54 81·63 82·71 83·77 84·86	80.41 81.50 82.58 83.64 84.74	80·28 81·37 82·45 83·51 84·63		80.02 81.11 82.19 83.25 84.39
90 91 92 93	85.98 87.07 88.22 89.38	85·86 86·98 88·11	85·75 86·86 88·01	85.63 86.75 87.90	86.64 87.79 88.95
94 95 96 97	90·49 91·59 92·68 93·77	90·38 91·48 92·58 93·68	90·28 91·38 92·48 93·58	90·17 91·27 92·38 93·49	90.06 91.17 92.28 93.39
98 99 100	94·87 95·94 97·05	95.85	95.77	95.68	94·49 95·59 96·69

TRUE PER CENT.

Indica- tion.	9	6°	9	70	9	8°		99 • [	1	00°
$\frac{1}{2}$		0.21	1	0.51	Qui-	0.20		0.20	70	0.19
3 4		1.31	KO K	1.28		1.90		1.86		1.18
5 6 7		2·70 3·45 4·21	T.	2·65 3·39 4·14		2·59 3·32 4·06		3.26	7	3·19 3·92
8 9	V	4°97 5°74		4·90 5·66		4.82		3.99 4.75 5.49		4·67 5·40
10	8	6·50 7·28 8·06		7.18	200	7.09	800	6.99	0	6.89
12 13 14		8·84 9·61		7·96 8·73 9·50		7·85 8·63 9·38	8	7.75 8.52 9.27		7.64 8.41 9.16
15 16	I	0.40	I	0.59	1	0.17	00	10.06	-	9°94 10°71
17 18 19	I	2·00 2·81	I	1·88 2·69 3·44	I	1.75 2.56 3.32	8	12.44 13.19		12.31
$\begin{bmatrix} 20 \\ 21 \end{bmatrix}$	I	4.33	I	4.20	I	4.06		13.93		13.80
22 23 24	I	5.91 6.85 7.83	I	5.77 6.72	I	5·64 6·58		15.50	2	15.37
25		8.82		7·69 8·68		7·56 8·55		17.42		17.29

# 96°—100°

## TRUE PER CENT.

Indica- tion.	96°	97°	98°	99 °	100°
26 27 28 29	19.75 20.68 21.64 22.61	19.62 20.55 21.51 22.47	19.48 20.41 21.37 22.34	19.35 20.38 21.24 22.20	19:22 20:14 21:10 22:06
30 31 32 33 34	23·58 24·57 25·51 26·49 27·47	23.44 24.43 25.37 26.35 27.33	23·31 24·28 25·24 26·21 27·19	23·17 24·14 25·10 26·07 27·05	23.03 24.00 24.96 25.93 26.91
35 36 37 38	28·44 29·42 30·37 31·32	28·30 29·28 30·22 31·17	28·15 29·13 30·08 31·03	28.01 28.99 29.93 30.88	27·87 28·84 29·78 30·73
39 40 41 42 43	32·37 33·44 34·44 35·42 36·40	32·23 33·29 34·29 35·27 36·25	32.08 33.12 34.14 35.12	31.94 33.00 33.99 34.97 35.95	31.79 32.85 33.84 34.82 35.80
44 45 46 47	37·40 38·47 39·49 40·50	37.25 38.32 39.34 40.35	37·11 38·16 39·18 40·19	39.03 40.04	36.81 37.86 38.88 39.89
48 49 50	41.23 42.22 43.28	41·38 42·39 43·42	41.22 42.24 43.27	41.07	40·92 41·93 42·96

TRUE PER CENT.

Indica-	96°	97°	98°	99°	100°
51	44.61	44·46	44·30	44.15	44.00
52	45.60	45·44	45·29	45.13	44.98
53	46.62	46·46	46·31	46.15	46.00
54	47.61	47·45	47·30	47.14	46.98
55	48.61	48·45	48·30	48.14	47.98
56	49.63	49·48	49·32		49.01
57	50.68	50·52	50·37		50.05
58 59 60 61	51.71 52.72 53.73 54.74	51·56 52·56 53·58	51.42 52.41 53.42	51·27 52·25 53·27 54·28	51·12 52·09 53·11
62 63 64	55.75 56.82 57.88	55.59 56.67 57.73 58.78	55.44 56.51 57.57	55·28 56·36 57·42	55.13 56.21 57.27
65 66 67 68	58.93 59.94 60.95 61.97	59.78 60.80 61.81	58.62 59.63 60.64 61.66	58·47 59·47 60·49 61·50	58·32 59·32 60·34 61·35
69	62·99	62·84	62·68	62·53	62·38
70	64·03	63·88	63·72	63·57	63·42
71	65·08	64·93	64·77	64·62	64·47
72	66·11	65.96	65·82	65.67	65·52
73	67·16	67.01	66·87	66.72	66·57
74	68·20	68.05	67·91	67.76	67·61
75	69·25	69.10	68·96	68.81	68·67

TRUE PER CENT.

Indica- tion.	96°	97°	98°	99°	100°
76 77 78 79 80	70·30 71·35 72·40 73·45 74·49	70·16 71·20 72·26 73·30 74·35	70.01 71.06 72.11 73.16	69.87 70.91 71.97 73.01 74.08	69·72 70·77 71·83 72·87 73·94
81 82 83 84 85	75.57 76.65 77.74 78.81	75.44 76.51 77.61 78.68	75·30 76·38 77·47 78·56 79·64	75.17 76.24 77.34 78.43 79.52	75.03 76.11 77.21 78.30 79.39
86 87 88 89 90	80·98 82·06 83·13 84·28 85·41	80·86 81·93 83·01 84·16 85·30	80·73 81·81 82·90 84·05 85·18	80.61 81.68 82.78 83.93 85.07	80·48 81·55 82·66 83·82 84·96
91 92 93 94 95	86·53 87·68 88·84 89·96	86·42 87·57 88·74 89·85	86·31 87·47 88·63 89·75 90·87	86·20 87·36 88·53 89·64 90·77	86·09 87·25 88·42 89·54 90·67
96 97 98 99 100	92·18 93·29 94·40 95·50 96·60	92·08 93·20 94·31 95·41 96·51	91·99 93·10 94·21 95·32 96·43	91·89 93·01 94·12 95·23 96·34	91·79 92·91 94·03 95·14 96·25

#### TRUE DEE CENT.

## TABLE II.

Showing the volume which 1000 gallons of any spirituous liquor, measured at any temperature between 20° and 100° Fahr., and of which the true per cent. by volume is known, will occupy when brought to the standard temperature of 60° Fahrenheit.

25°	o FG	23 °	°22.	c 18	
1.0001	5.0001	10001	2.0001	1.0001	ī
2.0001	1,000.1	E.0000.3		100012	
1,0001		10003	Togo,	10001	05.4
10001	9.0001	9.0001 5.0001	Sincer.		
8.0001	4.000x	7,0001	9.0001	g-00/81	
11001	1.1001	9.0001			
1001	1001	1:1001	1:1001		
4 1001	4,1001	1001.3		1001	
9.1001	5.1001	1001	4.1001	11001	
Sticon	8,1001	8. TOOL	4 1001		
10001	1:1001	1002:1	1002:3	1001	
9.2001	9-2001	9.2001	0.1001	9.2001	
1002'9	6.2001	100219			
1001	ELEGISI				TI
0 1001				1,001 g. 1001	
1004.5			Licox	7,1001	
		1,5001			
7.5001	5.5001	1002.6		1,5001	2.0
1,5001	100018				28
10001	10000		6-9001	1:7001	62

VOLUMES.

Water or the section	'rrue per Cent.	21°	22°	23°	24°	25°
	1	1000.1	1000.5	1000.5	1000.3	1000.4
1	2	1000.5	1000.3	1000.3	1000.4	1000.2
1	. 3	1000.5	1000-3	1000.3	1000.4	1000.5
I	4	1000.4	1000.4	1000.2	1000.2	1000.6
١	5	1000.2	1000.2	1000.6	1000.6	1000.7
1	6	1000.6	1000.6	1000.7	1000.7	1000.8
ı	7	1000.7	1000.8	1000.8	1000.0	1000.9
I	8	1000.9	1001.0	1001.0	1001.1	1001.1
ı	9	1001.0	1001.1	1001.1	1001.5	1001.3
ı	10	1001.3	1001.3	1001.3	1001.4	1001.4
ı	11	1001.4	1001.4	1001.5	1001.2	1001.6
I	12	1001.7	1001.7	1001.8	1001.8	1001.8
I	13	1002.0	1002.0	1002.1	I002.I	1002.1
I	14	1002.3	1002.3	1002.3	1002.3	1002.3
	15	1002.6	1002.6	1002.6	1002.6	1002.6
ı	16	1003.0	1003.0	1002.9	1002.9	1002.9
I	17	1003.4	1003.4	1003.3	1003.3	1003.3
Ï	18	1003.8	1003.7	1003.7	1003.6	1003.6
ı	19	1004.2	1004.2	1004.1	1004.1	1004.0
-	20	1004.7	1004.7	1004.6	1004.6	1004.2
	21	1005.2	1005.1	1005.1	1005.0	1004.9
l	22	1005.7	1005.6	1005.6	1005.2	1005.4
	23	1006.5	1000.1	1005.9	1002.8	1005.7
	24	1006.6	1006.2	1006.3	1006.5	1000.1
	25	1007.1	1006.9	1006.7	1006.6	1006.2
ľ			,		-	

H

True per Cent.	21°	22°	23°	24°	25°
26	1007.5	1007.3	1007.2	1007.0	1006.9
27	1007.9	1007.8	1007.6	1007.5	1007.3
28	1008.4	1008.3	1.8001	1007.9	1007.7
29	1008.9	1008.7	1008.6	1008.4	1008.2
30	1009.2	1009.3	1000.1	1008.9	1008.7
31	1010.0	1009.8	1009.5	1009.3	1009.1
32	1010.5	1010.3	1010.0	1009.8	1009.5
33	1010.0	1010.7	1010.4	1010.5	1009.9
34	1011.3	IOII.I	1010.8	1010.6	1010.3
35	1011.8	1011.2	1011.3	1010.0	1010.7
36	1012.2	1011.9	1011.7	1011.4	1011.1
37	1012.8	1012.5	1012.2	1011.9	1011.6
38	1013.3	1013.0	1012.7	1012.4	1012.1
39	1013.6	1013.3	1012.9	1012.6	1012.3
40	1013.8	1013.4	1013.1	1012.7	1012.4
41	1014.1	1013.7	1013.4	1013.0	1012.7
42	1014.4	1014.0	1013.7	1013.3	1013.0
43	1014.6	1014.3	1013.9	1013.6	1013.5
44	1014.9	1014.5	1014.2	1013.8	1013.5
45	1015.2	1014.8	1014.5	1014.1	1013.7
46	1015.4	1015.1	1014.7	1014.4	1014.0
47	1015.7	1015.3	1015.0	1014.6	1014.2
48	1015.9	1015.5	1015.2	1014.8	1014.4
49	1016.1	1015.7	1015.3	1014.9	1014.5
50	1016.3	1015.9	1015.5	1015.1	1014.7

True per Cent.	21°	22°	23°	24°	25°
51 52 53 54 55 56	1016.5 1017.0 1017.1 1017.2	1016·1 1016·6 1016·6 1016·8 1016·9	1015.7 1015.9 1016.1 1016.2 1016.3	1015·3 1015·9 1015·9 1016·0	1014·9 1015·3 1015·4 1015·5
57 58 59 60 61	1017.5	1017·1 1017·2 1017·3	1016.7 1016.8 1016.9 1017.0	1016·2 1016·4 1016·6 1016·7	1015.8 1016.0 1016.2
62 63 64 65	1018·2 1018·3 1018·4	1017.6 1017.8 1017.9 1018.0	1017·2 1017·3 1017·5 1017·6	1016.9 1017.1 1017.2	1016·4 1016·5 1016·6 1016·7
66 67 68 69 70	1019.0 1019.0 1019.0	1018·5 1018·5 1018·5	1017.8 1018.1 1018.1 1018.2	1017.6 1017.6 1017.6 1017.8	1012.3
71 72 73 74 75	1019.5	1013.3 1013.1 1013.0 1018.8	1018·4 1018·5 1018·6 1018·7 1018·8	1017.9 1018.1 1018.2 1018.3	1017.4 1017.6 1017.7 1017.8

True per Cent.	21°	22°	23°	24°	25°
	1019.9	1019.4	1018.9	1018-4	1017.9
77 78	1020.0	1019.2	1019.5	1018.7	1018.5
79 80	1020.2	1019.8	1019.4	1018.8	1018.3
81	1020.7	1020.5	1019.6	1010.1	1018.6
82	1020.9	1020.4	1019.8	1019.3	1018.8
84	1021.7	1020.6	1020.0	1019.4	1019.0
85		1020.6	1020.1	1019.5	1019.0
86 87	1051.3	1020.6	1020.1	1019.5	1010.1
88	1021.4	1020.9	1020.3	1010.8	1019.3
90	1021.7	1051.1	1020.6	1020.0	1019.2
91	1021.7	1021.2	1020.6	1020.1	1019.5
92 93	1021.8	1051.3	1020.8	1020.1	1019.7
94 95	1022.0	1021.5	1020.9	1020.4	1010.0
96	1022.3	1021.6	1021.1	1020.2	1020.0
97 98	1022.7	1021.8	1021.1	1020.6	I020.1
99	1022.4	1021.9	1021.3	1020.8	1020.2
100	1022.2	1022.0	1021.4	1020.9	1020-3

True per Cent.	26°	27°	28°	29 °	30°
1	1000.2	1000.6	1000.6	1000.7	1000.8
2	1000.6	1000.6	1000.7	1000.7	1000.8
3	1000.6	1000.6	1000.7	1000.7	1000.8
4	1000.7	1000.7	1000.8	1000.8	1000.9
5	1000.7	1000.8	1000.8	1000.9	1000.9
6	1000.8	1000.0	1000.0	1001.0	1001.0
7	1000.0	1001.0	1001.0	1001.1	1001.1
8	1001.1	1001.1	1001.5	1001.3	1001.5
9	1001.5	1001.3	1001.3	1001.4	1001.4
10	1001'4	1001.4	1001.2	1001.5	1001.5
				u Rillia	
11 12	1001.6	1001.6	1001.6	1001.7	1001.7
13	1001.8	1001.8	1001.9	1001.9	1001.9
14	1002'1	1002.1	1002.1	1002.1	1002.1
15	1002.9	1002.9	1002.3	1002.2	1002 3
	1002 0	1002 0		and the	
16	1002.9	1002.9	1002.8	1002.8	1002.8
17	1003.3	1003.5	1003.5	1003.1	1003.1
18	1003.6	1003.2	1003.2	1003.4	1003.4
19	1003.9	1003.9	1003.8	1003.8	1003.7
20	1004.4	1004.3	1004.3	1004.5	1004.1
21	1004.8	1004.7	1004.7	1004.6	1004.5
22	1005.3	1005.2	1005.1	1005.0	1004.9
23	1005.6	1005.5	1005.4	1005.3	1005.2
24	1006.0	1005.8	1005.7	1005.5	1005.4
25	1006.3	1006.5	1006.0	1005.9	1005.7
					The state of

True per Cent.	26°	27 °	28°	29°	30°
26 27 28 29	1006·7 1007·1 1008·0	1006·6 1006·9 1007·8	1006·4 1006·8 1007·2 1007·6	1006·3 1007·0 1007·4	1006·1 1006·4 1006·8
30 31 32 33	1008.5	1008.3	1008.0 1008.4 1008.1	1007·8 1008·2 1008·5 1008·9	1007·6 1008·0 1008·6
34 35 36 37	1010.0 1010.4 1010.8	1010.2	1009·5 1010·2 1010·6	1000.3 1000.0 1000.1	1009.0 1009.2
38 39 40 41	1011.8 1012.0 1012.1 1012.4	1011.8 1011.8 1012.0	1011.4 1011.4 1011.4	1011.3 1011.1 1010.8	1010.8 1010.8
42 43 44 45	1012.8 1013.1 1013.1	1012·3 1012·8 1013·0	1012.4 1013.4 1015.4	1011.6 1011.8 1012.1 1012.2	1011.2 1011.4 1011.9
46 47 48 49	1013.6 1013.8 1014.0	1013·2 1013·4 1013·6 1013·7	1013.3 1013.1 1013.1	1012.5 1012.8 1012.9	1012.1 1012.3 1013.4
50	1014.3	1013.9	1013.2	1013.1	1012.7

F	H					
1	True per Cent.	26 °	270	28°	29 0	30°
	Frue	20	210	28	29	90°
	-			The state of		
ı	51	1014.5	1014.1	1013.6	1013.5	1012.8
ı	52	1014.7	1014.3	1013.9	1013.2	1013.1
I	53	1014.9	1014.2	1014.0	1013.6	1013.5
ı	54	1012.0	1014.6	1014.1	1013.7	1013.3
ı	55	1012.1	1014.7	1014.5	1013.8	1013.4
ı	56	1015.2	1014.8	1014.3	1013.9	1013.5
ı	57	1015.4	1014.9	1014.5	1014.0	1013.6
I	58	1015.5	1015.1	1014.6	1014.2	1013.8
ı	59	1015.6	1015.1	1014.6	1014'2	1013.8
	60	1015.7	1015.3	1014.8	10144	1013.9
-	61	1015.9	1015.4	1015.0	1014.5	1014.1
	62	1015.9	1015.5	1015.1	1014.6	1014.2
1	63	1016.1	1015.6	1015.2	1014.7	1014.3
	64	1016.1	1015.7	1015.2	1014.8	1014.3
	65	1016.2	1015.8	1015.3	1014.9	1014.4
1	66	1016-4	1016.0	1015.5	1015.1	1014.6
	67	1016.6	1016.2	1015.7	1015.3	1014.8
	68	1016.6	1016.2	1015.7	1012.3	1014.8
ı	69	1016.6	1016.2	1015.7	1012.3	1014.8
ı	70	1016.8	1016.3	1015.9	1015.4	1014.9
1	71	1016.9	1016.4	1016.0		
1	72	1017.1	1016.6	1019.1	1015.6	1012.0
	73	1017.1	1016.6	1016.5	1015.7	1015.2
	74	1017.2	1016.7	1016.3	1015.8	1012.3
	75	1017.3	1016.8	1016.4	1015.0	1015.4
-		/ 3			, 9	, 4

True per Cent.	20	3°	27	70	28	30	29	0	30	) 0
76	101	7.4	101	6.9	101	6.4	101	5.9	101	5.4
77	101	7.5	101	7.0		6.5	IOI		101	5.5
78		7.7	101	7.2	A COLUMN TO THE PARTY OF THE PA	6.6	IOI		101	01
79		7.8		7.3		6.8	IOI		101	-
80	101	7.9	101	7.4	101	6.9	101	6.4	101	5.9
81	101	8.1	IOI	7.6	101	7.0	101	6.5	101	6.0
82	101	8.3	101	7.7	101	7.2	101	6.6	101	
83	101	8.4	101	7.8	101	7.3	101	6.8	101	6.3
84		8.5		8.0	101	7.4	IOI		101	- "
85	101	8.5	101	8.0	101	7.4	IOI	6.9	101	6.4
86	101	8.5	101	8.0	IOI	7.4	101	6.9	101	6.4
87	101	8.6	101	8.1	IOI	7.5	101	7.0	101	
88	101	8.8	101	8.5		7.7	IOI	7.1	101	
89	101	8.9	IOI	8.3	IOI	7.8	IOI	7.2	101	6.7
90	101	9.0	101	8.4	IOI	7.9	101	7.3	IOI	6.8
91	101	9.0	101	8.4	IOI	7.9	101	7.3	101	6.8
92		9.1		8.5		8.0	101	, ,	101	6.9
93		9.2	101	8.6	IOI	8.1	IOI	7.5	101	
94	101	9.3		8.7	IOI		IOI	7.6	101	7.1
95	101	9.3	IOI	8.8	IOI	8.3	101	7.7	101	7.1
96	101	9.4		8.9	101	8.3	101	7.8	IOI	7.2
97		9.5	IOI	8.9		8.4	IOI		101	7.2
98	IOI	9.6	101		101		101	7.9	101	7.3
99	101	9.6	101	9.1	101		101	8.0	101	
100	101	9.7	101	9·1	101	8.6	101	8.0	101	7.4

					ER LAND
True per Cent.	31°	32°	33°	34 °	35°
1 2 3 4 5 6 7 8	1000·8 1000·8 1000·9 1000·9 1001·0 1001·1 1001·2	1000·8 1000·9 1000·9 1000·9 1001·0 1001·1 1001·2	1000.3 1001.0 1001.0 1001.0	1000.3 1001.0 1001.0 1001.1 1001.2	1000·9 1000·9 1001·0 1001·0 1001·1 1001·2 1001·3
9 10 11 12 13 14 15	1001.4 1001.5 1001.9 1002.1 1002.3 1002.5	1001·4 1001·5 1001·7 1001·9 1002·1 1002·5	1001.4 1001.6 1001.8 1002.0 1002.2	1001·4 1001·5 1001·8 1002·0 1002·1 1002·4	1001.4 1001.5 1001.8 1002.0 1002.1 1002.4
16 17 18 19 20	1002.8 1003.0 1003.6 1004.0	1003.0 1003.2 1003.2	1002.4 1002.7 1003.2 1003.5 1003.8	1002.6 1002.9 1003.1 1003.4	1002.6 1002.8 1003.0 1003.6
21 22 23 24 25	1004.4 1004.8 1005.1 1005.6	1004.3 1004.6 1004.9	1004.2 1004.5 1005.0 1005.3	1004·1 1004·8 1004·8	1004.0 1004.2 1004.2 1004.7

True per Cent.	31°	32°	33 °	34°	35°
26 27 28 29 30	1005.9 1006.2 1006.6 1007.0	1005.7 1006.0 1006.4 1006.8	1005.6 1005.9 1006.2 1006.5	1005·4 1005·7 1006·0 1006·6	1005.2 1005.5 1005.8 1006.1 1006.4
31 32 33 34	1007·4 1007·8 1008·1 1008·3 1008·7	1007·1 1007·8 1008·1 1008·4	1007·8 1008·2	1007.0	1006·8 1007·1 1007·6
35 36 37 38 39	1009.0 1009.3 1010.2 1010.3	1008·7 1009·0 1009·8 1009·8	1008·8 1009·5 1009·6	1008·2 1008·5 1009·1 1009·2	1007·9 1008·2 1008·8 1008·9
40 41 42 43 44	1010.2 1010.8 1011.0	1010.1 1010.2 1010.3	1010.8 1010.8 1000.8	1009.4 1009.6 1010.0 1010.2	1009·1 1009·2 1009·4 1009·6 1009·8
45 46 47 48	1011.2	1011.2	1010.8 1010.8 1011.1	1010·4 1010·5 1010·7 1010·8	1010.4 1010.3 1010.0
49   50	1012.3	1011.4	1011.4	1011.0	1010.2

True per Cent.	31°	32°	33°	34 °	35°
51	1012.4	1012.0	1011.6	1011.3	1010.8
52	1012.7	1012.2	1011.8	1011.3	1010.0
53	1012.8	1012.4	1011.0	1011.2	1011.1
54	1012.9	1012.5	1012.0	1011.6	1011.2
55	1013.0	1012.5	1012.1	1011.6	1011.2
56	1013.1	1012.6	1012.2	1011:7	1011.3
57	1013.5	1012.7	1012.3	1011.8	1011.4
58	1013.3	1012.9	1012.4	1012.0	1011.2
59	1013.4	1012.9	1012.5	1012.0	1011.6
60	1013.2	1013.0	1012.6	1012.1	1011.7
61	1013.6	1013.2	1012.7	1012.3	1011.8
62	1013.7	1013.3	1012.8	1012.4	1011.0
63	1013.8	1013.4	1012.9	1012.5	1012.0
64	1013.8	1013.4	1012.9	1012.5	1012.0
65	1013.9	1013.2	1013.0	1012.6	1012.1
66	1014.1	1013.6	1013.2	1012.7	1012.2
67	1014.3	1013.8	1013.4	1012.9	1012.4
68	1014.3	1013.8	1013.4	1012.9	1012.4
69	1014.3	1013.8	1013.4	1012.9	1012.4
70	1014.4	1013.9	1013.5	1013.0	1012.5
71	1014.5	1014.0	1013.6	1013.1	1012.6
72	1014.6	1014.1	1013.7	1013.5	1012.7
73	1014.7	1014.2	1013.7	1013.2	1012.7
74	1014.8	1014.3	1013.8	1013.3	1012.8
75	1014.9	1014.4	1013.8	1013.3	1012.8
-					

	True per Cent.	31	0	32	0	38	} 0	34	. 0	35	0
	76	101	4.0	101	4.4	101	3'9	101	3.4	101	2.0
ı	77	101		IOI	4.2		4.0	IOI	3.5	101	3.0
	78	IOI		101		101		-0.0	3.6	101	-
	79 80	IOI		IOI		101			3.7	IOI	-
	1,313	101	1	101	49	101	4.3			IOI	
	81	101		101			4.4		3.9	101	
	82 83	101		101		IOI		101	4.0	IOI	0 0
	84	IOI	-	101	-		4.7	The Contract of the	4.2	IOI	-
	85	IOI		IOI	-		4.8		4.5	IOI	0 , 1
	86					TO S	4.8		4.2	IOI	"
	87	IOI		101	- 0		4.9	1	4.3	101	
ı	88	IOI		IOI			5.0		4.4	IOI	
	89	101	6.1	101			5.0		4.5	IOI	-
	90	101	6.2	101		101	2.1	101	4.6	IOI	4.0
	91	101	6.3	101	5.7	101	5.2	101	4.6	101	4.1
I	92	IOI		101		IOI	-		4.7	IOI	4.1
I	93	101		IOI		101	- 0		4.8	101	The same of
	94	IOI		101		101			4.9	101	
	95	101	0.2	101	0.0	101	5.4	101	4.9	101	4.3
	96	IOI	100	101		101		IOI	-	101	
	97	IOI	100	IOI		101	-	IOI	-	IOI	
	98	101	-	101		IOI		101		101	
	100	IOI	-	101		101		101	-	101	11
		9.00			3		, /				

1154					
True per	36°	37°	38°	39 0	40°
T.					
1	1000.9	1000.0	1000.0	1000.9	1000.0
2	1000.9	1000.0	1000.9	1000.9	1000.9
3	1001.0	1001.0	1001.0	1001.0	1001.0
4	1001.0	1001.0	1001.0	1001.0	1001.0
5	1001.0	1001.0	1001.0	1001.0	1001.0
6	1001.1	1001.1	1001.1	1001.1	1001.1
7	1001.2	1001.2	1001.1	1001.1	1001.1
8	1001.3	1001.3	1001.2	1001.3	1001.3
9	1001.4	1001.4	1001.3	1001.3	1001.3
10	1001.2	1001.2	1001.4	1001.4	1001.4
11	1001.6	1001.6	1001.5	1001.5	1001.5
12	1001.8	1001.7	1001,4	1001.6	1001.6
13	1002.0	1001.0	1001.9	1001.8	1001.8
14	1002.1	1002.0	1002.0	1001.9	1001.0
15	1002.3	1002.2	1002.5	1002.1	1002.0
16	1002.5	1002.4	1002.4	1002.3	1002.2
17	1002.7	1002.6	1002.6	1002.5	1002.4
18	1002.9	1002.8	1002.8	1002.7	1002.6
19	1003.2	1003.1	1003.0	1002.9	1002.8
20	1003.2	1003.4	1003.3	1003.5	1003.1
21	1003.9	1003.7	1003.6	1003.4	1003.3
22	1004.1	1004.0	1003.8	1003.7	1003.6
23	1004.3	1004.5	1004.0	1003.9	1003.7
24	1004.2	1004.4	1004.5	1004.1	1004.0
25	1004.8	1004.6	1004.2	1004.3	1004.1

100					
True per Cent.	36°	37°	38°	39°	40°
26	1005.0	1004.8	1004.7	1004.5	1004.3
27	1005.3	1005.1	1005.0	1004.8	1004.6
28	1005.6	1005.4	1005.2	1005.0	1004.8
29	1005.9	1005.7	1005.4	1005.2	1005.0
30	1006.2	1006.0	1005.7	1005.5	1005.3
31	1006.5	1006.3	1006.0	1005.8	1005.2
32	1006.8	1006.5	1006.3	1006.0	1005.7
33	1007.0	1006.8	1006.5	1006.3	1006.0
34	1007.3	1007.0	1006.8	1006.5	1006.2
35	1007.6	1007.3	1007.0	1006.7	1006.4
36					
37	1007.9	1007.6	1007.2	1006.9	1006.6
38		1007.9	1007.5	1007.2	1006.9
39	1008.5	1008.1	1007.8	1007.4	1007.1
11	1008.6	1008.2	1007.9	1007.5	1007.2
40	1008.7	1008.4	1008.0	1007.7	1007.3
41	1008.9	1008.5	1008.2	1007.8	1007.5
42	1009.0	1008.7	1008.3	1008.0	1007.6
43	1009.2	1008.9	1008.5	1008.2	1007.8
44	1009.4	1009.0	1008.7	1008.3	1007.9
45	1009.6	1009.2	1008.8	1008.4	1008.0
46	1009.7	1009.3	1009.0	1008.6	1008-2
47	1009.9	1009.5	1009.1	1008.7	1008.3
48	1010.0	1009.6	1009.2	1008.8	1008.4
49	1010.1	1009.7	1009.3	1008.9	1008.5
50	1010.3	1009.8	1009.4	1009.0	1008.6

per it.	000	0=0	200	200	100				
True pe Cent.	36°	37°	38°	39°	40°				
51	1010.4	1010.0	1009.5	1000.1	1008.7				
52	1010.2	1010.1	1009.6	1009.2	1008.8				
53	1010.7	1010.5	1009.8	1009.3	1008.9				
54	1010.8	1010.3	1000.0	1009.4	1000.0				
55	1010.8	1010.4	1000.0	1009.2	1000.1				
56	1010.0	1010.4	1010.0	1009.5	1009.1				
57	1011.0	1010.2	1010.1	1009.6	1009.2				
58	IOII.I	1010.6	1010.5	1009.7	1009.3				
59	IOII.I	1010.7	1010.5	1009.8	1009.3				
60	1011.5	1010.8	1010.3	1000.0	1009.4				
61	1011.3	1010.9	1010.4	1010.0	1009.5				
62	1011.4	1011.0	1010.2	1010.1	1009.6				
63	1011.5	1011.0	1010.6	1010.1	1009.6				
64	1011.2	IOII.I	1010.6	1010.5	1009.7				
65	1011.6	IOII.I	1010.7	1010.5	1009.7				
66	1011.7	1011.3	1010.8	1010.3	1009.8				
67	1011.9	1011.4	1010.9	1010.4	1009.9				
68	1011.9	1011.4	1011.0	1010.2	1010.0				
69	1011.9	1011.4	1011.0	1010.2	1010.0				
70	1012.0	1011.2	IOII.I	1010.6	1010.1				
71	1012.1	1011.6	1011.1	1010.6	1010.1				
72	1012.2	1011.7	1011.5	1010.7	1010.5				
73	1012.2	1011.7	1011.5	1010.7	1010.5				
74	1012.3	1011.8	1011.3	1010.8	1010.3				
75	1012.3	1011.8	1011.3	1010.8	1010.3				
	I 97								

True per	The second	3	6	0	3	7	0	3	8	0	3	9	0	4	0°
87	6	10	12	.4	10	I	1.9	10	I	1.4	10	IC	.9	10	10.4
7	7	10			10	1	2.0	10		-				10	10.2
7	- 1	10					2 · I			-	10				10.2
		10		-	-		2.2				10				10.6
8	U	10	I 2	.8	10	1	2.3	10	1 2	7	10	11	. 2	10	10.7
8	1	10	I 2	.9			2.4				10		0	100	10.8
		10	-					10		-					10.8
8	- 1	10	3				2.5				IO				10.9
8		10	0					10							11.0
8	0	10	13	. 2	32			10	1:					10	0.11
8		10						10						-	11.0
		10			10	I	2.7	10	I	2.2	10	II	.6		II.I
		10			10	I	2.8	10	I	2.2	IC				II.I
8 9		10			The same of		2.9	10		2.4			- '-		11.3
		10	1	20	100							E			
9	- (	10	-	-	100 V 100		3.0	1			10		-		11.3
9		10					3.0			2.4			.9	1 4 9	11:3
9		IO					3.1			2.5	IC		0	1.1.3	11.4
9		10	-		and the same of	200	3.2			2.6	IO			12600	11.2
				•	1	1								1	
9			0	-	IO	100	-			2.7	10				11.6
9 9	1	IO	-	.0	10	100	3.4			2:7	1	. 1	.3	FRENCH	11.7
9	- 1				10					8.5			3	C0.14	11.7
					10					2.9	10		-		11.8
			1	4											

True per Cent.	141°	42°	43°	44 °	45°
1	1000.9	1000.9	1000.8	1000.8	1000.8
$\begin{vmatrix} 2 \\ 3 \end{vmatrix}$	1001.0	1001.0	1000.0	1000.0	1000.0
4	1001.0	1001.0	1000.0	1000.0	1000.9
5	1001.0	1001.0	1000.9	1000.9	1000.9
6	1001.1	1001.0	1001.0	1000.9	1000.0
7	1001.1	1001.1	1001.0	1001.0	1001.0
8	1001.2	1001.2	1001.1	1001.1	1001.1
9	1001.3	1001-2	1001.2	1001.1	1001.1
10	1001.4	1001.3	1001.3	1001.5	1001.3
11	1001.5	1001-4	1001.4	1001.3	1001.3
12	1001.6	1601.5	1001.5	1001.4	1901.4
13	1001.7	1001.7	1001.6	1001.6	1001.2
14	1001.8	1001.8	1001.7	1001.7	1001.9
15	1001.9	1001.9	1001.8	1001.8	1001.7
16	1002.1	1002.0	1002.0	1001.9	1001.8
17	1002.3	1002.3	1002.1	1002.0	1001.0
18	1002.2	1002.4	1002.3	1002.2	1002.1
19 20	1002.7	1002.8	1002.4	1002.3	1002.7
	1003.0	1002.0	1002.7	1002.5	
21	1003.5	1003.0	1002.9	1002.7	1002.6
22    23	1003.4	1003.3	1003.1	1003.0	1002.8
24	1003.2	1003.4	1003.7	1003.1	1003.1
25	1003.0	1003.7	1003.4	1003.4	1003.5
	- 3.9	37	-55,0	-0034	

## 410-450

True per Cent.	41	0	42	0	48	30	44	0	148	5°
26	100	4.1	100	3.9	100	3.7	100	3.5	100	3.3
27	IOC	4.4	100	1.2	100	3.9	100	-	100	0 0
28	IQC	4.6	100	4.4	100	4.1	100		100	3.7
29	IOC	4.8	100	4.5	100	4.3	100	4.0	100	3.8
30	100	5.0	100	1.8	100	4.5	100	4.3	100	4.0
31	100	5.2	100	.0	100	4.7	100	4.5	100	4.2
32	100	100 0 3	100	400	100		100		100	-
33	100	5.7	100	.4	100	5.1	100		100	
34	100	5.9	100	:.6	100	5.3	100	5.0	100	
35	100	6.1	100	8.	100	5.2	100	5.2	100	4.9
36	100	6.2	1000	5.0	100	5.6	100	5.2	100	5.0
37	100		1006		100	-	100	- 0	100	-
38	100		1000	300	100		100		100	- 1
39	100		1006		100		100	-	100	
40	100	- 1	1006		100	15.3	100	-	100	-
41	100	7.1	1006	5.8	100	6.1	100		100	
42	100		1006		100		100		100	
43	100	,	1007	-	100		100	1.5	100	
44	100		1007	5000	100		100		100	
45	100		1007		100	. 1	100		100	Section and
46	100	7.8		1	100	7.0	100		100	6.2
47	100	,	1007	. 1	100		100		100	- 1
48	100		1007		100		100		100	- 01
49	100	-	1007		100		100		100	- 0
50	100		1007	0	100		100		100	
		10				1 3		7		,

_					
True per Cent.	41°	42°	43°	44°	45°
51	1008-3	1007.8	1007.4	1006.9	1006.5
52	1008.4	1008.0	1007.5	1007.1	1006.7
53	1008.5	1008.0	1007.6	1007.1	1006.7
54	1008.6	1008-1	1007.7	1007.2	1006.8
55	1008.6	1008-2	1007.7	1007.3	1006.8
56	1008.7	1008-2	1007.8	1007.3	1006.9
57	1008.7	1008.3	1007.8	1007.4	1006.9
58	1008.8	1008.4	1007.9	1007.5	1007.0
59	1008.8	1008.4	1007.9	1007.5	1007.0
60	1008.9	1008.5	1008.0	1007.6	1007.1
61	1000.0	1008.6	1008.1	1007.7	1007.2
62	1000.1	1008.6	1008.3	1007.7	1007.2
63	1000.1	1008.7	1008:2	1007.8	1007.3
64	1009.2	1008.7	1008.3	1007.8	1007.3
65	1009.2	1008.7	1008.3	1007.8	1007.3
66		1008.8	7008.4	8- 19	
67	1009.3	1008.9	1008.4	1008.0	1007.4
68.	1009.2	1000.0	1008.5	1008.0	1007.5
69	1000.2	1000.0	1008.5	1008.0	1007.5
70	1000.6	1000.1	1008.6	1008.1	1007.6
				3000	
$\begin{bmatrix} 71 \\ 72 \end{bmatrix}$	1009.6	1000.1	1008.6	1008.1	1007.6
73	1009.7	1009.2	1008.7	1008.2	1007.7
74	1009.7	1009.2	1008.7	1008.3	1007.7
75	1009.8	1000.3	1008.8	1008.3	1007.8
	1009 0	10093	10000	10003	100/0

# 41°-45°

True per Cent.	41°	42°	43°	44 °	45°
76	1009.9	1009.4	1008.8	1008.3	1007.8
77	1010.0	1009.5	1008.9	1008.4	1007.9
78	1010.0	1009.5	1008.9	1008.4	1007.9
79	1010.1	1009.6	1000.0	1008.5	1008.0
80	1010.5	1009.6	1000.1	1008.2	1008.0
81	1010.3	1009.7	1009.2	1008.6	1008.1
82	1010.3	1009.7	1009.2	1008.6	1008.1
83	1010.4	1009.8	1009.3	1008.7	1008.2
84	1010.5	1009.9	1009.4	1008.8	1008.3
85	1010.5	1009.9	1009.4	1008.8	1008.3
86	1010.2	1009.9	1009.4	1008.8	1008.3
87	1010.2	1010.0	1009.4	1008.9	1008.3
88		1010.0	1009.5	1008.9	1008.4
89	1010.6	1010.1	1009.5	1009.0	1008.4
90	1010.7	1010.5	1009.6	1009.1	1008.5
91	1010.7	1010.5	1009.6	1000.1	1008.5
92	1010.8	1010.5	1009.7	1000.1	1008.6
93	1010.8	1010.3	1009.7	1009.2	1008.6
94	1010.9	1010.3	1009.8	1009.2	1008.6
95	1010.9	1010.4	1009.8	1009.3	1008.7
96	1011.0	1010.4	1009.9	1009.3	1008.7
97	1011.0	1010.2	1000.0	1000.4	1008.8
98	IOII.I	1010,2	1010.0	1000.4	1008.8
99	1011.1	1010.2	1010.0	1009.4	1008.8
100	1011.3	1010.6	1010.1	1009.5	1008.9

1					
True per Cent.	46°	47°	48°	49°	50°
1	1000.8	1000.8	1000.7	1000.7	1000.7
2	1000.0	1000.8	1000.8	1000.7	1000.7
3	1000.0	1000.8	1000.8	1000.7	1000.7
4	1000.0	1000.8	1000.8	1000.7	1000.7
5	1000.9	1000.8	1000.8	1000.7	1000.7
6	1000.0	1000.8	1000.8	1000.7	1000.7
7	1001.0	1000.0	1000.0	1000.8	1000.8
8	1001.0	1001.0	1000.0	1000.0	1000.8
9	1001.0	1001.0	1000.0	1000.0	1000.8
10	1001.1	1001.1	1001.0	1001.0	1000.0
11					
12	1001.5	1001.1	1001.1	1001.1	1001.0
13	1001.3	1001.3	1001.3	1001.5	1001.1
14	1001.4	1001.4	1001.3	1001.5	1001.1
15	1001.6	1001.2	1001.4	1001.3	1001.5
16	1001.7	1001.6	1001.2	1001.4	1001.3
17	1001.8	1001.7	1001.6	1001.5	1001.4
18 19	1002.0	1001.9	1001.8	1001.6	1001.5
20	1002.1	1002.0	1001.9	1001.8	1001.4
	1002 3	1002 1	1002 0	1001 8	1001 /
21	1002.4	1002.3	10021	1002.0	1001.8
22	1002.6	1002.2	1005.3	1002.2	1002.0
23	1002-7	1002.2	1002.4	1002.2	1002.0
24	1002.9	1002.7	1002.2	1002.3	1002.1
25	1003.0	1002.8	1002.6	1002.4	1002.2

True per Cent.	46°	47°	48°	49°	50°
26	1003.1	1002.9	1002:7	1002.5	1002.3
27	1003.3	1003.1	1002.8	1002.6	1002.4
28	1003.2	1003.2	1003.0	1002.7	1002.5
29	1003.6	1003.3	1003.1	1002.8	1002.6
30	1003.7	1003.5	1003.2	1003.0	1002.7
31	1003.9	1003.7	1003.4	1003.2	1002.9
32	1004.1	1003.8	1003.6	1003.3	1003.0
33	1004.5	1003.9	1003.7	1003.4	1003.1
34	1004.4	1004.1	1003.8	1003.2	1003.5
35	1004.6	1004.3	1003.9	1003.6	1003.3
36	1004:7	1004:4	1004:0	1002:7	Company Like
37	1004.7	1004.4	1004.0	1003.8	1003.4
38	1002.0	1004.7	1004.3	1004.0	1003.6
39	1002.1	1004.8	1004.4	1004.1	1003.7
40	1005.2	1004.8	1004.5	1004.1	1003.7
47		TABLE BAR			To Marie
41 42	1005.3	1004.9	1004.6	1004.2	1003.8
43	1005.4	1005.0	1004.7	1004.3	1003.9
44	1005.6	1005.1	1004.8	1004.4	1004.0
45	1005.7	1002.3	1004.0	1004.4	1004.1
1					3
46	1005.8	1002.4	1004.9	A tree before the later of	1004.1
47	1005.9	1005.2	1005.0	1004-6	1004.5
48	1005.9	1005.5	1005.1	1004-7	1004.3
49   50	1006.0	1005.6	1005.1	1004.7	1004.3
30	1009.1	1005.6	1005.5	1004.7	1004.3
-					

				1000	
True per Cent.	46 °	47°	48°	49°	50°
51	1006.1	1005.7	1005:2	1004.8	1004.4
52	1006.3	1005.8	1005.4	1004.9	1004.5
53	1006.3	1005.8	1005.4	1004.9	1004.5
54	1006.4	1005.9	1005.5	1005.0	1004.6
55	1006.4	1005.9	1005.5	1005.0	1004.6
56	1006.4	1006.0	1005.5	1005.1	1004.6
57	1006.4	1006.0	1005.5	1005.1	1004.6
58	1006.5	1006.1	1005.6	1005-2	1004:7
59	1006.5	1006.1	1005.6	1005.2	1004.7
60	1006.6	1006.5	1005.7	1005.3	1004.8
61	1006.7	1006.2	1005.8	1005-3	1004.8
62	1006.7	1006.2	1005.8	1005.3	1004.8
63	1006.8	1006.3	1005.9	1005.4	1004.9
64	1006.8	1006.3	1005.9	1005.4	1004.9
65	1006.8	1006.3	1005.9	1005.4	1004.9
66	1006.9	1006.4	1006.0	1005.5	1005.0
67	1007.0	1006.5	1006.0	1005.5	1005.0
68	1007.0	1006.2	1006.0	1005.5	1005.0
69	1007.0	1006.2	1006.1	1005.6	1005.1
70	1007.1	1006.6	1006.1	1005.6	1002.1
71	1007.1	1006.6	1006.1	1005.6	1005.1
72	1007.2	1006.7	1006.2	1005.6	1005.1
73	1007.2	1006.7	1006.2	1005.7	1005.2
74	1007.3	1006.8	1006.5	1005.7	1005.2
75	1007.3	1006.8	1006.5	1005.7	1005.2
1					

True per Cent.	46°	47°	48°	49°	50°
76	1007.3	1006.8	1006.3	1005.8	1005.3
77	1007.4	1006.9	1006.3	1005.8	
78		1006.9	1006.3	1005.8	1005.3
79	1	1007.0	1006.4	1005.9	1005.4
80	1007.5	1007.0	1006.4	1005.9	1005:4
81	1007.6	1007.0	1006.5	1005.9	1005.4
82	1007.6	1007.1	1006.5	1006.0	1005.5
83	1007.7	1007.1	1006.6	1006.0	1005.5
84	1007.7	1007.2	1006.6	1006.1	1005.2
85	1007.7	1007.2	1006.6	1006.1	1005.2
86	1007.8	1007.2	1006.7	1006.1	1005.6
87	1007.8	1007.2	1006.7	1006.1	1005.6
88		1007.3	1006.7	1006.2	1005.6
89	1007.8	1007.3	1006.7	1006.3	1005.6
90	1007.9	1007.4	1006.8	1006.3	1005.7
91	1007.9	1007.4	1006.8	1006.3	1005.7
92	1008.0	1007.4	1006.9	1006.3	1005.7
93	1008.0	1007.4	1006.9	1006.3	1005.7
94	1008.0	1007.5	1006.9	1006.4	1005.8
95	1008.1	1007.5	1007.0	1006.4	1005.8
96	1008.1	1007.5	1007.0	1006-4	1005.8
97	1008.2	1007.6	1007.1	1006.5	1005.9
98	1008.2	1007.6	1007.1	1006.5	1005.9
99	1008.2	1007.6	1007.1	1006.5	1005.9
100	1008.3	1007.7	1007.2	1006.6	1006.0

True per Cent.	51°	52°	53°	54°	55°
1	1000.6	1000.6	1000.5	1000.5	1000.4
2	1000.6	1000.6	1000.5	1000.5	1000.4
3	1000.6	1000.6	1000.2	1000.5	1000.4
4	1000.6	1000.6	1000.2	1000.2	1000.4
5	1000.6	1000.6	1000.2	1000.2	1000.4
6	1000.6	1000.6	1000.2	1000.5	10004
7	1000.7	1000.6	1000.6	1000.5	1000.4
8	1000.7	1000.7	1000.6	1000.6	1000.5
9	1000.7	1000.7	1000.6	1000.6	1000.2
10	1000.8	1000.7	1000.7	1000.6	1000.2
111	1000.8	1000.7	1000.7	1000.6	1000.5
12	1000.9	1000.8	1000.7	1000.6	1000.5
13	1001.0	1000.9	1000.8	1000.7	1000.6
14	1001.0	1000.9	1000.8	1000.7	1000.6
15	1001.1	1001.0	1000.8	1000.7	1000.6
16	1001.2	1001.1	1000.0	1000.8	1000.7
17	1001.3	1.1001	1001.0	1000.8	1000.7
18	1001.4	1001.2	1001.1	1000.9	1000.8
19	1001.4	1001.3	1001.1	1001.0	1000.8
20	1001.2	1001.4	1001.3	1001.1	1000.9
21	1001.6	1001.5	1001.3	1001.2	1001.0
22	1001.8	1001.6	1001.4	1001.5	1001.0
23	1001.8	1001.6	1001.2		1001.1
24	1001.9	1001.7	1001.5	1001.3	1001.1
25	1002.0	1001.8	1001.2	1001.3	1001.1

True per Cent.	51°	52°	53°	54°	55°
26	1002.1	1001.9	1001.6	1001.4	1001.2
27	1002.2	1001.9	1001.7	1001.4	1001.3
28	1002.3	1002.0	1001.8	1001.2	1001.3
29	1002.3	1002.1	1001.8	1001.6	1001.3
30	1002.4	1002.2	1001.9	1001.7	1001.4
31	1002.6	1002.3	1002.0	1001.7	1001.4
32	1002.7	1002.4	1002.1	1001.8	1001.5
33	1002.8	1002.5	1002.1	1001.8	1001.5
34	1002.9	1002.6	1002.2	1001.9	1001.6
35	1003.0	1002.7	1002.3	1002.0	1001.7
36	1003.1	1002.7	1002.4	1002.0	1001.7
37	1003.2	1002.8	1002.2	1002.1	1001.8
38	1003.3	1002.9	1002.6	1002.5	1001.9
39	1003.3	1003.0	1002.6	1005.3	1001.9
40	1003.3	1003.0	1002.6	1005.3	1001.9
41	1003.4	1003.0	1002.7	1002.3	1001.9
42	1003.5	1003.1	1002.8	1002.4	1002.0
43	1003.6	1003.5	1002.8	1002.4	1002.0
44	1003.6	1003.5	1002.8	1002.4	1002.0
45	1003.7	1003.3	1002.9	1002.5	1002.1
46	1003.7	1003.3	1002.9	1002.5	1002.1
47	1003.8	1003.4	1002.9	1002.2	1002.1
48	1003.9	1003.4	1003.0	1002.2	1002.1
49	1003.9	1003.2	1003.0	1002.6	1002.5
50	1003.9	1003.2	1003.0	1002.6	1002.2

True per Cent.	51°	52°	53°	54°	55°
51	1004.0	1003.5	1003.1	1002.6	1002.2
52	1004.0	1003.6	1003.1	1002.7	1002.2
53	1004.1	1003.6	1003.5	1002.7	1002.3
54	1004.1	1003.7	1003.5	1002.8	1002.3
55	1004.1	1003.7	1003.5	1002.8	1002.3
56	1004.1	1003.7	1003.2	1002.8	1002.3
57	1004.1	1003.7	1003.2	1002.8	1002.3
58	1004.2	1003.8	1003.3	1002.9	1002.4
59	1004.2	1003.8	1003.3	1002.9	1002.4
60	1004.3	1003.8	1003.4	1002.9	1002.4
61	1004.3	1003.8	1003.4	1002.9	1002.4
62	1004.3	1003.8	1003.4	1002.9	1002.4
63	1004.4	1003.9	1003.4	1002.9	1002.4
64	1004.4	1003.9	1003.5	1003.0	1002.5
65	1004.4	1003.9	1003.2	1003.0	1002.5
66	1004.5	1004.0	1003.5	1003.0	1002.5
67	1004.5	1004.0	1003.5	1003.0	1002.5
68	1004.5	1004.0	1003.5	1003.0	1002.5
69	1004.6	1004.1	1003.2	1003.0	1002.5
70	1004.6	1004.1	1003.6	1003.1	1002.6
71	1004.6	1004.1	1003.6	1003.1	1002.6
72	1004.6	1004.1	1003.6	1003.1	1002.6
73	1004.7	1004.2	1003.6	1003.1	1002.6
74	1004.7	1004.2	1003.6	1003.1	1002.6
75	1004.7	1004.2	1003.6	1003.1	1002.6

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True per Cent.	51°	52°	53°	54 °	55°
76	1004.8	1004.2	1003.7	1003.1	1002.6
77	1004.8	1004.3	1003.7	1003.5	1002.7
78	1004.8	1004.3	1003.7	1003.2	1002.7
79	1004.9	1004.3	1003.8	1003.2	1002.7
80	1004.9	1004.3	1003.8	1003.2	1002.7
81	1004.9	1004.3	1003.8	1003.2	1002.7
82	1004.9	1004.3	1003.8	1003.3	1002.7
83	1005.0	1004.4	1003.9	1003.3	1002.8
84	1005.0	1004.4	1003.9	1003.3	1002.8
85	1005.0	1004.4	1003.9	1003.3	1002.8
86	1005.0	1004.5	1003.9	1003.4	1002.8
87	1005.0	1004.5	1003.9	1003.4	1002.8
88	1005.0	1004.5	1003.9	1003.4	1002.8
89	1005.0	1004.5	1003.9	1003.4	1002.8
90	1005.1	1004.5	1004.0	1003.4	1002.8
91	1005.1	1004.6	1004.0	1003.5	1002.9
92	1005.1	1004.6	1004.0	1003.5	1002.9
93		1004.6	1004.0	1003.2	1002.9
94	1005.2	1004.6	1004.1	1003.2	1002.9
95	1005.2	1004.6	1004.1	1003.2	1002.9
96	1005.2	1004.6	1004.1	1003.5	1002.9
97	1005.3	1004.7	1004.1	1003.2	1002.9
98	1005.3	1004.7	1004.5	1003.6	1003.0
99	1005.3	1004.7	1004.5	1003.6	1003.0
100	1005.4	1004.8	1004.3	1003.6	1003.0

VOLUMES.

True per	56°	57°	58°	59°	60°
-	1000.3	1000.2	1000.2	1000.1	1000.0
BI .	1000.3	1000.5	1000.5	1000.1	1000.0
41 -	1000.3	1000.5	1000.5	1000.1	1000.0
1 4		1000.2	1000.2	1000.1	1000.0
1	1000.3	1000.5	1000.5	1000.1	1000.0
1	1000.3	1000.5	1000.5	1000.1	1000.0
	3	1000.5	1000.5	1000.1	1000.0
1 8	3	1000.3	1000.5	1000.1	1000.0
1		1000.3	1000.2	1000.1	1000.0
10		1000.3	1000.2	1000.1	100000
111	1000.4	100012	1000.5	1000.1	1000.0
12	Andrew Charles	1000.3	1000 2	1000.1	1000.0
13		1000.4	1000.5	1000.1	1000.0
14		1000.4	1000.5	1000.1	1000.0
15		1000.4	1000.5	1000.I	1000.0
			X TY	1	No.
16		1000.4	1000.3	1000.1	1000.0
17	1	1000.4	1000.3	1000.1	1000.0
18	100	1000.2	1000.3	1000.1	1000.0
19		1000.2	1000.3	1000.1	1000.0
120	1000.7	1000.2	1000.4	1000.3	1000.0
21	0	1000.6	1000.4	1000.2	1000.0
22	1000	1000.6	1000.4	1000.3	1000.0
22		1000.4	1000.4	1000.5	1000.0
24		1000.4	1000.4	1000.5	1000.0
25	1000.9	1000.7	1000.4	1000.3	1000.0

True per Cent.	56°	57°	58°	59°	60°
26	1001.0	1000.7	1000.2	1000.3	1000.0
27	1001.0	1000.7	1000.2	1000.5	1000.0
28	1001.0	1000.8	1000.5	1000.3	1000.0
29	1001.0	1000.8	1000.2	1000.3	1000.0
30	1001.1	1000.8	1000.6	1000.3	1000.0
31	1001.1	1000.8	1000.6	1000.3	1000.0
32	1001.3	1000.0	1000.6	1000.3	1000.0
33	1001.3	1000.9	1000.6	1000.3	1000.0
34	1001.3	1001.0	1000.6	1000.3	1000.0
35	1001.4	1001.0	1000.7	1000.3	1000.0
36	1001.4	1001.0	1000.7	1000.3	1000.0
37	1001.4	1001.1	1000.7	1000.4	1000.0
38	1001.5	1001.1	1000.8	1000.4	1000.0
39	1001.2	1001.1	1000.8	1000.4	1000.0
40	1001.2	1001.1	1000.8	1000.4	1000.0
41	1001.5	1001.1	1000.8	1000.4	1000.0
42	1001.6	1001.2	1000.8	1000.4	1000.0
43	1001.6	1001.2	1000.8	1000.4	1000.0
44	1001.6	1001.2	1000.8	1000.4	1000.0
45	1001.7	1001.3	1000.8	1000.4	1000.0
46	1001.7	1001.3	1000.8	1000.4	1000.0
47	1001.7	1001.3	1000.8	1000.4	1000.0
48	1001.7	1001.3	1000.8	1000.4	1000.0
49	1001.8	1001.3	1000.9	1000.4	1000.0
50	1001.8	1001.3	1000.9	1000.4	1000.0

VOLUMES.

True per Cent.	56°	57°	58°	59 °	60°
51 52	1001.8	1001.3	1000.9	1000.4	1000.0
53	1001.8	1001.3	1000.0	1000.4	1000.0
54	1001.8	1001.4	1000.0	1000.2	1000.0
55	1001.8	1001.4	1000.9	1000.2	1000.0
56	1001.8	1001.4	1000.9	1000.5	1000.0
57	1001.8	1001.4	1000.0	1000.2	1000.0
58	1001.9	1001.4	1001.0	1000.2	1000.0
59	1001.9	1001.4	1001.0	1000.2	1000.0
60	1001.9	1001.4	1001.0	1000.2	1000.0
61	1001.9	1001.4	1001.0	1000.5	1000.0
62	1001.9	1001.4	1001.0	1000.5	1000.0
63	1001.9	1001.4	1001.0	1000.2	1000.0
64	1002.0	1001.2	1001.0	1000.2	1000.0
65	1002.0	1001.2	1001.0	1000.2	1000.0
66	1002.0	1001.2	1001.0	1000.2	1000.0
67	1002.0	1001.2	1001.0	1000.2	1000.0
68		1001.2	1001.0	1000.2	1000.0
69		1001.2	The second second second	1000.2	1000.0
70	1002.1	1001.6	1001.0	1000.2	1000.0
71	1002.1	1001.6	1001.0	1000.5	1000.0
72		1001.6	no r no in	1000.5	1000.0
73	P	1001.6	10 m 10 1 10 10 10 10 10 10 10 10 10 10 10 1	1000.5	1000.0
74		1001.6	NAME OF BRIDE	1000.2	1000.0
75	1002.1	1001.6	1001.0	1000.2	1000.0

1	4 1					
There no	Cent.	56°	57°	58°	59°	60°
	76	1002.1	1001.6	1001.0	1000.2	1000.0
	77	1002.2	1001.6	1001.1	1000.2	1000.0
	78	1002.2	1001.6	1001.1	1000.5	1000.0
	79	1002.2	1001.6	1001.1	1000.5	1000.0
	80	1002.2	1001.6	1001.1	1000.2	1000.0
	81	1002.2	1001.6	1001.1	1000.5	1000.0
	82	1002.2	1001.6	1001.1	1000.2	1000.0
1	83	1002.2	1001-7	1001.1	1000.6	100000
-	84	1002.2	1001.7	1001.1	1000.6	1000.0
	85	1002.2	1001.7	1001.1	1000.6	1000.0
l	86	1002.2	1001.7	1001.1	1000.6	1000.0
1	87	A TOTAL SECTION AND A	1001.7		1000.6	1000.0
1	88	1002.2	1001.7		1000.6	1000.0
1	89	1002.2	1001.7		1000.6	1000.0
	90	1002.2	1001.7	1001.1	1000.6	1000.0
1	91	1002.3	1001.7	1001.2	1000.6	1000.0
1	92	1002.3	1001.7	1001.3	1000.6	100000
1	93	1002.3	1001.7	1001.2	1000.6	1000.0
	94	1002.3	1001.7	1001.3	1000.6	1000.0
1	95	1002.3	1001.7	1001.3	1000.6	1000.0
-	96	1002.3	1001.7	1001.3	1000.6	1000.0
	97	1002.3	1001.7	1001.3	1000.6	1000.0
-	98	1002.4	1001.8	1001.2	1000.6	1000.0
	99	1002.4	1001.8	1001.3	1000.6	1000.0
1	100	1002.4	1001.8	1001.3	1000.6	1000.0
1		The state of the state of				

True per Cent.	61°	62°	63°	64°	65°			
1	999.9	999.8	999.7	999.6	999.5			
2	999.9	999.8	999.7	999.6	999.5			
3	999.9	999.8	999.7	999.6	999.5			
4	999.9	999.8	999.7	999.6	999.5			
5	999.9	999.8	999.7	999.6	999.5			
6		999.8	000:7	999.6	999.5			
7	999.9	999.8	999'7	999.6	999.5			
8	999.9	999.8	999.7	999.5	999.4			
9	999.9	999.8	999.6	999.5	999.4			
10	999.9	999.8	999.6	999.5	999.4			
	999 9			999 3	777 +			
11	999.9	999.8	999.6	999.5	999.4			
12	999.9	999.7	999.6	999.5	999.4			
13	999.9	999.7	999.6	999.5	999.3			
14	999.9	999.7	999.6	999.4	999.3			
15	999.8	999.7	999.5	999.4	999.2			
16	999.8	999.7	999.5	999.4	999.2			
17	999.8	999.7	999.5	999.3	999.2			
18	999.8	999.6	999.5	999.3	999.1			
19	999.8	999.6	999.5	999.3	999.1			
20	999.8	999.6	999.4	999.2	999.0			
21	5 7 300							
$\frac{21}{22}$	999.8	999.6	999.4	999.2	998.9			
23	999.8	999.6	999.3	999.1	998.9			
24	999.8	999.5	999.3	999.I	998.8			
25	999.8		999.3	999.0	998.8			
20	999 0	999.5	999.3	9990	9900			
	115							

True per Cent.	61°	62°	63°	64°	65°
26 27 28 29	999·8 999·7 999·7	999.5 999.5 999.4	999.3 999.3 999.3	998.9 998.9 999.0	998·8 998·7 998·7 998·6
30 31 32 33 34	999'7 999'7 999'7 999'7	999°4 999°4 999°4 999°4	333.0 333.0 333.1 333.1 333.1	998·8 998·8 998·7 998·7	998·6 998·5 998·5 998·4 998·3
35 36 37 38 39	999.7 999.6 999.6 999.6	999.3 999.3 999.3	998.9 998.9 998.9	998·6 998·6 998·5 998·5	998·3 998·2 998·1 998·1
40 41 42 43	999.6 999.6 999.6	999°2 999°2 999°2 999°2	998·9 998·8 998·8 998·8	998·5 998·4 998·4 998·4	998·0 998·0 998·0
44 45 46 47	999·6 999·6 999·6	999.1 999.1 999.1	998·8 998·7 998·7 998·7	998·4 998·3 998·3	997.9 997.9 997.9
48 49 50	999·6 999·6	999.1 999.1 999.1	998·7 998·7 998·7	998·3 998·2 998·3	997·8 997·8 997·8

					- Lander-20
True per Cent.	61°	62°	63°	64°	65°
51 52 53 54 55	999.5 999.5 999.5 999.5	999.1 999.1 999.1 999.1 999.1	998·7 998·6 998·6 998·6	998·2 998·2 998·1 998·1	997·8 997·7 997·7 997·7
56 57 58 59 60	999.2 999.2 999.2 999.2	999.0 999.0 999.1 999.1	998·6 998·6 998·6 998·6	998.1 998.1 998.1 998.1	997·6 997·6 997·6 997·6
61 62 63 64 65	999.5 999.5 999.5	363.0 363.0 363.0 363.0 363.0	998·5 998·5 998·5 998·5	998.0 998.0 998.0	997·6 997·5 997·5 997·5
66 67 68 69 70	999.5 999.5 999.5 999.5	999.0 999.0 999.0 999.0 999.0	998·5 998·5 998·5 998·5	998·0 998·0 997·9 997·9	997.5 997.5 997.4 997.4 997.4
71 72 73 74 75	999.5 999.5 999.5 999.5	998.9 998.9 998.9 999.0	998·4 998·4 998·4 998·4	997'9 997'9 997'9 997'9	997.4 997.4 997.4 997.4 997.3

True per Cent.	61°	62°	63°	64°	65°
76 77 78 79 80	999.5 999.5 999.5 999.5	998.9 998.9 998.9 998.9	998·4 998·4 998·4 998·4	997.8 997.8 997.8 997.8	997.3 997.3 997.3 997.3
81 82 83 84 85	999.5 999.4 999.4 999.4	998.9 998.9 998.9 998.9	998·4 998·3 998·3 998·3	997·8 997·8 997·8 997·8 997·8	997.3 997.3 997.2 997.2
86 87 88 89 90	999'4 999'4 999'4 999'4	998.9 998.9 998.9 998.9	998·3 998·3 998·3 998·3	997·8 997·7 997·7 997·7	997·2 997·2 997·1 997·1
91 92 93 94 95	999'4 999'4 999'4 999'4	998·8 998·8 998·8 998·8	998·3 998·3 998·3 998·3	997.7 997.7 997.7 997.7 997.7	997·1 997·1 997·1 997·1
96 97 98 99 100	999'4 999'4 999'4 999'4	998·8 998·8 998·8 998·8	998·2 998·2 998·2 998·2	997.7 997.6 997.6 997.6 997.6	997·I 997·I 997·O 997·O

True per Cént.	66°	67°	68°	69°	70°
1 2 3 4 5	999'4 999'4 999'4 999'4	999.3 999.3 999.3 999.3	999·2 999·2 999·2	333.0 333.0 333.0 333.1 333.1	999.0 998.9 998.9
6 7 8 9 10	999.4 999.3 999.3 999.3	999.2 999.1 999.1	333.0 333.0 333.0 333.1 333.1	998.9 998.9 998.9 999.0	998·9 998·8 998·8 998·8 998·7
11 12 13 14 15	999.5 999.5 999.5	338.3 339.0 339.0 339.1 339.1	999.0 998.9 998.8 998.7	998·8 998·7 998·7 998·6	998·7 998·6 998·6 998·5 998·4
16 17 18 19 20	998.8 998.9 998.0 999.0	998·9 998·8 998·7 998·6	998·7 998·6 998·6 998·5 998·4	998·5 998·5 998·4 998·2	998·4 998·3 998·2 998·1 998·0
21 22 23 24 25	998·7 998·7 998·6 998·6 998·6	998·5 998·4 998·4 998·3 998·3	998·3 998·2 998·1 998·1	998·1 998·0 997·9 997·8 997·8	997·8 997·7 997·7 997·6 997·6

True per Cent.	66°	67°	68°	69°	70°
26 27 28 29 30	998·5 998·4 998·3 998·3	998·2 998·1 998·0 998·0	998·0 997·9 997·8 997·7	997.7 997.6 997.5 997.4 997.4	997.5 997.4 997.3 997.2 997.1
31 32 33 34 35	998·1 998·0 998·0	997.9 997.8 997.7 997.7	997·6 997·5 997·4 997·3 997·3	997.3 997.2 997.0 996.9	997.0 996.7 996.7 996.6
36 37 38 39 40	997.9 997.8 997.7 997.7	997.5 997.5 997.4 997.3 997.3	997·2 997·1 997·0 996·9	996.8	996.3
41 42 43 44 45	997.6 997.6 997.5 997.5	997.1 997.1 997.1 997.1	996·8 996·8 996·7 996·7	996·4 996·3 996·3 996·2	996·1 995·8 995·8
46 47 48 49 50	997.4 997.4 997.4 997.4 997.3	997.0 996.9 996.9 996.9	996.5	996·1 996·1 996·0	995.7 995.6 995.6 995.5

True per Cent.	66°	67°	68°	69°	70°
51 52	997·3 997·3	996.8	996.4	995.9	995°5 995°4
53 54 55	997·2 997·2 997·2	996·8 996·7 996·7		995·8 995·8	995°4 995°3 995°3
56 57 58	997°1 997°1	996·7 996·6	996.2	995.7 995.7 995.7	995·3 995·2 995·2
-59   60   61	997·I 997·I	996·6 996·6	996.1	995·6 995·6	995.1
62 63 64 65	997.0	996.5		995.5	995.0
66 67	997.0	996.5	996.0	995°4 995°4	
68 69 70	996.9 996.9	996.4	995.9	995.3 995.3	994·8 994·8
71 72 73	996·9 996·8	996.3	995.8		994·8 994·7 994·7
74 75	996.8	996.3			994·7 994·7

L

True per Cent.	66°	67°	68°	69°	70°
76 77 78 79 80	996·8 996·8 996·7 996·7	996·3 996·2 996·2 996·2	995.7 995.7 995.6 995.6	995·1 995·1 995·1	994·6 994·6 994·6 994·5
81 82 83 84 85	996·7 996·7 996·7 996·6	996·1 996·1 996·1	995.6 995.6 995.5 995.5	995.0 995.0 995.0 995.0	994·5 994·4 994·4 994·4
86 87 88 89 90	996.6 996.6 996.6	996.0 996.0 996.0	995.5 995.5 995.4 995.4	994·9 994·9 994·8 994·8	994·4 994·3 994·3 994·3
91 92 93 94 95	996·5 996·5 996·5	995.9 995.9 995.9	995.4 995.3 995.3 995.3	994·8 994·8 994·8 994·7 994·7	994·2 994·2 994·2 994·1
96 97 98 99 100	996·5 996·5 996·4	995.9 995.9 995.8 995.8	995°3 995°3 995°3	994·7 994·7	994.0 994.1 994.1 994.1

True per Cent.	71°	72°	73°	74°	75°
1 2 3 4 5	998·8 998·8 998·8 998·8	998·7 998·7 998·6 998·6 998·6	998·6 998·5 998·5 998·5	998·4 998·4 998·4 998·3	998·3 998·3 998·2 998·2
6 7 8 9 10	998·7 998·7 998·6 998·6	998·6 998·5 998·5 998·4	998·4 998·4 998·3 998·3	998·3 998·2 998·1 998·1	998·2 998·1 998·0 998·0
11 12 13 14 15	998·5 998·4 998·3 998·2	998·3 998·3 998·1	998·2 998·1 998·0 997·9	998·0 997·9 997·8 997·7	997.9 997.8 997.7 997.6 997.5
16 17 18 19 20	998·2 998·1 998·0 997·9 997·7	998·0 997·9 997·6 997·5	997·8 997·7 997·6 997·4 997·3	997.6 997.5 997.4 997.2 997.0	997.4 997.3 997.0 996.8
21 22 23 24 25	997.6 997.5 997.4 997.3 997.3	997.4 997.2 997.1 997.1	997·1 997·0 996·9 996·8	996·9 996·6 996·6 996·5	996·6 996·5 996·3 996·2

True per Cent.	71°	72°	73°	74°	75°
26	997.2	996.9	996.6	996.4	996.1
27	997.1	996.8	996.5	996.2	995.9
28	997.0	996.7	996.4	996.1	995.8
29	996.8	996.5	996.2	995.9	995.6
30	996.7	996.4	996.1	995.8	995.5
31	996.6	996.3	996.0	995.7	995.4
32	996.5	996.2	995.9	995.5	995.2
33	996.4	996.1	995.7	995.4	995.1
34	996.3	996.0	995.6	995.3	994.9
35	996.2	995.8	995.5	995.1	994.8
36	996.1	995.7	995.4	995.0	994.6
37	996.0	995.6	995.5	994.8	994.4
38	995.8	995.4	995.0	994.7	994.3
39	995.8	995.4	995.0	994.6	994.2
40	995.7	995.3	994.9	994.5	994.1
41	995.6	995.2	994.8	994.4	994.0
42	995.6	995.5	994.7	994.4	993.9
43	995.2	992.1	994.6	994.5	993.8
44	995.4	995.0	994.5	994.1	993.7
45	995.4	994.9	994.5	994.1	993.6
46					
47	995.3	994.8	994.4	994.0	993.5
48	995.5	994.7	994.3	993.8	993.5
49	992.I	9947	994.3	993.8	993.3
50	992.1	994.6	994.5	993.7	993.3
	,,,	,,,	,,,	7731	

True per Cent.	71°	72°	73°	74°	75°
51 52 53 54 55 56 57	995.0 995.0 994.9 994.8 994.8 994.8	994·6 994·5 994·4 994·3 994·3	994.0 994.0 993.9 993.8 993.8	993·6 993·6 993·5 993·4 993·3 993·3	993.2 993.1 993.0 992.9 992.9 992.8 992.8
58 59 60 61 62 63 64 65	994.7 994.6 994.6 994.5 994.5 994.5	994·2 994·1 994·0 994·0 994·0 994·0	993.7 993.6 993.6 993.5 993.5 993.5	993·2 993·1 993·0 993·0 993·0 993·0	992.8 992.7 992.7 992.6 992.5 992.5 992.5
66 67 68 69 70	994·4 994·3 994·3 994·3	993.9 993.8 993.8 993.8 993.7	993.4 993.3 993.2 993.2	992·9 992·8 992·7 992·7	992·1 992·2 992·2 992·2
71 72 73 74 75	994·1 994·1 994·1 994·1	993·7 993·6 993·6 993·6	993.1	992.6 992.6 992.5 992.5	992·I 992·O 992·O

True per Cent.	71°	72°	73°	74°	75°
76	994.1	993.5	993.0	992.5	991.9
77	994.1	993.5	993.0	992.4	991.9
78	994.0	993.5	992.9	992.4	991.8
79	994.0	993.4	992.9	992.3	991.8
80	994.0	993.4	992.8	992.3	991.7
81	993.9	993.4	992.8	992.3	991.7
82	993.9	993.4	992.8	992.2	991.7
83	993.9	993.3	992.8	992.2	991.6
84	993.8	993.3	992.7	992.2	991.6
85	993.8	993.2	992.7	992.1	991.5
86	993.8	993.2	992.6	992.1	991.5
87	993.7	993.2	992.6	992.0	991.4
88	993.7	993.2	992.6	992.0	991.4
89	993.7	993.1	992.5	992.0	991.4
90	993:7	993.1	992.5	991.9	991.4
91	993.6	993.1	992.5	991.9	991.3
92	993.6	993.0	992.4	991.9	991.3
93	993.6	993.0	992.4	991.8	991.2
94	993.6	993.0	992.4	991.8	991.2
95	993.5	992.9	992.3	991.8	991.2
96	993.5	992.9	992.3	991:7	991.2
97	993.5	992.9	992.3	991.7	991.1
98	993.5	992.9	992.2	991.6	991.0
99	993.4	992.8	992.2	991.6	991.0
100	993.4	992.8	992.2	991.6	991.0

True per Cent.	76°	770	78°	79°	80°
1 2 3 4 5 6	998.0 998.1 998.1 998.1 998.1	998·0 998·0 997·9 997·9 997·8	997.8 997.8 997.8 997.7 997.7	997.7 997.6 997.6 997.6 997.6	997.5 997.5 997.5 997.4 997.4
7 8 9 10	997·9 997·8 997·8	997·8 997·6 997·6	997·6 997·5 997·4	997.4 997.4 997.3 997.2	997·3 997·1 997·1
11 12 13 14 15	997.7 997.6 997.5 997.4 997.3	997.5 997.4 997.3 997.1	997.3 997.1 997.0 996.9	997.1 997.0 996.9 996.8	997.0 996.8 996.7 996.6 996.5
16 17 18 19 20	997·2 997·1 996·9 996·8 996·6	997.0 996.8 996.7 996.3	996·8 996·5 996·1	996·5 996·3 996·1 995·8	996·3 996·1 995·8 995·6
21 22 23 24 25	996·4 996·2 996·0 995·9	996·1 995·9 995·8 995·7 995·7	995°9 995°6 995°6 995°5 995°4	995.6 995.4 995.3 995.2 995.1	995·3 995·0 994·9 994·8

True per Cent.	76°	77°	78°	79°	80°
26 27 28 29 30	995·8 995·6 995·3 995·3	995.5 995.2 995.0 994.9	995·2 995·1 994·9 994·7 994·5	994.9 994.8 994.6 994.4 994.2	994·6 994·3 994·1 993·9
31 32 33 34 35	995.0 994.9 994.5 994.4	994.7 994.5 994.4 994.2 994.0	994.4 994.2 994.0 993.8 993.7	994.0 993.7 993.5 993.3	993.7 993.3 993.1 992.9
36 37 38 39 40	994·2 994·1 993·9 993·8 993·7	993.9 993.7 993.4 993.3	993.2 993.0 993.1 993.0	993·1 992·9 992·6 992·5	992·7 992·3 992·3 992·1
41 42 43 44 45	993.6 993.3 993.3 993.2	993·1 992·9 992·8 992·7	992.8 - 992.7 - 992.4 - 992.4	992.4 991.9 991.2	992.0 991.4 991.4
46 47 48 49 50	993.1 993.0 992.9 993.0	992·7 992·6 992·4 992·4	992.0 991.9 991.9	991·8 991·7 991·6 991·5 991·4	990.9 991.0 991.3 991.3

True per Cent.	76°	77°	78 °	79°	80°
51	992.7	992.2	991.8	991.3	990.9
52 53	992.6	992.1	991.7	991.1	990.7
54	992.5	992.0	991.5	991.0	990.5
55	992.4	991.9	991.4	990.9	990.5
56	992.3	991.9	991.4	990.9	990.4
57	992.3	991.8	991.3		990.3
58	992.3	991.8	991.3		990.3
59	992.2	991.7	991.5	990.7	990.5
60	992.2	991.7	991.2	990.7	990.2
61	992.1	991.6	991.1	990.6	990.I
62	992.0	991.2	991.0	990.2	990.0
63	992.0	991.5		990.4	989.9
64	991.9			990.4	989.9
65	991.9	991.4	990.9	990.4	989.9
66	991.8	991.3	990.8	990.3	989.8
67	991.7	991.2	990.7	990.2	989.6
68	991.7		990.6	990.I	989.6
69	991.6		990.6	990.0	989.5
70	991.6	991.1	990.5	990.0	989.5
71	991.6	991.0	990.5	990.0	989.4
72	991.5		990.5		989.4
73	991.2				989.3
74	991.4				989.3
75	991.4	990.9	990.3	989.8	989.2
1					

frue per Cent.	76°	77°	78°	79°	80°
76	991.4	990.8	990.3	989.7	989.2
77	991.3	990.8	990.2	989.7	989.1
78	991.3	990.7	990.2	989.6	989.1
79	991.2	990.7	990.1	989.6	989.0
80	991.5	990.6	990.1	989.5	988.9
81	991.1	990.6	990.0	989.5	988.9
82	991.1	990.5	990.0	989.4	988.9
83	991.1	990.5	989.9	989.4	988.8
84	991.0	990.5	989.9	989.3	988.8
85	991.0	990.4	989.8	989.3	988.7
86	990.9	990.3	989.8	989.2	988.6
87	990.9	990.3	989.7	989.1	988.6
88	990.8	990.3	989.7	989.1	988.5
89	990.8	990.5	989.6	989.0	988.5
90	990.8	990.5	989.6	989.0	988.4
91	990.7	990.1	989.5	988.9	988.3
92	990.7	990.1	989.5	988.9	
93	990.6	990.0	989.4	988.8	988-2
94	990.6	990.0	989.4	988.8	988.2
95	990.6	990.0	989.4	988.8	988.2
96	990.6	990.0	989.3	988.7	988-1
97	990.5	989.9	989.2	988.6	988.0
98	990.4	989.8	989.2	988.6	988.0
99	990.4	989.8	989.1	988.5	987.9
100	990.4	989.8	989.1	988.5	987.9

True per Cent.	81°	82°	83°	84°	85°
1	997.3	997.2	997.0	996.8	996.7
2	997.3	997.1	997.0	996.8	996.6
3	997.3	997.1	996.9	996.7	996.6
4	997.2	997.1	996.9	996.7	996.5
5	997.2	997.0	996.8	996.7	996.5
6	997.1	997.0	996.8	996.6	996.4
7	997.1	996.9	996.7	996.5	996.3
8	997.0	996.8	996.6	996.5	996.3
9	996.9	996.7	996.6	996.4	996.2
10	996.9	996.7	996.5	996.3	996.1
11	996.8	996.6	996.4	996.2	996.0
12	996.6	996.4	996.2	996.0	995.8
13	996.5	996.3	996.1	995.9	995.7
14	996.4	996.2	996.0	995.7	995.5
15	996.3	996.0	995.8	995.6	995.4
16	996.1	995.9	995.6	995.4	995.2
17	996.0	995.7	995.5	995.3	995.0
18	995.8	995.6	995'3	995.1	994.9
19	995.6	995.3	995·I	994.8	994.6
20	995.3	995.1	994.8	994.5	994.3
21	995.1	994.8	994.5	994.2	994.0
22	994.8	994.5	994.2	994.0	993.7
23	994.7	994.4	994.2	993.9	993.6
24	994.6	994.3	994.0	993.8	993.5
25	994.5	994.2	993.9	993.6	993.4

True per Cent.	81°	82°	83°	84 °	85°
26 27 28 29 30	994·3 994·2 993·7 993·6	994.0 993.8 993.6 993.4 993.4	993.7 993.5 993.3 993.1 993.1	993.4 993.2 993.0 992.6	993·1 992·5 992·5 992·5
31 32 33 34 35	993.4 993.2 993.0 992.8 992.6	993.0 992.8 992.6 992.4 992.4	992.7 992.5 992.2 992.0 991.8	992·4 992·1 991·7 991·4	991·3 991·3 991·3
36 37 38 39 40	992·4 992·1 991·8 991·7	992.0 991.7 991.4 991.4	990.9 991.0 991.3 991.9	991·2 990·6 990·6	990.0 990.1 990.2 990.8
41 42 43 44 45	991.5 991.4 991.5	991.0 990.8 990.6	990.2 990.3 990.2	990·3 990·1 989·7 989·7	989.9 989.7 989.3 989.3
46 47 48 49 50	990·9 990·8 990·7 990·6 990·5	990.4 990.3 990.3	990.0 989.8 989.7 989.6 989.5	989°5 989°4 989°3 989°1	989·1 988·9 988·8 988·7 988·6

True per Cent.	81°	82°	83°	84°	85°
51 52 53 54 55	990.0 990.3 990.3	989·9 989·8 989·7 989·5	989·4 989·3 989·1 989·0	989.0 988.8 988.7 988.6 988.5	988·5 988·3 988·2 988·1 988·0
56 57 58 59 60	989·9 989·8 989·8 989·7 989·6	989.4 989.3 989.3 989.2	988·9 988·9 988·8 988·7 988·6	988·4 988·4 988·3 988·2 988·1	987·9 987·9 987·8 987·7 987·6
61 62 63 64 65	989·3 989·4 989·4 989·4	989.0 988.9 988.9 988.9	988·5 988·4 988·3 988·3	988·0 987·9 987·9 987·8 987·8	987.5 987.4 987.3 987.3 987.2
66 67 68 69 70	989·2 989·0 989·0 988·9	988·7 988·6 988·5 988·4 988·4	988·2 988·0 988·0 987·9 987·8	987·7 987·5 987·4 987·3 987·3	987·1 987·0 986·9 986·8
71 72 73 74 75	988·9 988·8 988·8 988·7 988·7	988·3 988·2 988·2 988·1	987·8 987·7 987·7 987·6 987·6	987·3 987·1 987·1	986·7 986·7 986·6 986·5

M

True per Cent.	82°	83°	84°	85°
76 988.6 77 988.6 78 988.5 79 988.4 80 988.4	988·1 988·0 987·9 987·9	987.5 987.4 987.4 987.3	987.0 986.9 986.8 986.8 986.7	986·4 986·3 986·2 986·1
81 988·3 82 988·3 83 988·2 84 988·2	987·8 987·7 987·7 987·6	987·2 987·2 987·2 987·1 987·1	986·6 986·5 986·5	986·0 986·0 985·9
85 988·1 86 988·0 87 988·0 88 987·9 89 987·9	987.5 987.5 987.4 987.3 987.3	987·0 986·9 986·8 986·8	986·4 986·3 986·2 986·2 986·1	985.8 985.7 985.6 985.6 985.5
90 987·8 91 987·8 92 987·7 93 987·6	987·2 987·2 987·1 987·0	986·6 986·6 986·4	986·0 985·9 985·8	985.4 985.4 985.3 985.2
94 987.6 95 987.6 96 987.5 97 987.4 98 987.4	987.0 987.0 986.9 986.8 986.8	986·4 986·3 986·2 989·1	985·8 985·7 985·7 985·6 985·5	985·2 985·1 985·0 984·9
99 987.3	986.7	986.0	985.4	984·8 984·8

True per	86°	87°	88°	89 °	90°
1 2	996.5	996.3	996.0	995.8	995.7
3	996.4	996.2	996.0	995.8	995.7
4	996.3	996.1	995'9	995'7	995.5
5	996.3	996.1	995.9	995.7	995.5
6 7	996.2	996.0	995.8	995.6	995.4
8	996·1	995.8	995·7 995·6	995.5	995.3
9	996.0	995.8	995.2	995.3	995.1
10	995.9	995.7	995.4	995.2	995.0
11	995.7	995.5	995.3	995.1	994.9
12 13	995.6	995.4	995.1	994.9	994'7
14	995.4	995·1	995.0	994.8	994·5 994·4
15	995.1	994.9	994.6	994.4	994.5
16	994.9	994.7	994.5	994.2	994.0
17	994.8	994.5	994.3	994.0	993.8
18 19	994.6	994.3	994.1	993.8	993.6
20	994.3	994.1	993.4	993.2	993.2
21	993.7	993.4	993.1	992.8	992.5
22	993.4	993.1	993.1	992.5	992.2
23	993.3	993.0	992.7	992.4	992.1
24   25	993.2	992.8	992.5	992.2	991.9
40	993.0	992.7	992.4	992.1	991.8

True per Cent.	86 00	87°	88°	890	90°
26 27 28 29 30	992·8 992·6 992·1 991·9	992.3 992.0 991.8	992·2 991·4 991·4	991.4 991.4 991.4	991.6 991.3 991.8
31 32 33 54 35	991.7 991.4 991.2 990.9 990.7	990.3 990.8 991.1 991.3	991.0 990.7 990.4 990.2 989.9	990.6 990.3 990.1 989.8	990·3 990·0 989·4 989·4
36 37 38 39 40	990·4 990·1 989·8 989·7 989·6	990.0 989.7 989.4 989.3 989.2	989.6 989.3 988.9 988.8	989·2 988·9 988·6 988·5 988·4	988·8 988·5 988·2 988·1 988·0
41 42 43 44 45	989·4 989·2 989·0 988·9 988·8	989.0 988.8 988.6 988.4 988.3	988·6 988·4 988·0 987·9	988·2 987·9 987·7 987·5 987·4	987·7 987·5 987·0 987·0
46 47 48 49 50	988·6 988·5 988·4 988·2 988·1	988·2 988·0 987·9 987·8 987·6	987·7 987·5 987·4 987·3 987·2	987·2 987·1 987·0 986·8 986·7	986·8 986·6 986·5 986·4 986·2

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True per Cent.	86°	87°	88°	89 °	90°
51 52 53 54 55	988·0 987·9 987·6 987·6	987.5 987.4 987.3 987.1	987·1 986·9 986·8 986·6 986·5	986.6 986.4 986.3 986.0	986·1 985·9 985·6 985·6
56 57 58 59 60	987·4 987·4 987·3 987·2 987·1	986·9 986·9 986·8 986·7 986·6	986·4 986·4 986·3 986·2 986·1	985.9 985.8 985.6 985.6	985.4 985.3 985.1 985.0
61 62 63 64 65	987.0 986.8 986.8 986.8	986·5 986·3 986·3 986·2	985.9 985.8 985.8 985.7	985.4 985.3 985.2 985.2	984·9 984·8 984·7 984·7 984·6
66 67 68 69 70	986·6 986·4 986·3 986·3	986·1 985·9 985·8 985·7	985.5 985.4 985.3 985.2 985.1	985.0 984.8 984.7 984.6 984.6	984·5 984·3 984·1 984·1
71 72 73 74 75	986·2 986·0 986·0 985·9	985-6 985-5 985-5 985-4 985-3	985·1 985·0 984·9 984·8 984·8	984·5 984·4 984·4 984·3 984·2	984.0 983.9 983.8 983.7 983.7

True per Cent.	86°	87°	88°	89°	90°
76 77 78 79 80	985.6	985·3 985·1 985·1	984·7 984·6 984·6 984·5	984·2 984·1 983·9 983·8	983.6 983.5 983.4 983.3
81 82 83 84	985.5 985.5 985.4 985.4 985.3	985.0 984.9 984.8 984.8	984·4 984·3 984·3 984·3	983·8 983·7 983·7 983·6	983·3 983·2 983·1 983·0
85 86 87 88 89	985·2 985·0 985·0 984·9	984·6 984·5 984·5 984·4 984·3	984·1 983·9 983·9 983·8 983·7	983.5 983.4 983.3 983.2 983.2	982·9 982·8 982·7 982·6 982·6
90 91 92 93	984·8 984·8 984·7 984·6	984·3 984·1 984·0	983·7 983·6 983·5 983·4	983·1 983·0 982·9	982·5 982·4 982·3 982·2
94 95 96 97	984·6 984·5 984·5	984.0 983.9 983.9	983·4 983·3 983·2	982·8 982·7 982·6 982·5	982·2 982·1 982·0 981·9
98 99 100	984·2 984·2 984·2	983·7 983·6 983·6	982·9 982·9	982·3 982·3	981·8 981·7 981·8

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True per Cent.	91°	92°	93°	94 °	95°
1	995.5	995-3	995.1	994.9	994.7
2	995.4	995.2	995.0	994.8	994.6
3	995.4	995.2	994.9	994.7	994.5
4	995.3	995.1	994.9	994.7	994.4
5	995.3	995.0	994.8	994.6	994.4
6	995.2	994-9	994.7	994.5	994'3
7	995.1	994.8	994.6	994.4	994.2
8	995.0	994.8	994.5	994.3	994.1
9	994.9	994.7	994.4	994.2	994.0
10	994.8	994.5	994.3	994.1	993.8
11	994.6	994.4	994.1	993.9	993.7
12	994.4	994-2	993.9	993.7	993.5
13	994.3	994.0	993.8	993.5	993.3
14	994.1	993.8	993.6	993.3	993.1
15	993.9	993.6	993.4	993.1	992.9
16	993.7	993.4	993.2	992.9	9926
17	993.5	993.2	993.0	992.7	992.4
18	993.3	993.0	992.7	992.5	992.2
19	993.0	992.7	992.4	992.1	991.8
20	992.6	992.3	992.0	991.7	991.4
21	992.2	991.9	991.6	991.3	991.0
22	991.8	991.5	991.2	990.9	990.6
23	991.7	991.4	991.1	990.8	990.5
24	991.6	991.3	991.0	990.7	990.3
25	991.5	991.2	990.9	990.5	990.2

True per Cent.	91 °	92°	930	94 °	95°
26 27 28 29 30	991·2 991·0 990·7 990·4 990·2	990·6 990·4 990·1 989·8	990.6 990.3 990.0 989.7 989.5	990·3 990·0 989·4 989·4	989·9 989·7 989·3 989·0 988·8
31 32 33 34 35	989.9 989.6 989.3 989.0 988.7	989·5 989·2 988·9 988·6	989·2 988·9 988·6 988·2 987·9	988·8 988·5 988·2 987·9 987·5	988·5 988·2 987·8 987·5 987·2
36 37 38 39 40	988·4 988·1 987·8 987·6 987·5	988·0 987·7 987·3 987·2 987·1	987.6 987.3 986.9 986.8	987·2 986·9 986·4 986·4	986·8 986·5 986·1 985·9 985·8
41 42 43 44 45	987·3 987·1 986·8 986·6	986.9 986.4 986.1 986.0	986·4 986·2 985·9 985·7 985·6	986.0 985.7 985.2 985.2	985.6 985.3 985.0 984.8 984.7
46 47 48 49 50	986·3 986·1 986·0 985·9 985·7	985·9 985·7 985·5 985·4 985·4	985.4 985.2 984.9 984.9	984·9 984·7 984·6 984·5 984·3	984·5 984·3 984·0 983·8

True per Cent.	91°	92°	93°	94°	95°
51 52 53 54 55	985.6 985.4 985.3 985.1	985·1 984·9 984·6 984·6	984·6 984·5 984·1 983·9	984·2 983·8 983·6 983·4	983·7 983·5 983·1 982·9
56 57 58 59 60	984·9 984·8 984·6 984·6	984·4 984·3 984·2 984·1 984·0	983.9 983.8 983.7 983.6 983.5	983·3 983·3 983·1 983·0	982·8 982·8 982·7 982·6 982·5
61 62 63 64 65	984·4 984·2 984·2 984·2	983·9 983·7 983·7 983·6 983·5	983.3 983.1 983.1 983.1	982·8 982·6 982·6 982·6 982·5	982·4 982·1 982·0 982·0
66 67 68 69 70	983.9 983.8 983.6 983.5	983·4 983·2 983·1 983·0 982·9	982·9 982·7 982·5 982·4 982·4	982·3 982·1 982·0 981·9 981·8	981.8 981.6 981.5 981.3
71 72 73 74 75	983.4 983.3 983.3 983.2 983.1	982·9 982·8 982·7 982·6 982·5	982·3 982·2 982·1 982·0	981·8 981·7 981·6 981·5 981·4	981·2 981·1 981·0 980·9 980·8

Frue per Cent.	91°	92°	93°	94 °	95°
76 77 78 79	983.0 982.9 982.9 982.8	982·5 982·4 982·3 982·2	981.9 981.7 981.6	981·2 981·2 981·3	980·8 980·7 980·6
80 81	982·7 982·6	982.0	981.5	980.9	980.4
82 83 84 85	982.6 982.5 982.3	982.0 981.9 981.9	981·4 981·4 981·3 981·2		980.1
86 87 88	982·0 982·2 982·3	981·6 981·5 981·4	980.8 981.0	980.4	979.8
89 90 91	982.0 981.9	981·4 981·3 981·2	980·8 980·7	980.1	979·6 979·5
92 93 94	981·6 981·6	981.0 981.1 981.1	980.4 980.4 980.4	979 <sup>.</sup> 9	979 <sup>3</sup> 979 <sup>2</sup>
95 96 97	981·3 981·4 981·5	980·9 980·8 980·7	980·2 980·2	979.6	979.0
98 99 100	981.1 981.1	980·6 980·5 980·5	979 <sup>.</sup> 9	979°3	978·7 978·6

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True per Cent.	96°	97°	980	99°	100°
1	994.4	994.2	994.0	993.7	993.5
2	994.4	994.1	993.9	993.7	993.4
3	994'3	994.0	993.8	993.6	993.3
4	994.2	994.0	993.7	993.5	993.3
5	994.1	993.9	993.7	993.4	993.2
6	994.0	993.8	993.5	993.3	993.1
7	993.9	993.7	993.4	993.2	992.9
8	993.8	993.6		993.1	992.9
9	993.7	993.4	993.2	992.9	992.7
10	993.6	993.3	993.1	992.8	992.6
11	993.4	993.1	992.9	992.6	992.4
12	993.2	10	992.7	992.4	992.1
13	993.0			992.2	991.9
14	992.8		992.3		991.7
15	992.6	992.3	992.0	991.8	991.5
16	992.4	992.1	991.8	991.5	991.2
17	992.1	991.8		991.3	991.0
18	991.9			991.0	990.7
19	991.5		990.9	990.6	990.3
20	991.1	990.8	990.4	990.1	989.8
21	990.6	990.3	990.0	989.7	989.3
22	990.2	989.9	989.6	989.2	988.9
23	990.I	1 0			988.8
24	990.0				988.7
25	989.9	989.6	989.2	988.9	988.6

True per Cent.	96°	97°	98°	99°	100°
26 27 28 29 30	989·6 989·3 989·0 988·7 988·4	989.3 988.6 988.3 989.0	988·9 988·6 988·3 988·0 987·7	988·6 988·3 987·9 987·6 987·3	988·2 987·9 987·6 987·3 987·0
31 32 33 34 35	988·1 987·8 987·4 987·1 986·8	987·7 987·4 987·0 986·7 986·4	987.4 987.0 986.7 986.3 986.0	987.0 986.6 986.3 985.9 985.6	986·6 986·3 985·9 985·5 985·2
36 37 38 39 40	986·4 986·0 985·6 985·5 985·4	986.0 985.6 985.2 985.1 985.0	985.6 985.2 984.8 984.7 984.5	985·2 984·8 984·4 984·2 984·1	984·8 984·4 983·9 983·8 983·7
41 42 43 44 45	985·1 984·9 984·3 984·3	984·7 984·4 984·1 983·8 983·7	984·3 984·0 983·4 983·4	983·8 983·5 983·2 982·9 982·8	983.4 983.1 982.7 982.5 982.5
46 47 48 49 50	984.0 983.8 983.6 983.5 983.5	983·5 983·3 983·2 982·8	983·1 982·8 982·7 982·5 982·4	982.6 982.4 982.2 982.1	982·1 981·9 981·8 981·6 981·4

True per Cent.	96°	970	98°	990	100°
51 52 53 54 55	983·2 983·0 982·8 982·6 982·4	982·7 982·3 982·1 981·9	982·2 982·0 981·8 981·6 981·4	981·3 981·3 981·1	981·2 981·0 980·8 980·6 980·4
56 57 58 59 60	982·3 982·3 982·0 981·9	981·8 981·8 981·7 981·5	981·3 981·3 981·3	980·8 980·7 980·6 980·5	980·3 980·2 980·0 980·0
61 62 63 64	981·8 981·6 981·5	981·2 981·0 981·0	980·7 980·5 980·4	980·2 980·0 979·9 979·9	979·6 979·4 979·4 979·4
65 66 67 68 69	981·4 981·2 981·1 980·9 980·9	980·9 980·3 980·3 980·2	980·3 980·2 980·0 979·8 979·6	979·8 979·6 979·4 979·1	979'3 979'1 978'9 978'7 978'5
70 71 72 73 74	980·7 980·7 980·6 980·5 980·4	980·1 980·0 980·0 979·9 979·8	979.6 979.5 979.4 979.3 979.2	979°0 979°0 978°9 978°8 978°7	978·5 978·4 978·3 978·2 978·1
75	980.3	979.7	979.1	978.6	978.0

N

True per Cent.	96°	97°	98°	99°	100°
76 77 78 79 80	980·2 980·0 979·9 979·8	979.6 979.5 979.4 979.3 979.2	979·1 978·9 978·8 978·6	978·5 978·4 978·3 978·2 978·1	977.9 977.8 977.7 977.6 977.5
81 82 83 84 85	979.7 979.7 979.6 979.4	979.1 979.1 979.1 979.0 978.8	978.6 978.5 978.5 978.4 978.2	978·0 978·0 977·9 977·8 977·6	977.4 977.4 977.4 977.2 977.1
86 87 88 89 90	979·2 979·1 979·1 979·9	978.6 978.5 978.5 978.4 978.3	978·0 977·9 977·8 977·7	977.5 977.3 977.3 977.0	976·9 976·7 976·7 976·6 976·5
91 92 93 94 95	978·8 978·7 978·5 978·5 978·4	978·2 978·0 977·9 977·7	977.5 977.4 977.3 977.1	976·9 976·7 976·7 976·4	976·3 976·1 976·1 975·8
96 97 98 99 100	978·3 978·2 978·1 978·0 978·0	977.7 977.5 977.4 977.3 977.3	977.0 976.9 976.8 976.7 976.7	976·4 976·2 976·0 976·0	975.7 975.6 975.5 975.4 975.4

# TABLE III.

Showing the commercial value, or decimal proportion of the volume occupied by any spirituous liquor, at any temperature between 20° and 100° Fahr., which is to be considered pure alcohol at 60° Fahrenheit.

In the use of this table the gauging and proving must always be performed at the same temperature.

#### COMMERCIAL FALLER.

	Official S				
	EE	Bourt			
161			27.71		
	TY				
	12				
			T.VA		
				72 85	
			Se ET		MZ.

Indica- tion.	21°	22°	23°	24 °	25°
1 2 3 4 5 6 7 8 9 10	0·79 1·80 2·84 3·90 4·95 6·07 7·20 8·34 9·48 10·62	0.83 1.86 2.90 3.95 5.00 6.12 7.25 8.39 9.53 10.66	0.88 1.91 2.95 4.01 5.06 6.18 7.31 8.45 9.58	0.92 1.97 3.01 4.06 5.11 6.23 7.36 8.50 9.63 10.75	0.97 2.02 3.06 4.11 5.17 6.29 7.42 8.55 9.68 10.80
11 12 13 14 15	11.95 13.24 14.53 15.82	11.99 13.28 14.57 15.85 17.26	12.04 13.32 14.60 15.87 17.28	12.08 13.36 14.64 15.90	12·13 13·40 14·68 15·93 17·30
16 17 18 19 20	18.76 20.30 21.80 23.45 25.17	18.77 20.28 21.78 23.40 25.10	18·77 20·27 21·75 23·36 25·04	18·78 20·25 21·72 23·31 24·97	18.78 20.24 21.70 23.26 24.90
21 22 23 24 25	26.92 28.68 30.30 31.89 33.50	26.82 28.55 30.15 31.71 33.30	26·73 28·43 29·99 31·54 33·09	26.63 28.30 29.84 31.36 32.89	26.53 28.18 29.69 31.18 32.68

Indica- tion.	21°	22°	23°	24°	25°
26	35·17	34·94	34·70	34·47	34·23
27	36·83	36·57	36·30	36;04	35·77
28	38·51	38·21	37·92	37·62	37·32
29	40·12	39·80	39·47	39·15	38·83
30	41·73	41·38	41·02	40·67	40·32
31	43·31	42.93	42·54	42·16	41.77
32	44·60	44.19	43·79	43·38	42.97
33	45·91	45.48	45·06	44·63	44.20
34	47·06	46.63	46·19	45·76	45.33
35	48·14	47.70	47·25	46·81	46.36
36	49·25	48·79	48·33	47.87	47.41
37	50·41	49·94	49·48	49.01	48.55
38	51·59	51·12	50·64	50.17	49.69
39	52·23	51·77	51·30	50.84	50.38
40	52·93	52·49	52·04	51.60	51.16
41	53.66	53·23	52.79	52·36	51.93
42	54.44	54·02	53.61	53·19	52.77
43	55.18	54·78	54.38	53·98	53.58
44	56.00	55·61	55.21	54·82	54.42
45	56.85	56·47	.56.08	55·70	55.32
46	57.71	57:33	56·94	56·56	56·18
47	58.53	58:16	57·78	57·41	57:04
48	59.30	58:94	58·58	58·22	57:86
49	60.10	59:76	59·41	59·07	58:72
50	60.97	60:63	60·28	59·94	59:60

Indica- tion.	21°	22°	23°	24°	25°
51	61.86	61·52	61·19	60.85	60·52
52	62.77	62·44	62·10	61.77	61·43
53	63.66	63·33	63·01	62.68	62·35
54	64.48	64·16	63·85	63.53	63·21
55	65.29	64·98	64·68	64.37	64·07
56	66·21	65.91	65.60	65·30	65.00
57	67·12	66.82	66.51	66·21	65.91
58	68·03	67.73	67.43	67·13	66.83
59	68·94	68.65	68.37	68·08	67.79
60	69·84	69.56	69.27	68·99	68.71
61	70·78	70·50	70·21	69·93	69.65
62	71·75	71·47	71·18	70·90	70.62
63	72·67	72·39	72·12	71·84	71.56
64	73·63	73·35	73·08	72·80	72.53
65	74·59	74·32	74·05	73·78	73.51
66	75.57	75.30	75.03	74·76	74.49
67	76.58	76.31	76.04	75·77	75.50
68	77.48	77.21	76.95	76·68	76.41
69	78.37	78.11	77.84	77·58	77.32
70	79.32	79.05	78.79	78·52	78.26
71	80·27	80.01	79.74	79.48	79.21
72	81·21	80.95	80.70	80.44	80.18
73	82·17	81.91	81.65	81.39	81.13
74	83·11	82.85	82.60	82.34	82.09
75	84·05	83.80	83.54	83.29	83.03

Indica- tion.	21°	22°	23°	24 °	25°
76 77 78 79 80	85.01 85.99 86.96 87.91 88.87	84·76 85·74 86·71 87·67 88·62	84·52 85·49 86·47 87·42 88·38	84·27 85·24 86·22 87·18 88·13	84.02 84.99 85.97 86.93 87.88
81 82 83 84 85	89.85 90.83 91.81 92.74 93.64	89.61 90.58 91.56 92.50 93.40	89·36 90·34 91·32 92·25 93·16	89·12 90·09 91·07 92·01	88.88 89.84 90.83 91.77 92.68
86 87 88 89 90		94·3 <sup>2</sup> 95·24 96·15 97·99 97·95	94·08 95·00 95·92 96·85 97·73	93.85 94.77 95.68 96.62 97.51	93.62 94.54 95.45 96.39 97.29
91 92 93 94 95	99.00 99.91 100.84 101.66 102.48	98.79 99.70 100.62 101.45	98·57 99·49 100·41 101·25 102·07	98·36 99·28 100·19 101·04 101·86	98·14 99·07 99·98 100·83
96 97 98 99 100	105.68	103.08 103.86 104.69 105.45 106.43	102.87 103.65 104.50 105.23 106.25	102.67 103.45 104.32 105.00 106.08	102·46 103·24 104·13 104·77 105·90

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Indica- tion.	26 9	2'	70	28°	29°	30°
1 2	1.0	8 2	2.12	1.51	1.29	1.37
3 4 5	3·I 4·I	6	3·18 1·22	3·23 4·27 5·30	3·29 4·33 5·35	3.35 4.38 5.39
6 7 8	6·3 7·4 8·5	6	5·37 7·50 3·63	6·42 7·55 8·66	7.59	6·50 7·63 8·74
9 10	9.7	3 10	9.75 5.86	9.79	9.82	9.86
11 12 13	13.4	9 1	2·18 3·44 4·70	14.70	13.48	12·26 13·50 14·72
14 15 16	15.9	9 1	5·93 7·29 8·74	15.04	17.28	15.94
17 18 19	20.2	55 2	0.16 1.29	20.12	20.08	20.04
20 21	24.8	30 2. 11 20	4·70 6·29	24.61	24.51	24.41
22 23 24	29.5	9 3	7·89 9·35 9·79	30.60	30.40	30.51
25	32.7	17 3	2.25	32.04	31.82	31.61

Indica- tion.	26°	27°	28°	29°	30°
26 27 28 29 30	33.99 35.21 37.03 38.21	33.74 35.25 36.74 38.19 39.63	33.50 34.98 36.44 37.87 39.29	33 <sup>25</sup> 34 <sup>72</sup> 36·15 37·55 38·94	33.01 34.46 35.86 37.23 38.60
31	41·40	41.03	40·66	40·29	39·92
32	42·58	42.20	41·81	41·43	41·04
33	43·80	43.41	43·01	42·62	42·22
34	44·93	44.52	44·12	43·71	43·31
35	45·95	45.54	45·13	44·72	44·31
36	47.00	46·59	46·18	45.77	45·36
37	48.13	47·70	47·28	46.85	46·43
38	49.25	48·82	48·38	47.95	47·51
39	49.97	49·56	49·14	48.73	48·32
40	50.75	50·34	49·94	49.53	49·12
41	51.54	51·14	50.75	50·35	49·96
42	52.39	52·00	51.62	51·23	50·85
43	53.20	52·83	52.45	52·08	51·70
44	54.06	53·70	53.35	52·99	52·63
45	54.96	54·60	54.25	53·89	53·53
46	55.83	55.48	55·12	54.77	54·42
47	56.70	56.36	56·01	55.67	55·33
48	57.53	57.20	56·86	56.53	56·20
49	58.39	58.06	57·74	57.41	57·08
50	59.28	58.96	58·65	58.33	58·01

Indica- tion.	26°	27°	28°	29°	30°
51	60·21	59.89	59·58	59·26	58.95
52	61·12	60.81	60·50	60·19	59.88
53	62·04	61.73	61·42	61·11	60.80
54	62·91	62.61	62·32	62·02	61.72
55	63·78	63.49	63·20	62·91	62.62
56	64:71	64·41	64·12	63·82	63·53
57	65:62	65·33	65·05	64·76	64·47
58	66:55	66·27	66·00	65·72	65·44
59	67:51	67·23	66·95	66·67	66·39
60	68:44	68·16	67·89	67·61	67·34
61	69·38	69·11	68·84	68·57	68·30
62	70·35	70·08	69·82	69·55	69·28
63	71·29	71·02	70·56	70·49	70·22
64	72·26	71·99	71·73	71·46	71·19
65	73°24	72·98	72.71	72.45	72·18
66	74°23	73·97	73.70	73.44	73·18
67	75°24	74·98	74.71	74.45	74·19
68	76°15	75·89	75.64	75.38	75·12
69	77°07	76·81	76.56	76.30	76·05
70	78.00	77.75	77.49	77.24	76·98
71	78.96	78.71	78.45	78.20	77·95
72	79.93	79.67	79.42	79.16	78·91
73	80.88	80.63	80.38	80.13	79·88
74 75	81.84	81.59	81.34		80.84

Indica- tion.	26°	27°	28°	29°	30°
76	83.77	83·53	83·28	83.04	82·79
77	84.75	84·51	84·26	84.02	83·78
78	85.73	85·49	85·24	85.00	84·76
79	86.69	86·45	86·20	85.96	85·72
80	87.64	87·41	87·17	86.94	86·70
81	88.64	88·39	88·15	87.90	87.66
82	89.60	89·36	89·12	88.88	88.64
83	90.59	90·35	90·11	89.87	89.63
84	91.53	91·29	91·06	90.82	90.58
85	92.45	92·22	91·98	91.75	91.52
86	93°39	93·16	92·93	92·70	92·47
87	94°31	94·08	93·86	93·63	93·40
88	95°22	95·00	94·77	94·55	94·32
89	96°16	95·94	95·71	95·49	95·26
90	97°07	96·84	96·62	96·39	96·17
91 92 93 94 95	97.92 98.85 99.77 100.62 101.46	97:70 98:64 99:55 100:41 101:26	97.48 98.42 99.34 100.21	97·26 98·21 99·12 100·00 100·85	97.04 97.99 98.91 99.79 100.65
96 97 98 99 100	102·26 103·05 103·94 104·63 105·72	102.05 102.86 103.75 104.50 105.54	101.85 102.67 103.57 104.36 105.36	101.64 102.48 103.38 104.23 105.18	101·44 102·29 103·19 104·09

Indica- tion.	31°	32°	33°	34 °	35°
1 2 3 4	1.44 2.38 3.39 4.41	1·51 2·42 3·42 4·44	1·59 2·47 3·46 4·46	1.66 2.51 3.49 4.49	1.73 2.25 3.53 4.52
5 6 7 8 9	5·4 <sup>2</sup> 6·53 7·66 8·76 9·88	5·45 6·56 7·68 8·78 9·89	5·48 6·59 7·71 8·81	5.51 6.62 7.73 8.83 9.92	5°54 6·65 7°76 8·85 9°94
10 11 12 13	10·97 12·26 13·50 14·71	10·98 12·27 13·50 14·70	11.00 12.27 13.50 14.69	12·28 13·50 14·68	12·28 13·50 14·67
14 15 16 17	15.92 17.24 18.63 19.98	15.90 17.21 18.58 19.92	15.87 17.18 18.54 19.86	15.85 17.15 18.49 19.80	15.83 17.12 18.45 19.74
18 19 20 21	21·33 22·79 24·29	21·26 22·69 24·17 25·66	21·18 22·60 24·05	21·11 22·50 23·93 25·39	21.03 22.41 23.81 25.25
22 23 24 25	27·29 28·66 30·02	27·13 28·48 29·82 31·17	26.98 28.30 29.63 30.96	26·82 28·12 29·43 30·74	26.66 27.94 29.24 30.52

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Indica- tion.	31°	32°	33°	34 °	35°
26	32·77	32·53	32·30	32.06	31·82
27	34·20	33·93	33·67	33.40	33·14
28	35·58	35·30	35·03	34.75	34·47
29	36·93	36·62	36·32	36.01	35·71
30	38·27	37·94	37·61	37.28	36·95
31	39·57	39·23	38·88	38·54	38·19
32	40·69	40·34	40·00	39·65	39·30
33	41·85	41·49	41·12	40·76	40·39
34	42·93	42·55	42·17	41·79	41·41
35	43·93	43·56	43·18	42·81	42·43
36	44.98	44.60	44·23	43.85	43.47
37	46.04	45.65	45·25	44.86	44.47
38	47.13	46.74	46·36	45.97	45.59
39	47.93	47.55	47·16	46.78	46.39
40	48.75	48.38	48·01	47.64	47.27
41	49.60	49°24	48·89	48·53	48·17
42	50.50	50°15	49·79	49·44	49·09
43	51.36	51°02	50·68	50·34	50·00
44	52.29	51°95	51·60	51·26	50·92
45	53.19	52°85	52·51	52·17	51·83
46	54.09	56.47	53·4 <sup>2</sup>	53.09	52·76
47	55.01		54·37	54.05	53·73
48	55.89		55·26	54.95	54·64
49	56.78		56·17	55.86	55·56
50	57.71		57·10	56.80	56·50

Indica- tion.	31°	32°	33°	34°	35°
51	58.65	58·35	58.04	57.74	57.44
52	59.58	59·28	58.98	58.68	58.38
53	60.51	60·22	59.94	59.65	59.36
54	61.43	61·14.	60.86	60.57	60.28
55	62.34	62·05	61.77	61.48	61.20
56	63·25	62·97	62·69	62:41	62·13
57	64·20	63·93	63·66	63:39	63·12
58	65·17	64·90	64·63	64:36	64·09
59	66·12	65·85	65·58	65:31	65·04
60	67·07	66·80	66·53	66:26	65·99
61	68·03	67·77	67·50	67·24	66·97
62	69·02	68·75	68·49	68·22	67·96
63	69·96	69·70	69·45	69·19	68·93
64	70·94	70·68	70·43	70·17	69·92
65	71·93	71·67	71·42	71·16	70·91
66	72.93	75.24	72·42	72·16	71.91
67	73.93		73·42	73·17	72.91
68	74.86		74·35	74·10	73.84
69	75.80		75·29	75·03	74.78
70	76.73		76·23	75:98	75.73
71 72 73 74 75	77.70 78.66 79.64 80.60 81.59	78·42 79·39 80·36	77.21 78.17 79.15 80.12 81.10	79.88	76·71 77·68 78·66 79·64 80·62

Indica- tion.	31°	32°	33°	34 °	35°
76	82·55	82·31	82.08	81.84	81.60
77	83·54	83·30	83.06	82.82	82.58
78	84·52	84·28	84.04	83.80	83.56
79	85·48	85·25	85.01	84.78	84.54
80	86·46	86·23	85.99	85.76	85.52
81	87.43	87·20	86·96	86·73	86·50
82	88.40	88·16	87·93	87·69	87·45
83	89.39	89·16	88·92	88·69	88·45
84	90.35	90·11	89·88	89·64	89·41
85	91.29	91·06	90·82	90·59	90·36
86	92·24	92.02	91·79	91·57	91·34
87	93·17	92.95	92·72	92·50	92·27
88	94·10	93.87	93·65	93·42	93·20
89	95·04	94.82	94·60	94·38	94·16
90	95·95	95.73	95·51	95·29	95·07
91 92 93 94 95	96·83 97·78 98·71 99·59	96.62 97.57 98.50 99.39 100.25	96·42 97·36 98·30 99·18	96·21 97·15 98·09 98·98 99·85	96.00 96.94 97.89 98.78 99.65
96 97 98 99 100	101·24 102·11 103·01 103·92 104·83	101.05 101.93 102.83 103.75 104.66	100·85 101·74 102·65 103·57 104·48	100.66 101.56 102.47 103.40 104.31	100.46 101.38 102.29 103.14

Indica- tion-	36°	37°	38°	39°	40°
1 2 3 4 5 6 7 8	1.75 2.56 3.54 4.53 5.55 6.66 7.76 8.85	1.78 2.58 3.55 4.55 5.56 6.67 7.76 8.85	1.80 2.59 3.57 4.56 5.57 6.67 7.77 8.85	7·77 8·85	1.85 2.62 3.59 4.59 5.59 6.69 7.77 8.85
9 10 11 12 13 14 15	9.94 11.02 12.27 13.48 14.64 15.79 17.07	9.94 11.02 12.26 13.45 14.61 15.76 17.02	9.93 11.01 12.26 13.43 14.58 15.72 16.98	9.93 11.01 12.25 13.40 14.55 15.69 16.93	9.93 11.01 12.24 13.38 14.52 15.65 16.88
16 17 18 19 20 21	18·39 19·66 20·94 22·30 23·68	19.59	18·26 19·51 20·75 22·07 23·43 24·79	18·20 19·44 20·65 21·96 23·31 24·64	18·14 19·36 20·56 21·85 23·18
22 23 24 25	26·49 27·75 29·03	26·32 27·56 28·82	26·14 27·37 28·61	25.97 27.18 28.40	25·80 26·99 28·19

Indica- tion.	36°	37°	38°	39 °	40°
26 27 28 29 30	31·58 32·88 34·19 35·41 36·64	31·34 32·62 33·91 35·11	31.09 32.37 33.63 34.82 36.02	30·85 32·11 33·35 34·52 35·71	30.61 31.85 33.07 34.22 35.40
31	37.86	37.53	37·21	36.88	36·55
32	38.96	38.62	38·29	37.95	37·61
33	40.04	39.70	39·35	39.01	38·66
34	41.07	40.73	40·38	40.04	39·70
35	42.08	41.73	41·39	41.04	40·69
36	43.12	42·76	42·41	42.05	41.70
37	44.12	43·78	43·43	43.09	42.74
38	45.23	44·87	44·50	44.14	43.78
39	46.05	45·70	45·36	45.01	44.67
40	46.93	46·60	46·26	45.93	45.59
41	47.84	47.51	47·18	46.85	46·52
42	48.77	48.44	48·12	47.79	47·47
43	49.68	49.36	49·03	48.71	48·39
44	50.60	50.28	49·97	49.65	49·33
45	51.52	51.21	50·91	50.60	50·29
46	52·46	52·16	51·86	51·56	51·26
47	53·43	53·13	52·84	52·54	52·24
48	54·35	54·05	53·76	53·46	53·17
49	55·27	54·98	54·68	54·39	54·10
50	56·21	55·92	55·64	55·35	55·06

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Indica- tion.	36°	37°	38°	39°	40°
51 52 53 54 55	57·16 58·10 59·08 60·01 60·93	56.87 57.82 58.80 59.73 60.66	56·59 57·55 58·52 59·46 60·38	56·30 57·27 58·24 59·18 60·11	56·02 56·99 57·96 58·91 59·84
56 57 58 59 60	61.87 62.86 63.83 64.78 65.74	61·61 62·59 63·57 64·53 65·48	61·35 62·33 63·30 64·27 65·23	61·09 62·06 63·04 64·02 64·97	60·83 61·80 62·78 63·76 64·72
61 62 63 64 65	66·71 67·70 68·68 69·67 70·66	66·46 67·45 68·43 69·42 70·41	66·20 67·19 68·17 69·17	65.95 66.94 67.92 68.92 69.92	65.69 66.68 67.67 68.67 69.67
66 67 68 69 70	71.66 72.66 73.59 74.54 75.49	71.41 72.41 73.35 74.29 75.25	71·16 72·16 73·10 74·05 75·01	70.91 71.91 72.86 73.80	70.66 71.66 72.61 73.56 74.53
71 72 73 74 75	76·47 77·44 78·42 79·41 80·39	76·23 77·20 78·19 79·17 80·15	75.99 76.96 77.95 78.94 79.92	75.75 76.72 77.72 78.70 79.68	75.51 76.48 77.48 78.47 79.45

Indica- tion.	36°	37°	38°	39 °	40°
76		81·13	80.90	80.66	80·43
77		82·12	81.88	81.65	81·42
78		83·10	82.86	82.63	82·40
79		84·08	83.84	83.61	83·38
80		85·06	84.83	84.60	84·37
81	86·27	86·04	85.81	85·58	85·35
82	87·22	87·00	86.77	86·55	86·32
83	88·22	87·99	87.77	87·54	87·31
84	89·19	88·96	88.74	88·51	88·29
85	90·14	89·92	89.69	89·47	89·25
86 87 88 89 90	91·12 92·05 92·98 93·94 94·86	90·90 91·83 92·76 93·72 94·65	90·67 91·61 92·55 93·50 94·43	90·45 91·39 92·33 93·28 94·22	90.53 91.11 93.06 94.01
91	95·79	95·58	95·37	95·16	94·95
92	96·73	96·52	96·31	96·10	95·89
93	97·69	97·49	97·29	97·09	96·89
94	98·59	98·39	98·20	98·01	97·81
95	99·46	99·26	99·07	98·87	98·68
96	100·28	100·10	99.93	99.75	99.57
97	101·20	101·02	100.83	100.65	100.47
98	102·11	101·94	101.76	101.59	101.41
99	103·05	102·88	102.70	102.53	102.35
100	103·97	103·80	103.63	103.46	103.29

Indica- tion.	41°	42°	43°	44 °	45°
1	1.85	1.85	1.85	1.85	1.85
2	2.62	2.62	2.62	2.62	2.62
3	3.59	3.59	3.28	3.28	3.28
4	4.28	4.28	4.22	4.22	4.26
5	5.28	5.28	5.22	5.22	5.26
6	6.68	6.67	6.67	6.66	6.65
7	7.76	7.75	7.75	7.74	7.73
8	8.83	8.82	8.80	8.79	8.77
9	6.0I	9.88	9.86	9.83	9.81
10	10.98	10.95	10.92	10.89	10.86
11	12.20	12.17	12.13	12.10	12.06
12	13.34	13.29	13.25	13.50	13.16
13	14.47	14.42	14.36	14.31	14.26
14	15.29	15.23	15.48	15.42	15.36
15	16.81	16.73	16.66	16.28	16.21
16	18.05	17.96	17.88	17.79	17.70
17	19.26	19.19	19.06	18.96	18.86
18	20.45	20.34	20.55	20.II	20.00
19	21.72	21.60	21.47	21.35	21.22
20	53.03	22.89	22.74	22.60	2.2.45
21	24.32	24.15	23.99	23.82	23.65
22	25.61	25.43	25.24	25.06	24.87
23	26.80	26.60	26.41	26.21	26.02
24	27.98	27.77	27.57	27.36	27.15
25	29.17	28.95	28.72	28.50	28.27

Indica- tion.	41°	42°	43°	44°	45°
26	30·37	30·13	29.89	29.65	29.41
27	31·59	31·33	31.08	30.82	30.56
28	32·80	32·53	32.25	31.98	31.71
29	33·94	33·66	33.37	33.09	32.81
30	35·10	34·81	34.51	34.22	33.92
31	36·24	35.93	35.63	35·32	35.01
32	37·29	36.98	36.66	36·35	36.03
33	38·34	38.02	37.71	37·39	37.07
34	39·38	39.05	38.73	38·40	38.08
35	40·37	40.05	39.72	39·40	39.08
36	41·38	41.06	40.74	40.42	40·10
37	42·41	42.08	41.76	41.43	41·10
38	43·46	43.13	42.81	42.48	42·16
39	44·35	44.03	43.71	43.39	43·07
40	45·28	44.98	44.67	44.37	44·06
41	46·21	45.91	45.60	45:30	44.99
42	47·17	46.87	46.56	46:26	45.96
43	48·09	47.79	47.50	47:20	46.90
44	49·04	48.75	48.45	48:16	47.87
45	50·00	49.71	49.43	49:14	48.85
46 47 48 49 50	50.98 51.96 52.89 53.82 54.78	50.69 51.67 52.61 53.55 54.51	50.41 51.39 52.33 53.27 54.23	50·12 51·10 52·05 53·96	10

1 1					
Indica- tion.	41°	42°	43°	44°	45°
51 52 53 54 55	55.75 56.72 57.69 58.64 59.59	55.49 56.46 57.42 58.38 59.33	55·22 56·19 57·16 58·11	54.96 55.93 56.89 57.85 58.82	54.69 55.66 56.62 57.58 58.57
56	60·58	60·32	60.07	59.81	59·56
57	61·55	61·29	61.04	60.78	60·53
58	62·53	62·27	62.02	61.76	61·51
59	63·51	63·26	63.00	62.75	62·50
60	64·47	64·22	63·97	63·72	63·47
61	65·45	65·20	64·96	64·71	64·47
62	66·44	66·19	65·95	65·70	65·46
63	67·43	67·19	66·94	66·70	66·46
64	68·43	68·19	67·94	67·70	67·46
65	69·43	69·18		68.69	68·45
66	70·41	70·17		69.68	69·43
67	71·41	71·17		70.68	70·43
68	72·37	72·13		71.64	71·40
69	73·33	73·10		72.63	72·40
70	74·30	74·06	73.83	73·59	73·36
71	75·28	75·04	74.81	74·57	74·34
72	76·25	76·01	75.78	75·54	75·31
73	77·25	77·02	76.79	76·56	76·33
74 75	78.24	78.99	77.78	77.55	77.32

Indica- tion.	41°	42°	43°	44°	45°
76	80·20	79.97	79.75	79·52	79·29
77	81·19	80.96	80.72	80·49	80·26
78	82·17	81.95	81.72	81·50	81·27
79	83·15	82.92	82.70	82·47	82·24
80	84·14	83.92	83.69	83·47	83·24
81	85·13	84·90	84.68	84·45	84·23
82	86·10	85·88	85.65	85·43	85·21
83	87·09	86·87	86.64	86·42	86·20
84	88·07	87·85	87.62	87·40	87·18
85	89·03	88·81	88.59	88·37	88·15
86 87 88 89 90	90.01 90.95 91.90 92.85 93.81	89·79 90·74 91·68 92·64 93·60	89·58 90·52 91·47 92·44 93·40	89·36 90·31 91·25 93·19	89·14 90·09 91·04 92·02 92·99
91 92 93 94 95	94.74 95.69 96.69 97.61 98.48	94·54 95·49 96·49 97·41 98·29	94:33 95:30 96:30 97:21 98:10	94·13 95·10 96·10 97·90	93·92 94·90 95·90 96·81 97·70
96	99·38	99·20	99.01	98.83	98.64
97	100·30	100·12	99.95	99.77	99.60
98	101·24	101·06	100.89	100.71	100.54
99	102·18	102·01	101.84	101.67	101.50
100	103·12	102·96	102.79	102.63	102.46

Indica- tion.	46°	47°	48°	49°	50°
1	1·80	1.75	1.69	3.48	1·59
2	2·59	2.56	2.53		2·47
3	3·55	3.53	3.50		3·45
4	4·54	4.52	4.49		4·45
5	5·54	5.51	5.49		5·44
6	6.62	6·59	6·56	6·53	6·50
7	7.69	7·65	7·62	7·58	7·54
8	8.73	8·70	8·66	8·63	8·59
9	9.77	9·73	9·70	9·66	9·62
10	10.82	10·78	10·73	10·69	10·65
11	12.00	11.95	11.89		11.78
12	13.10	13.03	12.97		12.84
13	14.19	14.12	14.04		13.90
14	15.29	15.22	15.14		15.00
15	16.43	16.35	16.28		16.12
16	17.60	17·50	17.39	17·29	17·19
17	18.75	18·64	18.52	18·41	18·30
18	19.88	19·76	19.63	19·51	19·39
19	21.08	20·94	20.79	20·65	20·51
20	22.29	22·13	21.97	21·81	21·65
21 22 23 24 25	23·48 24·68 25·82 26·94 28·05	23·31 24·49 25·61 26·73 27·83	23.14 24.30 25.41 26.51 27.61	24·11 25·20 26·30	23.92 25.00 26.09

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Indica- tion.	46°	47°	48°	49°	50°
26	29·17	28·94	28·70	28·47	28·23
27	30·31	30·06	29·81	29·56	29·31
28	31·45	31·19	30·93	30·67	30·41
29	32·54	32·28	32·01	31·75	31·48
30	33·64	33·36	33·08	32·80	32·52
31	34·73	34.44	34·16	33.87	33.59
32	35·74	35.45	35·17	34.88	34.59
33	36·78	36.48	36·19	35.89	35.60
34	37·79	37.50	37·21	36.92	36.63
35	38·79	38.50	38·20	37.91	37.62
36	39.81	39.52	39·22	38·92	38.63
37	40.81	40.51	40·22	39·92	39.63
38	41.86	41.56	41·26	40·96	40.66
39	42.78	42.50	42·21	41·93	41.64
40	43.77	43.48	43·19	43·90	42.61
41	44.71	44.42	44·14	43·85	43.57
42	45.67	45.39	45·10	44·82	44.53
43	46.62	46.34	46·06	45·78	45.50
44	47.60	47.32	47·05	46·77	46.50
45	48.58	48.31	48·04	47·77	47.50
46	49.57	49·30	49.03	48·76	48·49
47	50.55	50·28	50.02	49·75	49·48
48	51.50	51·23	50.97	50·70	50·43
49	52.46	52·20	51.93	51·67	51·41
50	53.43	53·17	52.92	52·66	52·41

Indica-	46°	47°	48°	49°	50°
51 52 53 54 55	54:43 55:40 56:37 57:34 58:32	54·18 55·15 56·11 57·09 58·08	53.92 54.89 55.86 56.85 57.83	53.67 54.64 55.60 56.60	53.41 54.38 55.35 56.36 57.34
56	59·31	59.07	58.82	58·58	58·33
57	60·29	60.05	59.80	59·56	59·32
58	61·27	61.03	60.79	60·55	60·31
59	62·26	62.02	61.78	61·54	61·30
60	63·23	62.99	62.76	62·52	62·28
61	64·23	63·99	63·76	63.52	63·28
62	65·22	64·99	64·75	64.52	64·28
63	66·22	65·99	65·75	65.52	65·28
64	67·22	66·99	66·75	66.52	66·28
65	68·21	67·98	67·74	67.51	67·27
66	69·20	68·96	68·73	69.49	68·26
67	70·19	69·96	69·72		69·25
68	71·17	70·94	70·70		70·24
69	72·17	71·93	71·70		71·23
70	73·13	72·90	72·66		72·20
71	74·11	73·88	73.64		73·18
72	75·09	74·86	74.64		74·19
73	76·10	75·87	75.65		75·19
74	77·09	76·87	76.64		76·19
75	78·08	77·85	77.63		77·18

Indica- tion.	46°	47°	48°	49°	50°
76 77 78 79 80	79.06 80.04 81.05 82.02 83.02	78.84 79.82 80.83 81.80 82.80	78.61 79.60 80.60 81.58 82.57	78·39 79·38 80·38 81·36 82·35	78·16 79·16 80·16 81·14 82·13
81 82 83 84 85	84.99 85.98 86.97 87.94	83·79 84·77 85·76 86·75 87·72	83·57 84·55 85·55 86·54 87·51	83·35 84·33 85·33 86·32 87·29	83·13 84·11 85·11 86·11 87·08
86 87 88 89 90	88.93 89.88 90.83 91.82 92.78	88·72 89·67 90·62 91·61 92·58	88·50 89·46 90·42 91·41 92·37	88·29 89·25 90·21 -91·20 92·17	88.08 89.04 90.00 91.00
91 92 93 94 95	93.72 94.70 95.71 96.61 97.51	93.52 94.50 95.51 96.42 97.33	93·3 <sup>2</sup> 94·3 <sup>1</sup> 95·3 <sup>2</sup> 96·2 <sup>2</sup> 97·14	93·12 94·11 95·12 96·96	92·92 93·91 94·93 95·83 96·77
96 97 98 99 100	98·46 99·42 100·37 101·34 102·29	98·28 99·24 100·20 101·18 102·12	98·11 99·07 100·03 101·02	97:93 98:89 99:86 100:86	97.75 98.71 99.69 100.70 101.60

Indica- tion-	51°	52°	53°	54°	55°
1 2 3 4 5 6 7	1·53 2·43 3·41 4·41 5·40 6·46 7·50	1·47 2·39 3·37 4·37 5·36 6·42 7·45	1·40 2·34 3·33 4·33 5·33 6·37 7·41	1·34 2·30 3·29 4·29 5·29 6·33 7·36	1·28 2·26 3·25 4·25 5·25 6·29 7·32
8 9 10 11 12 13	8·54 9·57 10·59 11·71 12·76 13·82	8·49 9·51 10·53 11·64 12·69	8·43 9·46 10·47 11·56 12·61 13·65	8·38 9·40 10·41 11·49 12·54	8·33 9·35 10·35 11·42 12·46 13·48
14 15 16 17 18 19	14.90 16.01 17.08 18.18 19.26 20.37	14.81 15.90 16.97 18.05 19.12 20.22	14.71 15.80 16.86 17.93 18.99 20.08	14.62 15.69 16.75 17.80 18.85 19.93	14·52 15·58 16·64 17·68 18·72
20 21 22 23 24 25	21·49 22·62 23·73 24·80 25·88 26·95	21·33 22·44 23·54 24·60 25·67 26·73	21·16 22·27 23·35 24·40 25·47 26·51	21·00 22·09 23·16 24·20 25·26 26·29	20·84 21·91 22·97 24·00 25·05 26·07

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Indica- tion.	51°	52°	53°	54°	55°
26 27 28 29 30 31	28.00 29.07 30.17 31.12 32.26 33.32	27.77 28.84 29.92 30.86 32.00	27.55 28.60 29.68 30.61 31.73 32.79	27·32 28·37 29·43 30·35 31·47 32·52	27.09 28.13 29.19 30.19 31.21 32.25
32 33 34 35	34·32 35·33 36·35 37·35	34.04 35.06 36.08 37.07	33.77 34.80 35.80 36.80 37.82	33.49 34.53 35.53 36.52	33·22 34·26 35·25 36·25
36 37 38 39 40	38·36 39·36 40·39 41·36 42·34	38.09 39.08 40.12 41.09 42.07	37.82 38.81 39.84 40.81 41.80	37.55 38.53 39.57 40.54 41.53	37.25 38.26 39.30 40.26 41.26
41 42 43 44 45	43·30 44·27 45·24 46·24 47·24	43.03 44.01 44.98 45.99 46.98	42:77 43:75 44:73 45:73 46:73	42·50 43·49 44·47 45·48 46·47	42·23 43·23 44·21 45·22 46·21
46 47 48 49 50	48·23 49·22 50·18 51·16 52·16	47.97 48.97 49.93 50.92 51.91	47:72 48:71 49:67 50:67 51:67	47:46 48:46 49:42 50:43 51:42	47·20 48·20 49·17 50·18 51·17

Indica-	51°	52°	53°	54°	55°
51 52 53 54 55	53·17 54·13 55·11 56·12	52.92 53.89 54.87 55.88 56.86	52.67 53.64 54.63 55.64 56.63	52:43 53:40 54:39 55:40 56:39	52·18 53·15 54·15 55·16 56·15
56	58.09	57.86	57.62	57:39	57·15
57	59.08	58.85	58.61	58:38	58·14
58	60.07	59.84	59.60	59:37	59·13
59	61.07	60.83	60.60	60:36	60·13
60	62.05	61.82	61.58	61:35	61·12
61	63.05	62.82	62·58	62·35	62·12
62	64.05	63.82	63·59	63·36	63·13
63	65.05	64.82	64·58	64·35	64·12
64	66.05	65.82	65·59	65·36	65·13
65	67.04	66.81	66·58	66·35	66·12
66	68.03	67.80	67·56	67·33	67·10
67	69.02	68.79	68·57	68·34	68·11
68	70.01	69.78	69·56	69·33	69·10
69	71.01	70.78	70·56	70·33	70·11
70	71.98	71.75	71·53	71·30	71·08
71	72.96	72.74	72·53	72·31	72.09
72	73.97	73.75	73·52	73·30	73.08
73	74.97	74.75	74·52	74·30	74.08
74	75.97	75.75	75·52	75·30	75.08
75	76.96	76.74	76·51	76·29	76.07

Indica- tion.	51°	52°	53°	54°	55°
76	77.94	77.72	77.51	77:29	77.07
77	78.94	78.72	78.51	78:29	78.07
78	79.94	79.72	79.51	79:29	79.07
79	80.92	80.70	80.49	80:27	80.05
80	81.92	81.70	81.49	81:27	81.06
81	82·91	82·70	82·48	82·27	82.05
82	83·90	83·69	83·47	83·26	83.05
83	84·90	84·69	84·47	84·26	84.05
84	85·90	85·69	85·47	85·26	85.05
85	86·87	86·66	86·45	86·24	86.03
86	87.87	87.66	87·46	87·25	87.04
87	88.83	88.62	88·42	88·21	88.00
88	89.80	89.60	89·39	89·19	88.99
89	90.80	90.60	90·40	90·20	90.00
90	91.76	91.56	91·37	91·17	90.97
91	92.73	92.54	92°34	92·15	91·96
92	93.72	93.53	93°34	93·15	92·96
93	94.74	94.54	94°35	94·15	93·96
94	95.64	95.46	95°27	95·09	94·90
95	96.59	96.41	96°24	96·06	95·88
96 97 98 99 100	97.57 98.54 99.52 100.53	97.39 98.37 99.35 100.35 101.28	97·22 98·20 99·18 100·18	97.04 98.03 99.01 100.00 100.96	96·86 97·86 98·84 99·83 100·80

tion.	56°	57°	58°	59°	60°
$\begin{vmatrix} 1 \\ 2 \end{vmatrix}$	I.55	1.17	1.11	1.06	I '00
3 4	3.50	3.12	3.10	3.02	3.00
5 6	5·20 6·23	5.15	6.12	5.05	6.00
7 8 9	7·26 8·26 9·28	7·18 8·20 9·21	7·13 8·13	7.06 8.07 9.07	9.00 9.00
10 11	10.28	10.21	10.14	10.07	10.00
12 13	12.37	12.28	12.18	13.10	13.00
14 15	14.42	14.31	14.51	14.10	15.00
16 17 18	16·51 17·54 18·58	16·38 17·41 18·43	16·26 17·27 18·29	16·13 17·14 18·14	16.00
19 20	19.63	19.47	19.32	19.16	19.00
21 22	21.73	21.55	21.36	21.18	21.00
23 24 25	23.80 24.84 25.86	23.60 24.63 25.64	23·40 24·42 25·43	23·20 24·21 25·21	23.00
			, , ,	11.50	

indica- tion.	F.C.0	570	700	700	000
Ind	56°	57°	58°	59°	60°
26	26.87	26.65	26.44	26.22	26.00
27 28	27.90	27.68	27:45	27.23	27.00
29	28.95	28.71	28.48	28.24	28.00
30	30.97	30.73	30.48	30.24	30.00
31	32.00	31.75	31.50	31.25	31.00
32	32.98	32.73	32.49	32.24	32.00
33 34	34.01	33.76	33.20	33.25	33.00
35	35.00	34.75	34.20	34.25	34.00
1876					0-
36	37.02	36.77	36.51	36.26	36.00
37 38	38.01	37.76	37.50	37.25	37.00
39	40.01	39.76	39.50	39.25	38.00
40	41.01	40.76	40.20	40.52	40.00
41	41.98	41.74	41.49	41.25	41.00
42	42.98	42.74	42.49	42.25	42.00
43	43.97	43.73	43.48	43.24	43.00
44	44.98	44.73	44.49	44.54	44.00
45	45.97	45.73	45.48	45.54	45.00
46	46.96	46.72	46.48	46.24	46.00
47	47.96	47.72	47.48	47.24	
48	48.94	48.70	48.47	48.23	48.00
49 50	49.94	49.71	49.47	49.24	
30	50.94	50.70	50.47	50.53	50.00

			(Allemberry		
Indica- tion.	56°	57°	58°	59°	60°
51 52 53 54 55 56	51.94 52.92 53.92 54.93 55.92	51.71 52.69 53.69 54.70 55.69	51.47 52.46 53.46 54.46 55.46 56.46	51·24 52·23 53·23 54·23 55·23	51.00 52.00 53.00 54.00 55.00
57 58 59 60 61	57.91 58.90 59.90 61.90	57.68 58.68 59.68 60.67 61.67	57·46 58·45 59·45 60·45	57.23 58.23 59.23 60.22 61.22	57.00 58.00 59.00 60.00
62 63 64 65 66	62·90 63·90 64·90 65·90	62.68 63.67 64.68 65.67 66.66	62·45 63·45 64·45 65·45	62·23 63·22 64·23 65·22	62·00 63·00 64·00 65·00
67 68 69 70 71	67·89 68·88 69·89 70·86	67.67 68.66 69.67 70.65	67.44 68.44 69.44 70.43	67·22 68·22 69·22 70·22	67.00 68.00 69.00 70.00
72 73 74 75	72·86 73·86 74·86 75·86	72.65 73.65 74.65	72·43 73·43 74·43 75·43	72·22 73·22 74·22 75·21	72·00 73·00 74·00 75·00

Indica- tion.	56°	57°	58°	59°	60°
76 77 78 79	76.86 77.86 78.86 79.84	76.64 77.64 78.64 79.63	76·43 77·43 78·43	76·21 77·21 78·21	76.00 77.00 78.00
80 81 82	80·85 81·84 82·84	80.64 81.63 82.63	79.42 80.42 81.42 82.42	79.21 80.21 81.21 82.21	79.00 80.00 81.00 82.00
83 84 85	83.84 84.84 85.82	83.63 84.63 85.62	83.42 84.42 85.41	83.51 84.51 85.51	83.00 84.00 85.00
86 87 88 89	86.83 87.80 88.79 89.80	86.62 87.60 88.59 89.60	86·42 87·40 88·40 89·40	86.21 87.20 88.20 89.20	86.00 87.00 88.00
90 91 92	90·78 91·77 92·77	90·58 91·58 92·58	90·38 91·38 92·38	90.19	90.00
93 94 95 96	93.77 94.72 95.70	93.58 94.54 95.53	93·38 94·36 95·35	94·18	95.00
97 98 99	96·69 97·69 98·67 99·66	96·52 97·52 98·50 99·50	96·34 97·34 98·34 99·33	97.17 98.17 99.17	97.00
100	100.64	100.48	100.32	100.19	100.00

COMMERCIAL VALUE.

Indica- tion.	61°	62°	63°	64°	65°
1	0.96	0.91	0·87	0·82	0·78
2	1.95	1.90	1·84	1·79	1·74
3	2.95	2.89	2·84	2·78	2·73
4	3.94	3.89	3·83	3·78	3·72
5	4.94	4.87	4·81	4·74	4·68
6	5.93	5.86	5·80	5.73	5.66
7	6.93	6.86	6·78	6.71	6.64
8	7.92	7.85	7·77	7.70	7.62
9	8.92	8.84	8·77	8.69	8.61
10	9.91	9.82	9·73	9.64	9.55
11	10.90	10.81	10·71	10.61	10·52
12	11.90	11.80	11·70	11.60	11·50
13	12.89	12.78	12·68	12.57	12·46
14	13.88	13.77	13·65	13.54	13·42
15	14.87	14.75	14·62	14.50	14·37
16 17 18 19 20	15.87 16.86 17.85 18.84 19.83	15.74 16.72 17.70 18.68	15.60 16.58 17.56 18.52 19.48	15:47 16:44 17:41 18:36 19:31	15·34 16·30 17·26 18·20
21	20.82	20.64	20.45	20·27	20·09
22	21.81	21.62	21.42	21·23	21·04
23	22.80	22.60	22.40	22·20	22·00
24	23.80	23.59	23.39	23·18	22·98
25	24.79	24.59	24.38	24·18	23·97

Indica- tion.	61	0	62°	6	30	64	0	65°	July 1
26 27 28 29 30	26 27 28	•79 •78 •78 •77	25.5 26.5 27.5 28.5 29.5	6 2 6 2 5 2	5·36 6·34 7·34 8·32 9·31	26 27 28	15	24.9 25.9 26.9 27.8 28.8	0 0 7
31 32 33 34 35	31 32 33	77 77 77 77	30.5 32.5 33.5 34.5	3 3 4 3 4 3	0·32 1·30 2·31 3·30 4·30	31 32 33	06	29.8 30.8 31.8 32.8 33.8	3 5 4
36 37 38 39 40	36 37 38	77 76 76 76	35.5 36.5 37.5 38.5	2 3 3 3 2 3	5·31 6·29 7·29 8·28 9·32	36 37 38	·08 ·05 ·06 ·04 ·09	34.8 35.8 36.8 37.8 38.8	2
41 42 43 44 45	41 42 43	·77 ·77 ·77 ·77	40.5 41.5 43.5 44.5	4 4 4 4 4 4	0.30 1.31 2.30 4.31 4.31	41 42 43	·07 ·08 ·07 ·08 ·08	39.8 40.8 41.8 42.8 43.8	35
46 47 48 49 50	46 47 48	·77 ·78 ·77 ·77	45°5 46°5 47°5 48°5 49°5	5 4 5 4 5 4	5°32 6°33 7°32 8°32 9°32	46 47 48	·09 ·10 ·10	44.8 45.8 46.8 47.8 48.8	38 37 37

Indica- tion.	61	0	62	0	6	30	64	10	65	0
51 52		·78 ·78	50.	-	-	0.34	-	0.15		.90
53 54 55	53	·78 ·78 ·78	52° 53° 54°	56	53	3.34 4.33	53	2·11 2·12	52	·89 ·90
56 57	55 56	·78	55	56	5 5	5.34	50	5.12	54	.90
58 59 60	58	·78 ·78 ·78	58 59	·56 ·56	55	7:34 8:35 9:35	59	3.10	57	·92
61 62 63	61 62	·78 ·78 ·78	61 62	·56 ·56	6	2.35 1.35	6	2·13 1·13	60	1.61
64 65 66	64	·78 ·78	64	·56 ·57 ·57	6	3·35 4·35 5·35	6.	3·13 4·14 5·14	6	2.91 3.92
67 68 69	66	5.78 .78 3.79	66	·57 ·57 ·57	6	6·35 7·35 8·36	6	6·14 7·13 8·14	6	.93 .93
70   71	70	79	69 70	·57	6	9·36 0·36	6	9·14 0·15	68	3.93
72 73 74	73	.79 .79 3.79	72 73	·58 ·58	7 7	1·36 2·36 3·37	7 7	1·15 2·15 3·16	7:7:	0.94 1.94 2.95
75	74	1.79	74	.58	7	4:37	7	4.16	7:	3.92

Indica- tion.	61°	62°8	063°T	64 ° 8	65°
76 77 78	75.79 76.79 77.79	75.58 76.58 77.59	75·38 76·37 77·38	75·17 76·16 77·18	74·96 75·95 76·97
79 80 81	78·79 79·79 80·80	78·59 79·58 80·59	78·38 79·38 80·39	78.18	77.97 78.96 79.98
82 83 84	81.80 82.80 83.80	81·59 82·59 83·59	81·39 82·39	83.18	80.98 81.98 82.98
85 86 87	84·80 85·80 86·80	84.59	84·39 85·41 86·41	84.18	83.98 85.02 86.02
88 89 90	87.80 88.81 89.81		87·41 88·43 89·44	88.24	88.05
91 92 93	90.81 91.81 92.82	90.62 91.62 92.65	90.43 91.43 92.47	91.24	91.05
94 95 96	93.83 94.83 95.83	93.65 94.66 95.67	94.49	64.32	94.12
97 98 99	96·84 97·84 98·84	96.67	96.51	96.34	96.18
100	99.84	99.68	99.53	99:37	99.21

Indica- tion-	66°	67°	68°	69°	70°
1	0·75	2.62	0.68	0.64	0.61
2	1·69		1.60	1.56	1.51
3	2·68		2.57	2.51	2.46
4	3·66		3.54	3.48	3.42
5	4·61	4·55	4·48	4·4 <sup>2</sup>	4·35
6	5·59	5·51	5·44	5·36	5·29
7	6·56	6·49	6·41	6·34	6·26
8	7·54	7·46	7·38	7·30	7·22
9 10 11 12	8·52 9·45 10·42 11·39	8·44 9·35 10·32 11·28	8·35 9·25 10·21 11·18	8·27 9·16 10·11	8·18
13 14 15 16	12·35 13·30 14·24	13.18	13.05	12.01 12.93 13.85 14.80	11.90 12.81 13.72 14.66
17	16·16	17.88	15.87	15.73	15·59
18	17·11		16.80	16.65	16·50
19	18·04		17.72	17.56	17·40
20	18·97		18.64	18.47	18·30
21	19.91	21.62	19.56	19·38	19·20
22	20.85		20.47	20·28	20·09
23	21.81		21.42	21·23	21·04
24	22.79		22.40	22·21	22·02
25	23.77		23.38	23·19	22·03

Indica- tion.	66°	67°	68°	69°	70°
26 27 28	24·74 25·70 26·69	24·53 25·50 26·49	24·33 25·29 26·28	24·12. 25·09 26·08	23·92 24·89 25·87
29 30 31	27.66 28.64 29.66	27.45 28.43 29.44	27.24 28.23	27.03 28.02 29.01	26·82 27·81 28·80
32 33 34	30·62 31·63 32·62	30.41	30.50	30.99 30.99	29.78 30.77 31.76
35 36	33.62	33.40	33.19	32·97 33·97	32.76
37 38 39	35.59 36.60 37.58 38.64	35·37 36·37 37·37	35·16 36·15 37·15 38·21	34.94 35.92 36.94	34·7 <sup>2</sup> 35·7 <sup>0</sup> 36·7 <sup>2</sup>
40   41   42	39.62	38·42 39·41 40·41	39.19	37.99 38.98 39.98	37.77 38.76 39.76
43 44 45	41.62 42.63 43.63	41.41 42.41 43.41	41.19	40.98 41.98 42.98	40.76 41.76 42.76
46 47 48	44.65 45.66 46.65	44.43 45.44 46.44	44.22 45.23 46.22	44.00	43°79 44°79 45°79
49 50	47.65	47.43	47.22	47.00	46.78

Indica- tion.	66°	67°	68°	69°	70°
51 52 53 54 55	49.69 50.68 51.68 52.68	49·48 50·47 51·46 52·47	49·26 50·25 51·25 52·25	49.05 50.04 51.03 52.04	48.84 49.82 50.82 51.82 52.83
56 57 58 59	54·69 55·69 56·69	53°47 54°47 55°48 56°48 57°50	53·25 54·26 55·26 56·27 57·28	53.04 54.04 55.05 56.06 57.07	53.83 54.84 55.85 56.86
60 61 62 63 64	58·70 59·70 60·69 61·70 62·70	58·49 59·49 60·48 61·49	58·28 59·27 60·26 61·27	59.06 60.05 61.06 62.06	57.86 58.85 59.83 60.85 61.85
65 66 67 68	63·71 64·71 65·71 66·70	62·49 63·50 64·50 65·50 66·50	62·27 63·30 64·30 65·28 66·29	63·09 64·09 65·07 66·09	62·88 63·88 64·86 65·88
69 70 71 72	67·72 68·72 69·73 70·73	67·52 68·51 69·52 70·52	69·31 69·31 70·31	69·10 69·10	66·90 67·89 68·89 69·89
73 74 75	71.73 72.74 73.74	71·53 72·53 73·54	71·32 72·33 73·33	71.13	70.91 71.91 72.92

Indica- tion.	66	0	67	0	68	0	69°	70°
76 77 78 79	75	75	74 75 76 77	56	75 76	34 34 36 36	74·1 75·1 76·1 77·1	4 74.94 5 75.95
80 81 82	78 79 80	76 78 78	78 79 80	56 58 58	78 79 80	36 37 38	28.1 28.1	77.96 7 78.97 79.98
83 84 85 86	82	78 78 78 83	81 82 83 84	58	82	39 39 39 44	81·1 82·1 83·2	81.99
87 88 89 90	85 86 87	·83 ·83 ·86 ·88	85 86 87 88	64 67	85 86	45 46 49	85·2 86·2 87·3 88·3	6 85.07 7 86.08 0 87.11
91 92 93	90	·87 ·87 ·94	89 90 91	69	89 90 91	50	90·3 90·3	89·13 90·15 91·24
94 95 96 97	93	·96 ·98 ·00	92° 93° 94° 95°	81	94	·65 ·66 ·69	92·4 93·4 94·4 95·5	9 94.32
98 99 100	97 98	·02 ·04 ·06	96 97 98	86	96 97	71 73 76	96·5 97·5 98·6	5 96·39 7 97·41

Indica- tion.	71	0	72	0	73	0	74	00	75	0
1 2		·58	C	·56		53	10.00	·51		48
3	2	41	2	35		.30	2	.24	CONTRACT OF	19
4 5	3	36		30	No.	·24		.18		99
6	2	21		14		.06		.99		91
7	6	18	6	.10	6	.01	08 5	.93	08 5	85
8 9		08	0	.05		·97		·88	- A. II	.70
10		.96	8	·86		77		.67		57
11		.90		.80		.69	1 -	.59		•48
12 13		·85		74	100	.63	1	·52	1	·41 ·29
14		.68	0.	.55		.42		.29		.16
15	13	.59	13	.46	13	.33	13	.20	13	.07
16		.52		.38		.24		.10		96
17 18		·44		·29		.15		.89		·85
19		.24		.08		.92		.76		.60
20	18	.13	17	.96	17	.80	17	.63	17	.46
21	-	.02		.84		.66		.48	E	.30
22 23		.86		·72 ·67		·53		35		16
25 24		.83		.64		.46	1000	.27	1000	08
25		.80	4	61	0	42	N Doma	.23		.04

Indica- tion.	71	0	72	0	73	0	74	0	75	0
26 27 28	24	73 70 ·68	23 24 25	50	24	·36 ·31 ·29	24	17	22.	92
29 30 31	26 27	·63 ·61	26 27 28		26 27	·24 ·22	26 27	·05 ·02 ·02	25° 26°	86
32 33 34	29 30	·58 ·57 ·56	29 30	38	29 30	·19	28 29	.99 .97 .97	28	79
35 36 37	32	·56	3 <sup>2</sup> 33	35	32	·15	31	·94 ·94 ·89	31	
38 39 40	35	·49 ·52 ·56	35 36	29	35 36	·08	34 35	·88 ·90 ·95	34	67 70 74
41 42 43	39	·56	39	35 35 34	39	·15	38	.94 .94 .93	37 38 39	74 73 72
44 45 46	4I 42	·55 ·56	41 42	34.36	42	·14 ·15	41	.93 .95	40	72
47 48 49	45	·58 ·58	44 45	37 38 38	44 45	·17	43	·96 ·97 ·97	43 44 45	75 76 77
50		.61	47	40	47	.20	46	.99	46	79

Indica- tion.	71	0	72	0	73	0	74	0	75	0
51 52	48	63		·43		·22		.02	47 · 48 ·	
53		61		41		20		.00	49	
54		61		41		.20		.00	50.	79
55	52	62	52	42	52	·2 I	52	.01	51.	
56		62	-	42	00	21	20	.01	52.	
57		64		43		23		.02	53°	
59		.65		45		.24		.04	55.	
60	57	.65	-	44	57	24	-	.03	56.	
61	58	.64	58	43	58	.23	58	.02	57	81
62		.62		42		·2 I	-	.01	58.	
63 64		65		44		·23		.03	59.	
65		.67		47		.26		.06	61.	
66	63	.67	63	47.	863	.26	63	.06	62.	85
67		.66		.46		.26	3	.06	63.	-
68		.68		47		.27		.06	64.	
69 70	101 100	70		·50 ·48		·29 ·28	1 3 3 1 1	.09	65.	
	- 1		,	.48	6.8	.28	1	Va.		500
$\begin{vmatrix} 71 \\ 72 \end{vmatrix}$		.69		49	30.0	.28	1.0	.08	67.	
73		71		·51		.30		.10	69.	
74		71	1	.21	71	.30	71	.10	70.	90
75	72	.72	72	.25	72	.31	72	.II	71.	91

Indica- tion.	71	0	72°	73°	74°	75°
76 77 78 79	74 75	·72 ·74 ·75 ·75	73.52 74.54 75.55 76.55	73.33 74.33 75.36 76.36	73.13 74.13 75.16 76.16	72·93 73·93 74·96 75·96
80 81	77	·76	77·56 78·58	77·37 78·38	77.17	76.97
82 83 84 85	80	·78 ·79 ·80 ·81	79.58 80.60 81.61 82.62	79°39 80°40 81°41 82°44	79.19 80.21 81.22 82.25	78.99 80.01 81.03 82.06
86 87	8 <sub>3</sub> 8 <sub>4</sub>	·86 ·88	83·67 84·69	83·48 84·49	83.29	83.10
88 89 90	86	·89 ·93	85·71 86·74 87·77	85·52 86·56 87·58	86.37	85·15 86·19 87·21
91 92 93	91	·94 ·98 ·07	88·76 89·81 90·90	88·57 89·63 90·73	90.56	
94 95 96	93	.14	91.94 92.98	91·78 92·81 93·84	92.65	93.22
97 98 99	96	·20 5·23 7·26	95.04 96.07 95.04		95.76	96.62
100	98	3.31	98.12	98.00	97.84	97.66

Ind.ca- tion.	76	0	77	0	78	30	7	9 •	80	) °
1 2 3	I	·46 ·26 ·14	I	·44 ·23 ·09	1	.43	27	0·41 1·16	7 1	.12
5	3 3	.06	3 3	·85	3	·93 ·79	36	2·87 3·72	2 2	.65
6 7 8	5	·83	5	·76 ·69 ·62	5	·68 ·60 ·54	30	4·61 5·52 6·45	27 9	1.53 1.44 5.36
9 10 11	8 8	·60 ·47	8	·50 ·36 ·26	8	·41 ·26 ·16	8.8	9.05 9.05	8 8	3.05
12 13 14	11	·29 ·17	10	·18 ·04 ·91	10	·06 ·92 ·78	1	9·95 0·79 1·66	10	0.83
15 16 17	13	·93 ·82 ·71	13	·80 ·68 ·56	12	·66	881	2·53 3·39 4·27	BRI	3.25
18 19 20	15	·59 ·44 ·29	15	·44 ·29	15	.29	I	5·14 5·98 6·80	I I	1.99 5.82 5.63
21 22	18	.13	17	·96 ·82	17	·78 ·64	I	7·61 8·47	17	7.44
23 24 25	20	.94 .90 .86	20	·76 ·72 ·69	20	·51 ·51	2	9.41 0.36 1.34	20	0.18

Indica- tion.	76°	77°	78°	79°	80°
26 27 28	22·80 23·74 24·72	22·62 23·56 24·54	22.44	22·26 23·20 24·17	23.02
29 30	25.68	25·49 26·46	25.31	25.12	24·94 25·92
31 32 33 34	27.64 28.61 29.59 30.58	27.46 28.42 29.40 30.39	27°27 28°24 29°22	27.09 28.05 29.03 30.02	26.91 27.87 28.85 29.83
35 36 37	31.55	31-36	32.19	30.98	30.79
38 39 40	33.49 34.48 35.51 36.55	33°30 34°28 35°32 36°36	34.09 32.15 36.16	33·89 34·93 35·97	32.73 33.70 34.74 35.78
41 42 43	37.54 38.53 39.52	37.35 38.34 39.33	39.13	36·96 37·95 38·94	36·76 37·75 38·74
44 45	40.52	40.33	40.13	39°94 40°96	39.74 40.76
46 47 48 49	42°56 43°56 44°56 45°57	42·36 43·36 44·37 45·38	42·16 43·17 44·17 45·18	41.96 42.97 43.98 44.99	41.76 42.78 43.78 44.79
50	46.59	46.39	46.50	46.00	45.80

Indica- tion.	76	3 0	77	0	78	0	79	00	80	Todbor-
51 52 53	48	7·61 8·60	48	·42 ·40 ·39	48	·22 ·20 ·20	48	.00	46.8 47.8 48.8	30
54 55	5	0.29	50	·39 ·40	50 51	19	49	.99	49"	19
56 57 58	5:	2·60 3·62 4·64	53 54	·41 ·42 ·43	53 54	·21 ·22	53 54	.02	51.8	32
59 60 61	5	5.63 6.62 7.61	56	·43 ·42 ·41	56	·22 ·22	57	.02	54.	82
62 63 64	5	8.60 9.62 0.64	59 60	°40 °42	59 60	.19	59	.02	57° 58° 59°	82
65 66 67	6	2·65 3·66	62	°45	62	·26 ·26 ·26	62	·06 ·06	61.	86 86
68 69 70	6	4·66 5·69 6·67	65	·47 ·49 ·47	65	·27 ·28	6	1.08 3.08 5.07	63· 64· 65·	88
71 72 73	6	7·67 8·68 9·70	68	·47 8·48	68	·28 ·29	68	0.10 0.10	66· 67· 68·	89
74 75	7	0.70	70	.51	70	.30	70	1.10	69·	

Indica- tion.	876	0	77	0	78	0	79	0	80	0
76 77 78 79 80	72°7 73°7 74°7 75°7	73	73 74 75	53 54 57 57 57 58	73 74 75	·34 ·34 ·37 ·38 ·39	73 74 75	·14 ·15 ·18 ·18	72 73 74	94 95 98 99
81 82 83 84 85	77.8 78.8 79.8 80.8	30 30 32 34	77 78 79 80	·61 ·63 ·65 ·69	77 78 79 80	·41 ·43 ·47 ·50	77 78 79 80	·22 ·22 ·24 ·28	77 78 79 80	·03 ·05 ·09 ·13
86 87 88 89 90	82·9 83·9 84·9 86·6	93	82 83 84 85	73 75 79 83 85	82 83 84 85	·54 ·56 ·61 ·65	82 83 84 85	·36 ·38 ·43 ·47 ·48	82 83 84 85	·17 ·20 ·25 ·29
91 92 93 94	90.2 90.2 88.0	22 27	87 88 90 91	·86 ·95 ·05	87 88 89 90	·69 ·78 ·89 ·94	87 88 89 90	·52 ·61 ·72 ·78	87 88 89 90	
95 96 97 98 99	92°3 94°4 95°4	36 HI	92 93 94 95 96	25	93 94 95	.05 .10 .13	92 93 94	·83 ·89 ·94 ·97 ·00	91 92 93 94	73
100	97:5		-	35	-	.20	-	.04	96	

-	Indica- tion-	81	0	82	0	83	0	84 9	0	85	0
	$\frac{1}{2}$		·38		36		35	0.3	-		32
ı	3		.91		86	- 11 feet - 1	.82	0.0	-		73
	4	2	.75		69	The second	.64	2.5	8	2	52
ı	5		.58		52		45	3:3	D.		32
	6 7		.46		39		·3I	4.2			17
	8		.27	6.	18		.08	5.0			90
-	9	7	.II		OI	1.5	92	6.8	32	6	72
١	10		.95	-	85		75	7.0		100	55
1	$\begin{vmatrix} 11 \\ 12 \end{vmatrix}$		·83		73	100	·62	8.9			41
1	13		.55	-	43		.31	10.1		10.	
	14	II	.40	II	27	11	.12	11.0	02	10	89
	15	1	•26	12		100	.99	11.8		11.	572
1	16 17		.11		98	12.50	.70	13.7		13	- 1
1	18		.84		70		.55	14.7			26
	19		.67		51		.36	15.5		15	05
	20	1	47	- Si	.31		.12	15.9		15	
-	21 22		·28	,	96	ALC: UNKNOWN	95	16.7		16	
1	23		.06		99	18	.73	18.		18	
-	24		.01	19	85	19	.68	19.	52	19	35
1	25	20	.99	20	82	20	.65	20.7	to	20	31

Indica- tion.	81	0	82	0	8	3	0	8	4 °	1	8	5°	
26 27 28	21.0	85		68 65	2 2	3.	58 51 47	2	1·4 2·3	40	2 2	3 · I 2 · I	7 3
29 30 31	24.	75	25.	56	2	5·.	4 <sup>2</sup> 4 <sup>0</sup> 39	2	4·2 5·2	3	2	4·c	6
32 33 34 35	29:0	67	27· 28· 29· 30·	50 47	2 2	8·	35 32 29 26	2 2	3.1 9.1 9.1	5 I	2 2	7.9 8.9 9.9	7
36 37 38	31.	55	32.	41 37 34	3	3.	24 20 15	3	2.0	7	3	0·8 1·8 2·7	4
39 40 41	34° 35°	58	34° 35°	4I 39	3	5·	19 23 21	3	6·c	2	3	3·8 4·8 5·8	6
42 43 44 45	37° 38° 40°	55	37° 38° 39° 40°	36	3	<ol> <li>8.</li> </ol>	20 18 17 20	3	7.9	8	3	6·8 7·8 9·8	9
46 47 48	41· 42· 43·	59 59		40	4	3.	20 22 22	4	3.0	3	4	0.8	4
49 50	44.		44				23 24	1	4°C	-	4	3·8 4·8	7

14.					
Indica- tion.	81°	82°	83°	84°	85°
51	46.64	46.55	46.26	46.07	45.88
52	47.61	47.42	47.23	47.04	46.85
53	48.61	48.42	48.23		47.85
54	49.60	49.41	49.21	49.02	48.83
55	50.60	50.41	50.51	50.02	49.83
56	51.63	51.43	51.24	51.04	50.85
57	52.63	52.44	52.24	52.05	51.86
58 59	53.63	53.44	53.24		52.86
60	54.63	54.43	54.54	54.04	53.85
	30200				
61 62	56.60	56.41	56.21	56.02	55.82
63	57.60	57.40	57.21	58.04	56.82
64	59.65	59.45	59.26		58.87
65	60.67	60.47	60.28	60.08	59.89
66	61.67	61.47	61.28	61.08	60.89
67	62.67	62.47	62.28	62.08	61.89
68	63.68	63.48	63.29	63.09	62.89
69	64.68	64.49	64.29	64.10	63.90
70	65.68	65.48	65.29	65.09	64.90
71	66.69	66.50	66.30	66.11	65.92
72	67.70	67.50	67.31	67.11	66.92
73	68.71	68.51	68.32	68.12	67.93
74	69.72	69.52	69.33	69.13	68.94
75	70.73	70.24	70.35	70.16	69.97
1		1	(	1	

Indica- tion.	81°	82°	83°	84°	85°
76	71.75	71·56	71·36	71·17	70.98
77	72.76	72·57	72·38	72·19	72.00
78	73.79	73·60	73·40	73·21	73.02
79	74.80	74·61	74·41	74·22	74.03
80	75.81	75·62	75·43	75·24	75.05
81	76·84	76.65	76·45	76·26	76.07
82	77·84	77.65	77·47	77·28	77.09
83	78·87	78.69	78·50	78·32	78.14
84	79·91	79.73	79·54	79·36	79.18
85	80·95	80.76	80·58	80·39	80.21
86	81·99	81.81	81.63	81·45	81·27
87	83·02	82.85	82.67	82·50	82·32
88	84·07	83.89	83.72	83·54	83·36
89	85·11	84.93	84.76	84·58	84·40
90	86·13	85.96	85.78	85·61	85·44
91	87·18	87.01	86.85	86.68	86·51
92	88·27	88.11	87.94	87.78	87·61
93	89·38	89.22	89.05	88.89	88·72
94	90·45	90.29	90.12	89.96	89·80
95	91·50	91.34	91.17	91.01	90·84
96	92·57	92·40	92·24	92.07	91·91
97	93·62	93·47	93·29	93.13	92·97
98	94·64	94·48	94·33	94.17	94·02
99	95·69	95·54	95·38	95.23	95·08
100	96·74	96·59	96·45	96.30	96·15

6		-								
Indica- tion.	86	0	87	0	88	0	89	0	90	0
1		31		30		29		28		27
2 3		93		91		88 60	1000000	86 56		83
4		69 47		65 41		36		30		52
5		26		20		13		07		10
6	4.	10	4.	03	3.	97	3.	90		83
7		97		89		81		73		65
8		81		72		63		54		45
9		6 <sub>3</sub>		54 35		44 26		35	100	06
12		-		-	,		1		,	1
11 12		30		19		09	7	98		87
13		13 95		83		90 71		59		47
14	10.	915	10.		10.		10		10	
15	11.	59	11.		11.	-	11.	21	11.	08
16	12	44	12.	30	12.	17	12	03	11	90
17	13.	27	13.	13	13.		12		12.	72
18	14		13.		13.		13.	-	13.	
19 20	14	90	14		14.	10	14		14.	
			15.						1	
$\begin{vmatrix} 21 \\ 22 \end{vmatrix}$		47	16.		16.		16.		15.	
23	17		17:		16.		17.		17.	
24	19		19.	,	18.		18.		18.	
25	20		20.	-	19.		19.		19.	
1										

Indica- tion.	6 0	87°	88°	89 °	90°
27 2 28 2 29 2	1.08 2.01 2.97 3.92 4.90	20.92 21.85 22.81 23.76 24.74	20·77 21·70 22·65 23·59 24·57	20.61 21.54 22.49 23.43 24.41	20.45 21.38 22.33 23.27 24.25
31 2 32 2 33 2 34 2	5·88 6·84 7·80 8·76 9·73	25.71 26.67 27.63 28.59 29.57	25.55 26.51 27.47	25·38 26·34 27·30 28·26 29·24	25.22 26.18 27.13 28.09 29.07
37 3 38 3 39 3	0·71 1·67 2·62 3·65 4·69	30.54 31.50 32.45 33.47 34.51	31.35		30·04 30·98 31·94 32·95 33·99
$\begin{vmatrix} 42 & 3 \\ 43 & 3 \\ 44 & 3 \end{vmatrix}$	5·67 6·65 7·62 8·61 9·64	35.50 36.48 37.44 38.43 39.46	36·30 37·27 38·25	35.15 36.13 37.09 38.07 39.10	34·98 35·95 36·91 37·89 38·92
47 4 48 4 49 4	.0·65 .1·66 .2·66 .3·67 .4·69	40·48 41·48 42·48 43·49 44·50	41.30	42.11	39.95 40.94 41.93 42.94 43.95

Indica- tion.	86°	87°	88°	89 °	90°
51 52 53 54 55	45.70 46.67 47.66 48.65 49.64	46·48 47·48 48·46	45°33 46°30 47°29 48°28 49°27	45.14 46.11 47.11 48.09 49.09	44.96 45.93 46.92 47.91 48.90
56 57 58 59 60	50.66 51.67 52.67 53.66 •54.64	51·48 52·48 53·47	50·29 51·30 52·30 53·28 54·27	50·10 51·11 52·11 54·09	49.91 50.92 51.92 52.90 53.90
61 62 63 64 65	55.63 56.63 57.66 58.68 59.70	56·44 57·47 58·49	55.25 56.25 57.28 58.31 59.33	55.06 56.06 57.09 58.12 59.15	54·87 55·87 56·90 57·93 58·96
66 67 68 69 70	60·70 61·69 62·70 63·71 64·71	61.49	60·33 61·30 62·31 63·33 64·33	60·14 61·10 62·12 63·14 64·14	59.95 60.90 61.93 62.95 63.95
71 72 73 74 75		68.56	65·36 66·36 67·37 68·38 69·40	65·17 66·17 67·18 68·19 69·21	64·98 65·98 66·99 68·00 69·02

Indica- tion.	86	0	87	0	88	0	89	0	90°
76 77 78 79	70° 71° 72° 73°	81 82 84	71	64	72	42 44 45 47	70° 71° 72° 73°	25	70.04 71.06 72.09 73.09
80 81 82 83	74° 75° 76° 77°	86 88 91 96	74 75 76 77	68 70 73 78	74° 75° 76° 77°	49 51 55 61	74° 75° 76° 77°	33 37 43	74·12 75·14 76·19 77·25
84 85 86 87	80 81 82	09	78 79 80 81	82 85 92 97	79° 80° 81°	64 68 74 80	79 80 81	57	78·28 79·32 80·39 81·45
88 89 90 91	84 85 86	35	84 85 86	11	83 84 86	83 88 94	84	7° 78 86	82.47 83.53 84.61 85.70
92 93 94 95	90	·56 ·64 ·68	88 89 90		88 89 90	12 24 32 37	88 89 90	96	86·80 87·92 89·00 90·06
96 97 98 99 100		81	93 94	59 66 71 76 84	92 93 94	44 50 56 61	93 94	·28 ·35 ·40 ·45 ·53	91·12 92·19 93·25 94·29 95·38

Indica- tion.	91°	92°	93°	94°	95°
1 2 3	0.26 0.81 1.48	0·25 0·79	0·24 0·76 1·41	0·23 0·74 1·37	0·22 0·72 I·33
5 c	2.20	2.15	2.85	2.79	2.24
6 7 8 9 10	3·76 4·57 5·36 6·17 6·96	3·70 4·49 5·28 6·08 6·86	3.63 4.42 5.19 5.98 6.77	3.57 4.34 5.11 5.89 6.67	3·50 4·26 5·02 5·80 6·57
11 12 13 14 15	7.76 8.56 9.35 10.16 10.96	7.66 8.45 9.24 10.04	7.55 8.34 9.12 9.91	7·44 8·23 9·01 9·79	7:34 8:12 8:89 9:67 10:46
16 17 18 19 20	11.77 12.59 13.40 14.17 14.94	11.64 12.45 13.26 14.03 14.79	11·51 12·32 13·13 13·89 14·65	11·38 12·18 12·99 13·75 14·50	11·25 12·05 12·85 13·61 14·36
21 22 23 24 25	15·70 16·51 17·45 18·40	15·56 16·36 17·30 18·26	15·41 16·22 17·15 18·11	15·27 16·07 17·00 17·97 18·95	15·12 15·92 16·85 17·82 18·80

Indica- tion.	91°	92°	93°	94°	95°
26 27 28 29	20·30 21·23 22·18 23·12	20·15 21·08 22·03	20·00 20·93 21·87 22·83	19.85 20.78 21.72 22.68	19.70 20.63 21.57 22.53
30	24·10	23.95	23.79	23.64	23.49
31	25·06	24.90	24.74	24.58	24.42
32	26·02	25.86	25.71	25.55	25.39
33	26·98	26.82	26.67	26.51	26.36
34	27·94	27.78	27.63	27.47	27.32
35	28·91	28·75	28.60	28·44	28·28
36	29·88	29·72	29.56	29·40	29·24
37	30·82	30·66	30.49	30·33	30·17
38	31·77	31·61	31.44	31·28	31·11
39	32·79	32·62	32.46	32·29	32·13
40 41 42 43	32.79 33.83 34.81 35.78 36.74	33.67 34.65 35.62 36.57	33.50 34.48 35.45 36.40	33·34 34·32 35·29 36·23	34·15 35·12 36·06
44	37.72	37.55	37·38	37·21	37.04
45	38.75	38.58	38·41	38·24	38.07
46	39.78	39.60	39·43	39·25	39.08
47	40.77	40.59	40·42	40·24	40.07
48	41.76	41.29	41.41	41·24	41.07
49	42.77	42.29	42.42	42·24	42.07
50	43.77	43.60	43.42	43·25	43.07

Indica- tion.	91	0	92	0	93	0	94°	95°
51 52 53 54 55	45 46 47	·78 ·75 ·74 ·73 ·72	45 46 47	60 57 56 55 54	45 46 47	43 40 39 38	44.25 45.22 46.21 47.20 48.17	45.04 46.03 47.02
56 57 58 59 60	49 50 51 52	73 ·74 ·74 ·72 ·72	49 50 51 52	·54 ·56 ·56 ·54 ·53	49 50 51 52	·36 ·37 ·37 ·36 ·35	49·17 50·19 51·19 52·18	48.99 50.01 51.01 52.00
61 62 63 64	54 55 56 57	·69 ·68 ·72 ·75	54 55 56 57	·51 ·50 ·54 ·57	54 55 56 57	·32 ·31 ·35 ·39	54·12 55·13 56·13	53.96 54.94 7 55.99 1 57.03
65 66 67 68 69	59 60 61	3·78 0·77 0·72 0·75 0·76	59 60 61	·60 ·59 ·55 ·56 ·57	59 60 61	·41 ·40 ·37 ·38 ·39	58·2 59·2 60·2 61·1 62·2	2 59.04 0 60.02 9 61.01
70 71 72 73	64 65	:76 :79 :79 :81	6 <sub>4</sub>	·61 ·61 ·62	63 64 65	·42 ·42 ·44	63·2 64·2 65·2	63.02 4 64.05 4 65.05
74 75	1	7·82 3·84		·63	67	45	68.2	

12
·19 ·20 ·25 ·30
·36 ·40 ·45
·52 ·56 ·60 ·71
·80 ·89
·13 ·21 ·29
·44 ·51 ·59 ·66

Indica- tion-	96°	97°	98°	990	100°
1 2 3 4 5 6 7 8 9	0·21 0·70 1·30 1·97 2·69 3·44 4·19 4·94 5·71 6·47	0·21 0·68 1·27 1·93 2·64 3·37 4·12 4·86 5·63 6·38	0·20 0·66 1·24 1·89 2·58 3·31 4·04 4·79 5·54 6·28	0·20 0·64 1·21 1·85 2·53 3·24 3·97 4·71 5·46 6·19	0·19 0·62 1·18 1·81 2·48 3·18 3·90 4·63 5·37 6·09
11 12 13 14 15	7·24 8·01 8·78 9·55	7·14 7·91 8·67 9·44 10·22	7.04 7.80 8.56 9.32 10.10	6·94 7·70 8·45 9·21 9·98	6·84 7·59 8·34 9·09 9·86
16 17 18 19 20	11·13 11·92 12·72 13·48 14·24	11.00 11.80 12.59 14.09	10.88 11.67 12.47 13.21 13.95	10.75 11.55 12.34 13.08 13.82	10.63 11.42 12.21 13.68
21 22 23 24 25	14.98 15.78 16.72 17.68 18.66	15.64 16.58 17.54	14·71 15·51 16·45 17·41 18·39	14·58 15·37 16·31 17·27 18·25	14·44 15·23 16·18 17·13 18·11

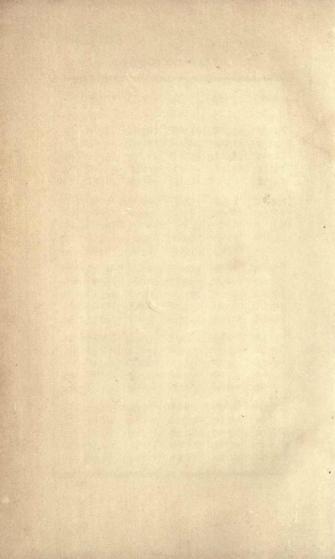
Indica- tion.	096	0	97	0	98	0,	99	05	100	0°
26 27 28	21	49	20 21	·43 ·35 ·29	20 2 I	·30 ·22 ·16	20 21	·16 ·08	19	·03 ·94 ·88
29   30   31	23	35	23	·24 ·20	23	.00	22	.95 .91 .87	22	·81 ·77
32 33 34	25 26 27	25 21	25 26	·11	24	·96 ·92 ·88	24	·82 ·78 ·73	24 25	·68 ·63 ·58
35 36 37	28	.09	27	·98	27 28	·83	27 28	·68	27	·53
38 39 40	30 31	.02 .95 .98	30 31	·86 ·79 ·82 ·86	30 31	·64 ·67 ·71	30 31	·55 ·48 ·51	30	·40 ·32 ·36 ·39
41 42	33 34	96	33 34	·83 ·80	33 34	·68 ·63	33 34	·52	33 34	·36
43 44 45		.90 .88	36	·74 ·72 ·75	36	·58 ·56 ·58	36	·42 ·40 ·42	36	·26 ·24 ·26
46 47 48	39	.90 .90	39	75	39	·58 ·57 ·57	39	·42 ·41	39	·25 ·24 ·24
49 50	41	.90	41	73	41	·56	41	39		22

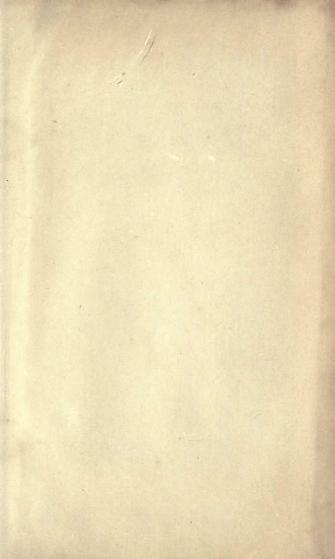
Indica- tion.	96	00	97	0	98	00	99	0	100°
51 52	44	.90	44	73	44	·57	44	·40 ·36	43.23
53 54 55	46	·86 ·84 ·81	46	·69 ·67 ·63	46	·51 ·49 ·46	46	·34 ·32 ·28	45·17 46·14 47·10
56 57 58	49	·81 ·83 ·84	49	·64 ·65 ·67	49	·46 ·48 ·50	49	·29 ·30	48·11 49·12 50·16
59 60	5 I 5 2	·82 ·80	5 I 5 2	·64 ·62	5 I 5 2	·47 ·45	5 I 5 2	·29 ·27	21.11
61 62 63	54	·78 ·76 ·81	54	·60 ·58 ·63	54	·43 ·41 ·46	54	·25 ·23 ·28	53.07 54.05 55.10
64 65 66	57	·85 ·87 ·86	57	·67 ·69	57	·50 ·52	57	·32 ·34 ·32	56·14 57·16
67 68	59	·84 ·83 ·83	59 60	·66	59 60	.48	59 60	.30	59.12
69   70   71	62	·84 ·87	62	·64 ·66	62	·46 ·48	62	·27 ·30	61·09 62·12
72 73 74	64	·87	65	·69	64	·52	64	34	64·16 65·17 66·18
75	1	.92		74		.56		.38	A 17 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -

Indica- tion.	96°	97°	98°	99°	100°
76	68·94	68·76	68·58	68·40	68·22
77	69·96	69·78	69·60	69·42	69·24
78	70·99	70·81	70·64	70·46	70·28
79	72·01	71·83	71·65	71·47	71·29
80	73·02	72·85	72·67	72·50	72·32
81	74.07	73.90	73:72	73:55	73°37
82	75.13	74.95	74:78	74:60	74°43
83	76.19	76.02	75:84	75:67	75°50
84	77.23	77.06	76:90	76:73	76°56
85	78.28	78.11	77:95	77:78	77°61
86	79°35	79·18	79.01	78·84	78.67
87	80°39	80·22	80.04	79·87	79.70
88	81°44	81·28	81.12	80·96	80.80
89	82°55	82·39	82.23	82·07	81.91
90	83°64	83·48	83.33	83·17	83.01
91	84·73	84·57	84·42	84·26	84·10
92	85·85	85·69	85·54	85·38	85·22
93	86·98	86·82	86·67	86·51	86·36
94	88·06	87·90	87·75	87·59	87·44
95	89·14	88·98	88·83	88·67	88·52
96 97 98 99 100	90·22 91·29 92·36 93·44 94·51	90·07 91·14 92·22 93·29 94·36	92.07	92.93	91.78

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