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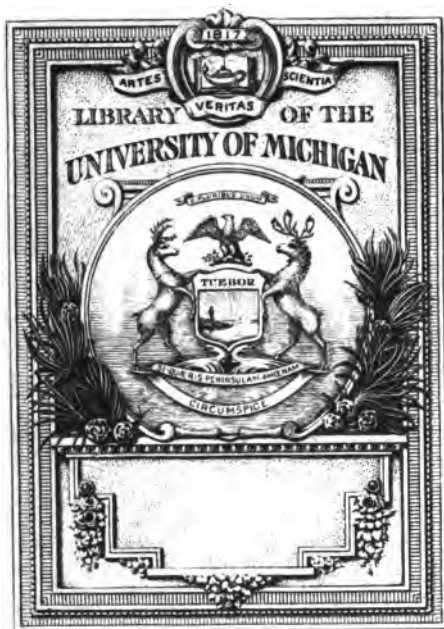
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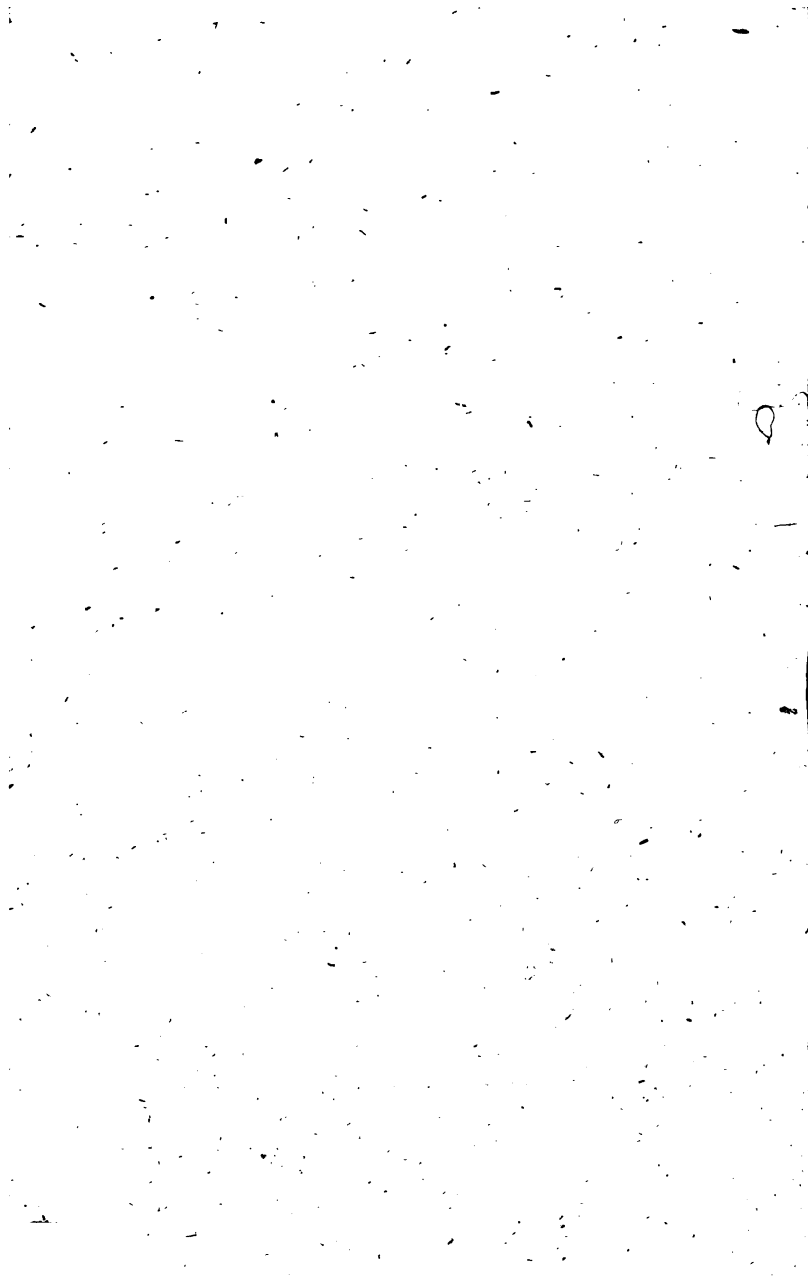
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1775

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ADRIAN<sup>A</sup> VLACQ.

Tabellen

der

SIN V V M,

TANGENTIVM,

SECANTIVM: 

Logarithmi der Sinuum  
Tangentium und der Zahlen

von 1 bis 10000.

Samt einer Methode, vermittelst dieser  
Tabellen die geradelinichten und sphärischen Triangel  
wie auch allerhand astronomische Fragen  
aufzulösen.

Neue und verbesserte Auflage

von

Johann Jacob Hentschen.

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Frankfurt und Leipzig,  
verlegt Johann Georg Fleischer.

1775.

nd

Hist. & rationes  
Hugendukel  
7-21-31  
24659



## Vorbericht.

Df 4-6-40

**S**ch habe bey dieser neuen Auflage  
der Tabellen der Sinuum, Tan-  
gentium und Secantium, verschiedne  
Ausgaben, welche in dem vorigen Jahr-  
hunderte Anno 1651 zu Leyden, Anno  
1665 zu Haag, An. 1673 zu Amsterdam  
bekannt gemacht worden sind, wie auch  
den Canonem Magnum Triangulorum



## Vorbericht.

Logarithmicum von eben diesem Vlacq zu Rathe gezogen, um die vielen Druckfehler der vorigen Ausgabe von Anno 1748 zu verbessern. Es ist desto nöthiger gewesen, diesen Canonem mit möglichster Sorgfalt richtig zu machen, und zugleich den Gebrauch dieser Tabellen aufs neue zu übersetzen, je mehrere Mängel ich bey vielen Ausgaben dieses Jahrhunderts gefunden habe. Leipzig den 24. Febr. An. 1757.

Johann Jacob Hentsch.

## Das I. Capitel.

## Von dem Gebrauche dieser Tabellen.

**E**s sind die folgenden Tabellen zweyerley. Die erste enthält die Sinus, Tangentes und Secantes von jedem Grade und jeder Minute des Quadranten, dessen Semidiameter aus 1000000 Theilen besteht, wie auch die Logarithmos der Sinuum und Tangentium; wosbey die Logarithmi der Secantium weggelassen worden sind, weil die trigonometrischen Rechnungen ohne Hülfe derselben mit eben so leichter Mühe angestellt werden können. Die zwote Tabelle begreift die Logarithmos der natürlichen Zahlen von 1 bis 10000.

Vermittelst dieser Tabellen kann ein jedes Dreieck auf zweyerley Weise, nämlich entweder durch die gemeinen Zahlen der Sinuum, Tangentium und Secantium oder durch die Logarithmos derselben herchnet werden.

Bei der Regel de Tri ist der Unterscheid der trigonometrischen Rechnung durch gemeine Zahlen, und durch die Logarithmos derselben folgender: Wenn man mit den gemeinen Zahlen der Sinuum und Tangentium rechnen will; so multipliciret man die andere Zahl durch die dritte, und dividiret das Product durch die erste gegebene Zahl, um die 4te begehrte Zahl zu haben.

Wenn man mit den Logarithmis derselben rechnen will; so muß man zu dem Logarithmo der andern Zahl den Logarithmum der dritten Zahl addiren, und von der Summe den Logarithmum der ersten Zahl abziehen; so bleibt der Logarithmus der 4ten Zahl übrig, welcher, wenn er in diesen Tabellen gehöriger maassen aufgesucht wird, die 4te verlangte Zahl zeigen wird.



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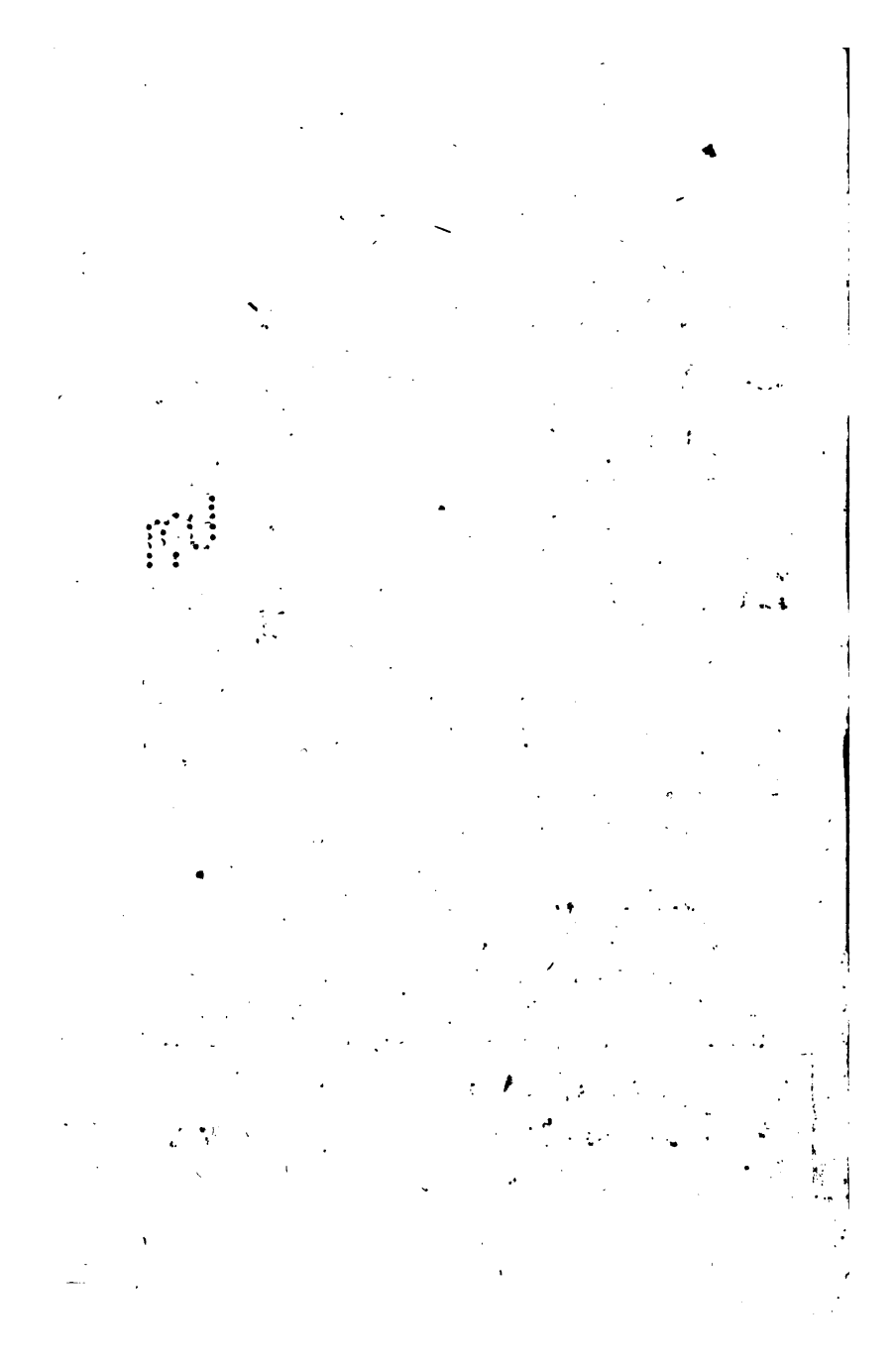
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Hist. & scient.  
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Wenn man mit den Logarithmis derselben rechnen will; so muß man zu dem Logarithmo der andern Zahl den Logarithmum der dritten Zahl addiren, und von der Summe den Logarithmum der ersten Zahl abziehen; so bleibt der Logarithmus der 4ten Zahl übrig, welcher, wenn er in diesen Tabellen gehöriger maassen aufgesucht wird, die 4te verlangte Zahl zeigen wird.



Weil aber die letzte Tabelle nur die Logarithmos der natürlichen Zahlen von 1 bis 10000 in sich enthält, so will ich hiet die Art und Weise zeigen, wie der Logarithmus einer jeden Zahl, welche über 10000000 nicht steigt, gefunden werden soll.

### Die erste Aufgabe.

Für eine jede Zahl, welche über 10000000 nicht steigt, den Logarithmum zu finden.

### Regeln.

1. Suchet nämlich in der letzten Tabelle einen Logarithmum für die ersten vier Ziffern der gegebenen Zahl.
2. Ziehet den gefundenen Logarithmum von dem in besagter Tabelle nächstfolgenden Logarithmo ab; so habt ihr die Differenz dieser beyden Logarithmorum.
3. Multipliciret die gefundene Differenz in die übrigen Ziffern der gegebenen Zahl, und schneidet von dem Producte zur Rechten so viel Ziffern ab, als übrig geblieben sind.
4. Den übrigen Theil des Products addiret zu dem erst gefundenen Logarithmo; so wird die Summe der begehrte Logarithmus seyn, wenn man nur vorher die erste Ziffer verändert hat, welche allezeit um 1 kleiner seyn muß, als die Anzahl der Ziffern, woraus die ganze gegebene Zahl besteht.

### Exempel.

Man begehret den Logarithmum von der Zahl 3567894; so suche ich erst den Logarithmum von 3567, welcher 3.5523031 ist, ziehe ihn von dem nächstfolgenden Logarithmo 3.552428 ab; so bleibt die Differenz 1217. Diese Differenz multiplicire ich in die übrigen Ziffern der gegebenen Zahl, nämlich in 894, kömmt heraus 1087998,  
schneis

schneide davon 998 ab, und addire den übrigen Theil des Products, nämlich 1087, zu dem erst gefundenen Logarithmo 3. 5523031, so ist die Summe 3. 5524118. Endlich, wenn die erste Ziffer 3 in 6 verwandelt wird; so ist der Logarithmus der gegebenen Zahl 6. 524118.

Und so der Logarithmus der Zahl 125607 ist 5. 0990137, und der Logarithmus der Zahl 2358009, ist der Logarithmus 6. 3725454.

Anmerkung.

Wenn die gegebene Zahl  $3\frac{567894}{1000000}$ , oder  $35\frac{67894}{1000000}$ , oder  $356\frac{7894}{1000000}$  ist; so sind die Logarithmi eben diejenigen, welche die ganze Zahlen 3567894 haben, ausgenommen die erste Figur, nämlich 0. 5524118, 1. 5524118, 2. 5524118 etc.

Wenn eine ganze Zahl mit einem Decimalbruch zusammengesetzt gegeben wird, welcher nicht mehr als 4 Ziffern hat; so kann der Logarithmus in eben derselben Tabelle genau gefunden werden. Als die Logarithmi der Zahl  $3\frac{567}{1000}$ , oder der Zahl  $35\frac{67}{100}$  oder  $356\frac{7}{10}$  werden wie die Logarithmi der ganzen Zahl 3567 gefunden; wenn man nur die erste Figur ändert, wie vorher gezeigt worden.

Wenn ein gemeiner vermischter Bruch vorkömmt; so verwandelt man ihn in einen uneigentlichen Bruch, und ziehet den Logarithmum des Nenners von dem Logarithmo des Zählers ab; so ist die gefundene Differenz der verlangte Logarithmus.

3. E.  $3\frac{1}{4}$  verwandelt in  $\frac{13}{4}$

Der Logarithmus des Zählers

I. 1760913

Der Logarithmus des Nenners

O. 6020600

Logarithmus von  $3\frac{1}{4}$  O. 5740313

## Die zweyte Aufgabe.

Die Zahl eines gegebenen Logarithmi zu suchen.

Suchet in der letzten Tabelle zwischen den Logarithmis der Zahl 1000 und 10000 den begehrten Logarithmum, so, daß ihr auf die erste Figur sehet.

I. Wenn der gegebene Logarithmus daselbst genau gefunden wird; so habt ihr die verlangte Zahl gegenüber: Und wenn die erste Ziffer des gegebenen Logarithmi kleiner als 3 ist; so schneidet von der gefundenen Zahl zur Rechten so viele Ziffern ab, um so viel sie kleiner ist. Was übrig bleibt, ist die verlangte Zahl, und die abgeschnittenen Ziffern werden Decimal-Brüche seyn. Wenn aber die erste Ziffer grösser als 3 ist; so vermehret die gefundene Zahl mit so viel Ziffern, um so viel sie grösser ist.

## Exempel.

Es sey der gegebene Logarithmus 3. 5523031; so ist die dazu gehörige Zahl 3567. Wenn der Logarithmus 2. 5523031; so ist die dazu gehörige Zahl 3567. Wenn der Logarithmus 1. 5523031; so ist die Zahl 3567. Wenn der Logarithmus 0. 5523031; so ist die Zahl 1000.

II. Wenn der gegebene Logarithmus in der Tabelle nicht genau gefunden wird, und mehrere als 4 Ziffern gesucht werden; so verfähret man auf folgende Art.

I. Suchet, wie vorher, indem ihr auf die erste Ziffer nicht sehet, den Logarithmum, welcher mit dem gefundenen in Ansehung der 4 ersten Ziffern der gesuchten Zahl übereinkömmt.

2. Ziehet den gefundenen Logarithmum von dem gegebenen Logarithmo ab, und vermehret den Ueberrest mit

so

so viel Nullen; so viel Ziffern über die 4 gefundenen begehret werden.

3. Dividiret den auf diese Art vermehrten Ueberrest durch die Differenz des gefundenen und nächstfolgenden Logarithmi, und setzet den Quotienten hinter die 4 gefundenen Ziffern.

4. Betrachtet endlich die erste Ziffer des gegebenen Logarithmi, welche die ganze Zahl und den Bruch der gesuchten Zahl anzeigen wird.

Exempel.

Es sey der gegebene Logarithmus 4. 5524118.

Der Logarithmus, welcher in der Tabelle zwischen 1000 und 10000 (wenn man auf die erste Ziffer nicht siehet) gefunden wird, und am nächsten kleiner als der gegebene Logarithmus, ist 3. 5523031, dessen Zahl 3567.

Dieses sind die ersten 4 Ziffern der ganzen gesuchten Zahl.

Zieheth nun den gefundenen Logarithmum von dem gegebenen ab.

Gegebene Log. 4. 5524118

Gefundene Log. 3. 5523031

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Ueberrest 1087

Vermehret diesen Ueberrest mit 3 Nullen, so habt ihr 1087000.

Dividiret 1087000 durch 1217 als durch die Differenz des gefundenen und nächstfolgenden Logarithmi; so ist der Quotient 894.

Setzet diesen Quotienten hinter 3567; so habt ihr 3567894.

## Die zweyte Aufgabe.

Die Zahl eines gegebenen Logarithmi zu suchen.

Suchet in der letzten Tabelle zwischen den Logarithmis der Zahl 1000 und 10000 den begehrten Logarithmum, so, daß ihr auf die erste Figur sehet.

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Es sey der gegebene Logarithmus 3. 5523031; so ist die dazu gehörige Zahl 3567. Wenn der Logarithmus 2. 5523031; so ist die dazu gehörige Zahl 356<sup>7</sup>/<sub>10</sub>. Wenn der Logarithmus 1. 5523031; so ist die Zahl 35<sup>67</sup>/<sub>100</sub>. Wenn der Logarithmus 0. 5523031; so ist die Zahl <sup>107</sup>/<sub>1000</sub> 10.

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## Von dem Gebrauche dieser Tabellen. 9

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Es sey der gegebene Logarithmus 4. 5524118.

Der Logarithmus, welcher in der Tabelle zwischen 1000 und 10000 (wenn man auf die erste Ziffer nicht siehet) gefunden wird, und am nächsten kleiner als der gegebene Logarithmus, ist 3. 5523031, dessen Zahl 3567.

Dieses sind die ersten 4 Ziffern der ganzen gesuchten Zahl.

Ziehet nun den gefundenen Logarithmum von dem gegebenen ab.

Gegebene Log. 4. 5524118

Gefundene Log. 3. 5523031

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Vermehret diesen Ueberrest mit 3 Nullen, so habt ihr 1087000.

Dividiret 1087000 durch 1217 als durch die Differenz des gefundenen und nächstfolgenden Logarithmi; so ist der Quotient 894.

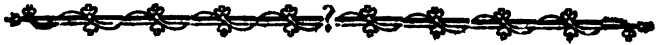
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## 10 Das II. Capitel. Von der Auflösung

Weil aber die erste Ziffer des gegebenen Logarithmi, welche Characteristica heißt, 4 ist: so wird die gesuchte Zahl 35678  $\frac{1}{100}$  seyn.

### Anmerkung.

Die Natur der Logarithmorum kann man aus Briggii Arithmetica Logarithmica und vielen andern daraus gemachten Auszügen lernen; daher wir dieses mit Fleiß übergehen.



## Das II. Capitel.

### Von der Auflösung der geradelinichten und rechtwinklichten Triangel.

1. Die Seiten, welche den rechten Winkel in geraden linichten und sphärischen Triangeln einschließen, heißen Schenkel oder Beine, und die Seite, welche dem rechten Winkel übersteht, wird Hypotenusa genannt.

2. Die bekannten Winkel und Seiten wollen wir mit einer kleinen geraden Linie, und die unbekanntn Winkel und Seiten mit einem kleinen Circul (o) bezeichnen; wie man aus folgenden Figuren sehen kann.

### Die erste Aufgabe.

Aus den gegebenen beyden Schenkeln eines rechtwinklichten Triangels die spitzigen Winkel zu finden.

### Regeln:

Schlüss:t: Wie ein Schenkel  
Zu dem andern Schenkel;

Also

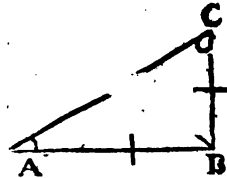
der geradewinkl. und rechtwinkl. Triangel. II

Also der Sinus totus

Zu dem Tangenten des Winkels, welcher dem andern Schenkel gegenüber steht.

Exempel.

Es sey in dem rechtwinklichten Triangel ABC, der Schenkel AB = 1124 und der Schenkel BC = 606. Man soll die Winkel A und C finden.



Durch gemeine Zahlen.

|                    |    |          |   |
|--------------------|----|----------|---|
| Wie das Bein AB    | == | 1124     |   |
| Zu dem Beine AC    | == | 606      |   |
| So der Sinus totus | == | 10000000 |   |
| Zu dem Tangenten   | == | 5391450  | von A = 28° 20'; dessen Complement C 61° 40' ist, |

Durch Logarithmen.

|                       |     |         |            |
|-----------------------|-----|---------|------------|
| Der Logarith. AB      | 3.  | 0507663 |            |
| Der Logarith. BC      | 2.  | 7824726 |            |
| Der Log. Sinus totius | 10. | 0000000 |            |
| Der Log. Tangentis    | 9.  | 7317063 | A 28° 20'. |

Die zwoyte Aufgabe.

Aus der gegebenen Hypotenuse und einem Schenkel die spitzigen Winkel zu finden.

Wie die Hypotenuse

Gegen den ganzen Sinuum;

Also das gegebene Bein

Gegen den Sinum, welcher dem gegebenen Beine entgegengesetzt ist.

Die



12 Das II. Capitel. Von der Auflösung

Die dritte Aufgabe.

Aus den gegebenen Winkeln und einem der beyden Schenkel den andern Schenkel zu finden.

Wie der ganze Sinus;  
Zu dem gegebenen Schenkel;  
Also der Tangens des spizigen Winkels, welcher an dem gegebenen Schenkel liegt,  
Zu dem gesuchten Schenkel.

Die vierte Aufgabe.

Aus den gegebenen Winkeln und der Hypotenusa einen der beyden Schenkel zu finden.

Wie der Sinus totus  
Zu der Hypotenusa;  
Also der Sinus des Winkels, welcher dem gesuchten Schenkel entgegen gesetzt ist,  
Zu dem gesuchten Schenkel.

Die fünfte Aufgabe.

Aus der gegebenen Hypotenusa und einem Beins das andere Bein zu finden.

Suchet erst nach der 2ten Aufgabe die spizigen Winkel, hernach vermöge der 3ten und 4ten Aufgabe das gesuchte Bein.

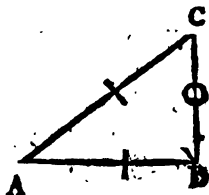
Andere Auflösung durch die Logarithmen.

Addiret den Logarithmum der Summe der Hypotenuse und des gegebenen Schenkels zu dem Logarithmo ihrer Differenz; so ist die halbe Summe der Logarithmorum der Logarithmus des gesuchten Beins.

Exemp

Exempel.

Es sey in dem Triangel ABC die Hypotenusa AC = 1277 und das Bein AB = 1124; was wird das Bein BC seyn?



|               |    |         |             |
|---------------|----|---------|-------------|
| Die Hypot. AC | =  | 1277    |             |
| Das Bein BC   | =  | 1124    | Logarithmi. |
| Die Summe     | =  | 2401    | 3. 3803922  |
| Die Differenz | =  | 153     | 2. 1846914  |
|               |    | <hr/>   |             |
| Summe Log.    | 5. | 5650836 |             |

Die halbe Summe der Log. 3. 7825418  
 Daher BC = 606.

Die sechste Aufgabe.

Aus den gegebenen Winkeln, und einem Beine, die Hypotenusa zu finden.

Wie der Sinus totus

Zu dem gegebenen Beine;

Also der Secans des spizigen Winkels, welcher an dem gegebenen Beine liegt,

Zu der Hypotenuse.

Regel, die Logarithmos der Secantium zu finden.

Wenn jemand den Logarithmum des Secanten von einem Bogen wissen will; so findet man ihn folgendergestalt: Zieheth nämlich den Logarithmum Sinus Complementi von dem verdoppelten Logarithmo des ganzen Sints ab; so ist die Differenz der gesuchte Logarithmus des Secanten.

Exem

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Exempel.

Man ziehe 9. 9445821 den Logarithmum des Sinus von  $61^{\circ} 40'$  von dem verdoppelten Logarithmo Sinus totius, nämlich von 20. 000000 ab; so ist die Differenz nämlich 10. 9554179, der Logarithmus des Secanten von  $28^{\circ} 20'$ .

Andere Auflösung ohne die Secanten.

Wie der Sinus des Winkels, welcher dem gegebenen Beine entgegengesetzt,  
Zu dem gegebenen Beine;  
Also der Sinus totus  
Zu der Hypotenuse.

Die Siebende Aufgabe.

Aus den gegebenen Schenkeln oder Beinen die Hypotenuse zu finden.

Suchet erst nach der ersten Aufgabe die Winkel, und nach der vorhergehenden 6ten Aufgabe die Hypotenuse.



Das III. Capitel.

Von der Auflösung der geradelinichten und stumpfwinklichten Triangel.

Die erste Aufgabe.

Aus zwei gegebenen Seiten und einem Winkel, welcher einer von beiden Seiten gegenüber steht, den Winkel zu finden, welcher der andern Seite entgegengesetzt ist.

Wie die Seite, welche dem gegebenen Winkel entgegengesetzt ist,

Gegen den Sinum eben desselben Winkels;

Also

Also die andere Seite  
Gegen den Sinum des Winkels, welcher dieser Seite  
entgegengesetzt ist.

### Die zweyte Aufgabe.

Aus zwey gegebenen Seiten und einem dazwischen liegenden  
Winkel die übrigen Winkel zu finden.

Wie die Summe der beyden gegebenen Seiten  
Zu ihrer Differenz;

Also der Tangens der halben Summe der gefundenen  
Winkel

Zu dem Tangente der halben Differenz eben derselben  
Winkel

Wenn nun zu der halben Summe der gefundenen Winkel  
die halbe Differenz addiret wird; so kommt der  
größere Winkel heraus: wenn aber die halbe Differenz  
von besagter halben Summe abgezogen wird; so kommt  
der kleinere Winkel heraus.

### Die dritte Aufgabe.

Aus den gegebenen drey Seiten, einen jeden Winkel  
zu finden.

Man nehme die größte Seite zur Grundlinie an, und  
ziehe aus der Spitze des Triangels eine Perpendiculars-  
linie auf besagte Grundlinie; so wird der gegebene  
Triangel in zwey rechtwinklichte Triangel getheilet;

Wie die Grundlinie oder die größte Seite

Zu der Summe der übrigen beyden Seiten;

Also die Differenz derselben

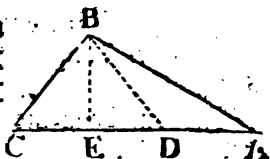
Zu der Differenz der Stücke der Grundlinie, in welche  
sie durch besagtes Perpendicular getheilet wird.

Wenn man nun die gefundene Differenz der Stücke  
von der ganzen Grundlinie abziehet; so theilet besagte  
Perz

Perpendicular:linie den Ueberrest der Grundlinie in zwey gleiche Theile: Es ist demnach in den beyden rechtwinklichten Triangeln die Hypotenuse und ein Bein bekannt; woraus man nach der zweyten Aufgabe des andern Capitels die Winkel finden kann.

Exempel.

Es sey in dem stumpfwinklichten Triangel ABC die Seite AC = 1277, AB = 865 und BC = 632.



|              |   |   |         |
|--------------|---|---|---------|
| Log. AC      | = | 3.  | 1061909 |
| Log. AB + BC | = | 3.  | 1752218 |
| Log. AB - BC | = | 2.  | 3673559 |
|              |   | <hr style="width: 50%; margin-left: 0;"/> |         |
|              |   | 5.  | 5425777 |
| Log. AD      | = | 2.  | 4363868 |

Anmerkung.

Es kan auch der Logarithmus der 4ten gesuchten Zahl gefunden werden, wenn das Complementum Arithmeticum des ersten Logarithmi (welches der Ueberrest ist, wenn man ihn von 10.000000 abgezogen hat) zu den übrigen beyden addiret, und von der Summe die erste Ziffer zur Linken abgezogen wird. Als in dem vorigen Exempel.

|         |   |      |    |   |               |
|---------|---|------|----|---|---------------|
| AB      | = | 1277 | 6. | 8938091                                   | Compl. arith. |
| AB + BC | = | 1497 | 3. | 1752218                                   |               |
| AB - BC | = | 233  | 2. | 3673559                                   |               |
|         |   |      |    | <hr style="width: 50%; margin-left: 0;"/> |               |
| AD      | = | 273  | 2. | 4363868                                   |               |

Wenn

Wenn ein Logarithmus von 10, 000000 nicht abgezogen werden kan, als die Logarithmi der Tangentium von Bogen, welche über  $45^\circ$  sind; so muß er von 20, 0000000 abgezogen werden, und man muß wie oben verfahren. Also ist das Complem. arith. des Logarith. des Tangenten von  $66^\circ$  folgender 9, 6485831, welcher auch der Logarithmus des Tangenten eben desselben Complements ist.

Wenn AD 273 von AC 1277 abgezogen wird; so bleibt DC 1004 übrig, dessen Hälfte 502 CE oder DE ist; daher wird AE 775 seyn. Nun ist in dem rechtwinklichten Triangel ABE die Hypotenuse AB 865 und der Schenkel AE 775 bekannt; woraus der Winkel ABE  $63^\circ 38'$  und der Winkel BAE  $26^\circ 22'$  gefunden wird. In dem rechtwinklichten Triangel CBE ist die Hypotenuse BC 632 und der Schenkel CE 502 bekannt; woraus man die Winkel CBE  $52^\circ 35'$  und BCE  $37^\circ 25'$  finden kann. Wenn nun der Winkel CBE  $52^\circ 35'$  zu dem Winkel ABE  $63^\circ 38'$  addiret wird; so ist die Summe der Winkel ABC  $116^\circ 13'$ .

**Anders.**

Addiret die gegebenen Seiten eine zu der andern, und ziehet von der halben Summe eine jegliche Seite ab, welche bey dem gesuchten Winkel liegt, damit ihr die Differenzen habet. Schließet nun:

1. Wie eine jede Seite, welche bey dem gesuchten Winkel liegt,

Zu dem gefundenen Unterschied;

Also die andere Differenz

Zu der vierten Zahl.

2. Wie die andere Seite, welche bey dem gesuchten Winkel liegt,

Gegen den Sinum totum,

Also

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Also die vierte gefundene Zahl

Zu der siebenden.

Wenn nun diese siebende Zahl in den Sinum totum multiplicirt wird; so ist die Quadratwurzel des Products der Sinus des halben gesuchten Winkels.

Es geschieht dieses weit leichter durch die Logarithmos; Addiret nämlich den Logarithmum Sinus totius zu dem Logarithmo der siebenden Zahl; so wird die halbe Summe der Logarithmus des Sinus des halben gesuchten Winkels seyn.

Exempel.

In dem vorigen Triangel wird der Winkel ABC gesucht.

|                                      |    |  |                          |
|--------------------------------------|----|--|--------------------------|
| Seiten                               | AC | 1277   |                          |
|                                      | AB | 865  |                          |
|                                      | BC | 632  |                          |
|                                      |    |  |                          |
| Summe der Seiten                     |    | 2774   |                          |
| Halfte der Summe                     |    | 1387   |                          |
| Differenz AB                         | —  | 522  | Logarithmi.<br>2.7176705 |
| Differenz AC                         | —  | 755  | 2.8779479                |
|                                      |    | Summe  | 5.5956174                |
| Log. AB 865                          |    |  | 2.9370161                |
| Log. der 2ten Zahl mit dem Sinu toto |    | 12.6586013   |                          |
| Log. BC 632                          |    | 2.8007171  |                          |
|                                      |    | Log. der 7ten Zahl mit dem Sinu toto                       | 19.8578842               |
|                                      |    | Die Hälfte ist der Log. Sinus $58^{\circ} 6\frac{1}{2}'$   | 9.9289421                |
|                                      |    | Das zweifache desselben $116^{\circ} 13'$ ist der gesuchte |                          |
| Winkel ABC.                          |    |  |                          |

Oder

## Der geradelinicht. und stumpfwinkl. Triangel. 19

Oder addiret die Complementa arithmetica der Logarithmorum der Seiten, die den gesuchten Winkel einschliessen, zu den Logarithmis der gefundenen Differenzen; so ist die halbe Summe der Logarithmus des Sinus des halben gesuchten Winkels. Als in eben dem Triangel.

| Seiten.      |     | Logarithmi.          |
|--------------|-----|----------------------|
| AB           | 865 | 7. 0629839 Compl.    |
| BC           | 632 | 7. 1992829 Compl.    |
| Differenz AB | 522 | 2. 7176705           |
| Differenz AC | 755 | 2. 8779469           |
| Summe        |     | <hr/> 19. 8578842    |
| Halbe Summe  |     | 9. 9289241 wie oben. |

### Die vierte Aufgabe.

Aus den gegebenen Winkeln und einer Seite, eine jede der übrigen Seiten zu finden.

Wie der Sinus des Winkels, welcher der gegebenen Seite entgegensteht,

Zu der gegebenen Seite;

Also der Sinus des Winkels, welcher der gesuchten Seite gegenübersteht,

Zu der gesuchten Seite.

### Die fünfte Aufgabe.

Aus zwey gegebenen Seiten und einem darzwischen liegenden Winkel die dritte Seite zu finden.

Suchet erst die Winkel nach der zweyten Aufgabe dieses Capitels; hernach die gesuchte Seite vermöge der vorhergehenden 4ten Aufgabe.



Das IV. Capitel.

Von der Auflösung der sphärischen  
rechtwinklichten Triangel.

1. Wenn ein Bein der Quadrant ist; so wird der ihm entgegengesetzte Winkel ein rechter Winkel seyn. Wenn ein Bein kleiner als ein Quadrant; so heißt der Winkel spizig; ist der Schenkel grösser als der Quadrant, so ist der Winkel stumpf.

2. Wenn ein Schenkel der Quadrant ist; so wird die Hypotenuse auch der Quadrant seyn: wenn beyde grösser oder kleiner als der Quadrant sind; so wird die Hypotenuse grösser als der Quadrant seyn.

3. Wenn ein Winkel, der an der Hypotenuse liegt, ein rechter ist; so wird die Hypotenuse der Quadrant seyn. Wenn sie beyde spizig oder stumpf sind; so wird die Hypotenuse kleiner als ein Quadrant seyn: wenn aber einer stumpf, der andere spizig ist; so wird die Hypotenuse grösser als ein Quadrant seyn.

4. Die drey Winkel eines sphärischen Triangels sind grösser als zwey rechte Winkel.

Die erste Aufgabe.

Aus dem gegebenen schiefen Winkel und dem ihm benliegenden Schenkel den andern schiefen Winkel zu finden.

Wie der Sinus totus

Gegen den Sinum des gegebenen Schenkels;

Also der Sinus complementi des schiefen Winkels

Gegen den Sinum complementi des gesuchten Winkels

Est.

Die

Die zweite Aufgabe.

Aus einem gegebenen Schenkel und einem ihm entgegengesetzten schiefen Winkel den andern schiefen Winkel zu finden.

Wenn bekannt ist, ob der Winkel spitzig oder stumpf, oder, wenn die Hypotenuse oder Bein größer oder kleiner als ein Quadrant ist.

Wie der Sinus complementi des gegebenen Beines  
Gegen den Sinum complementi des gegebenen  
Winkels;

Also der Sinus totus

Gegen den Sinum des gesuchten Winkels.

Anders.

Wie der Sinus totus

Gegen den Secanten des gegebenen Beines;

Also der Sinus complementi des gegebenen Winkels

Gegen den Sinum des gesuchten Winkels.

Die dritte Aufgabe.

Aus der gegebenen Hypotenuse und einem Schenkel den Winkel, welcher diesem Schenkel entgegengesetzt ist, zu finden.

Wie der Sinus der Hypotenuse

Gegen den Sinum totum;

Also der Sinus des gegebenen Beines

Gegen den Sinum des gesuchten Winkels.

Anders.

Wie der Sinus totus

Gegen den Secanten complementi der Hypotenuse;

Also der Sinus des gegebenen Schenkels

Gegen den Sinum des gesuchten Winkels.

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Die vierte Aufgabe.

Aus den gegebenen Schenkeln einen jeden schiefen Winkel zu finden.

Wie der Sinus totus

Gegen den Sinum des Schenkels, welcher an dem gesuchten Winkel liegt;

Also der Tangens complementi des andern Schenkels  
Gegen den Tangentem des Complementi des gesuchten Winkels.

Die fünfte Aufgabe.

Aus der gegebenen Hypotenuse und einem Schenkel den dazwischen liegenden Winkel zu finden.

Wie der Sinus totus

Gegen den Tangentem complementi der Hypotenuse;

Also der Tangens des gegebenen Schenkels  
Gegen den Sinum complementi des gesuchten Winkels.

Die sechste Aufgabe.

Aus der gegebenen Hypotenuse und schiefen Winkel den andern schiefen Winkel zu finden.

Wie der Sinus totus

Gegen den Sinum complementi der Hypotenuse;  
Also der Tangens des gegebenen schiefen Winkels  
Gegen den Tangentem complementi des gesuchten Winkels.

Die siebende Aufgabe.

Aus der gegebenen Hypotenuse und schiefen Winkel den Schenkel, welcher diesem Winkel entgegengesetzt ist, zu finden.

Wie der Sinus totus

Gegen den Sinum der Hypotenuse;

Also

Der sphärischen rechtwinklichten Triangel. 23

Also der Sinus des gegebenen schiefen Winkels.  
Gegen den Sinum des gesuchten Schenkels.

Die achte Aufgabe.

Aus der gegebenen Hypotenuse un' einem Schenkel den andern  
Schenkel zu finden.

Wie der Sinus totus  
Gegen den Secantem des gegebenen Schenkels;  
Also der Sinus complementi der Hypotenuse  
Gegen den Sinum complementi des gesuchten  
Schenkels.

Die neunte Aufgabe.

Aus den gegebenen Winkeln einen jeden Schenkel  
zu finden.

Wie der Sinus des Winkels, welcher an dem gesuchten  
Schenkel liegt,  
Gegen den Sinum totum;  
Also der Sinus complementi des andern schiefen  
Winkels  
Gegen den Sinum complementi des gesuchten  
Schenkels.

Anders.

Wie der Sinus totus  
Gegen den Secantem complementi des schiefen Winkels,  
welcher an dem gesuchten Schenkel liegt;  
Also der Sinus complementi des andern schiefen  
Winkels  
Gegen den Sinum complementi des gesuchten  
Schenkels.

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Die zehende Aufgabe.

Aus einem gegebenen Schenkel und einem schiefen Winkel, welchen daran liegt, den andern Schenkel zu finden.

Wie der Sinus totus

Gegen den Sinum des gegebenen Schenkels;

Also der Tangens des gegebenen schiefen Winkels

Gegen den Tangentem des gesuchten Schenkels.

Die elfte Aufgabe.

Aus einem gegebenen Schenkel und einem schiefen Winkel, welcher ihm entgegengesetzt ist, den andern Schenkel zu finden.

Man muß nur wissen: ob dieser oder die Hypotenuse kleiner oder größer als der Quadrant ist; oder ob der andere schiefe Winkel spizig oder stumpf ist.

Wie der Sinus totus

Gegen den Tangentem complementi des gegebenen schiefen Winkels;

Also der Tangens des gegebenen Schenkels

Gegen den Sinum des gesuchten Schenkels.

Die zwölfte Aufgabe.

Aus der gegebenen Hypotenuse und schiefen Winkel den Schenkel, welcher an diesem Winkel liegt, zu finden.

Wie der Sinus totus

Gegen den Sinum complementi des gegebenen schiefen Winkels;

Also der Tangens der Hypotenuse

Gegen den Tangentem des gesuchten Schenkels.

Die dreyzehende Aufgabe.

Aus den gegebenen Winkeln die Hypotenuse zu finden.

Wie der Sinus totus

Gegen den Tangentem complementi eines schiefen Winkels;

Also der Tangens complementi des andern schiefen Winkels

Gegen den Sinum complementi der Hypotenuse.

Die vierzehende Aufgabe.

Aus den gegebenen Schenkeln die Hypotenuse zu finden.

Wie der Sinus totus

Gegen den Sinum complementi des einen Schenkels;

Also der Sinus complementi des andern Schenkels

Gegen den Sinum complementi der Hypotenuse.

Die funfzehende Aufgabe.

Aus einem gegebenen Schenkel und schiefen Winkel, welcher diesem Schenkel entgegengesetzt ist, die Hypotenuse zu finden.

Man muß nur wissen, ob diese oder andere Schenkel kleiner oder größer als der Quadrant ist, oder ob der andere schiefe Winkel spizig oder stumpf ist.

Wie der Sinus des gegebenen schiefen Winkels

Gegen den Sinum totum;

Also der Sinus des gegebenen Schenkels

Gegen den Sinum der Hypotenuse.

Anders.

Wie der Sinus totus

Gegen den Secantem complementi des gegebenen schiefen Winkels;

Also der Sinus des gegebenen Schenkels

Gegen den Sinum der Hypotenuse.

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Die sechzehende Aufgabe.

Aus einem gegebenen Schenkel und schiefen Winkel, welcher an diesem Schenkel liegt, die Hypotenuse zu finden,

Wie der Sinus totus

Gegen den Sinum complementi des gegebenen schiefen Winkels ;

Also der Tangens complementi des gegebenen Schenkels

Gegen den Tangentem complementi der Hypotenuse.



Das V. Capitel.

Von der Auflösung der sphärischen und schiefwinklichten Triangel.

Damit man die sphärischen und schiefwinklichten Triangel größtentheils auflösen könne ; so werden sie vermittelst einer Perpendicularlinie in zwey rechtwinklichte Triangel getheilet, welche Perpendicularlinie von dem Endpuncte der gegebenen Seite, welche an dem andern Ende den gegebenen Winkel hat, auf die Grundlinie gezogen wird, welche man nach Gutbefinden verlängern kann. Alsdann wird das Gesuchte durch das Bekannte in den rechtwinklichten Triangeln gefunden. Weil aber die Methode durch die Erfindung der Perpendicularlinie (welche wenigstens drey Operationes erfordert) gemein ist, und vermöge der vorhergehenden Sätze geschehen kann ; so wollen wir sie hier nicht erklären, sondern nur zeigen, wie die Triangel ohne Erfindung der Perpendicularlinie auf zweyerley Weise aufgelöset werden ; welches wir, anstatt  
vielf

viele Namen zu gebrauchen, mit Buchstaben kürzlich thun wollen. Wer die Beweise davon haben will, findet sie in der Trigonometria Britannica des Henrici Briggii.

Damit man dieses thun könne, so setze man zu dem gegebenen Triangel die Buchstaben A B C. Den Buchstaben A an den Winkel, woraus die Perpendicularlinie gezogen werden soll. B setze man an den Winkel, welcher an der Seite liegt, und den Buchstaben C an den dritten Winkel; und wo die Perpendicularlinie auf der Grundlinie zwey rechte Winkel machet; schreibe man den Buchstaben D. Wenn die Winkel also bezeichnet worden sind; so sind auch die Seiten eines jeden Triangels bezeichnet.

Wenn die Winkel B und C (welche die Grundlinie B C berühren) spizig sind; so wird die Perpendicularlinie innerhalb dem Triangel fallen. Wenn der Winkel B stumpf ist, aufferhalb über B. Wenn der Winkel C stumpf ist; so wird die Perpendicularlinie auch aufferhalb über C fallen,

### Anmerkung.

Weil wir vorher gesagt, daß man die Perpendicularlinie von dem einen Ende der gegebenen Seite, welche an dem andern Ende den gegebenen Winkel hat, ziehen müsse, und dieses bisweilen, wie in der 1. 4 und 9 Aufgabe, auf zweyerley Weise geschehen kann; so wollen wir deswegen bey der 4 und 12 Aufgabe erinnern; wo die Perpendicularlinie in diesem Falle gezogen werden müsse. In den beyden andern kann es nach Gefallen geschehen.



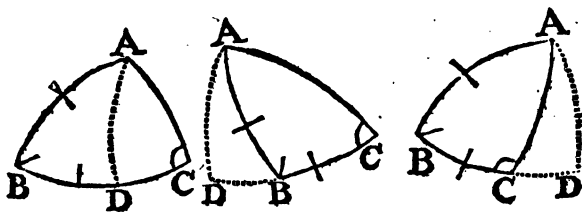
Die erste Aufgabe.

Aus zwey gegebenen Winkeln und einer dazwischen liegenden Seite den dritten Winkel zu finden.

I.

2.

3.



- |   |     |
|---|-----|
| I. Wie der Sinus totus                    |     |
| Gegen den Sinum complementi               | AB  |
| Also der Tangens                          | ABC |
| Gegen den Tangentem complementi           | BAD |
| Nachdem BAD gefunden; so ist CAD bekannt. |     |
| 2. Wie der Sinus                          | BAD |
| Gegen den Sinum                           | CAD |
| Also der Sinus complementi                | ABC |
| Gegen den Sinum complementi               | ACD |

Anmerkung.

In dem ersten und andern Triangel ist ACD eben dassjenige, was ACB; allein in dem dritten Triangel muß man, nachdem ACD gefunden worden, dessen Complement zu  $180^\circ$  nehmen, damit man den Winkel ACB bekomme.

Damit man die Leichtigkeit dieser Rechnung desto mehr einsehe; so wollen wir die Exempel hieher setzen.

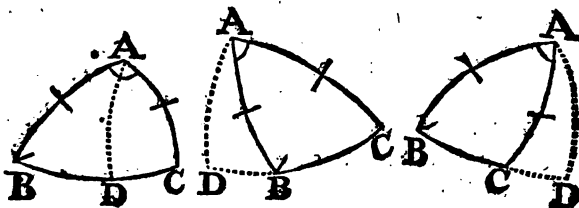
# Der sphärischen u. schiefwinklichten Triangel. 29

Es sey in dem ersten schiefwinklichten Triangel der Winkel  $BAC$   $104^\circ$ , der Winkel  $ABC$   $38^\circ$  und die Seite  $AB$   $30^\circ$ . Wie groß wird der Winkel  $ACB$  seyn?

|              |                 |             |                      |
|--------------|-----------------|-------------|----------------------|
|              | 1.              | Logarith.   |                      |
| $AB$ 30 gr.  | Sin. compl.     | 9. 9373306  | Logarith.            |
| $ABC$ 38 gr. | Tangens         | 9. 8928098  | Sin. co. 9. 8965321  |
| $BAD$ 55 gr. | 55 Tang. compl. | 55' 8303404 | Sin. 0. 0818525 a.c. |
| $CAD$ 48 gr. | 5               |             | Sin. 9. 8716414      |
| $ACB$ 44 gr. | 55              |             | Sin. co. 19. 8500260 |

## Die zweyte Aufgabe.

Aus zwey gegebenen Seiten und einem Winkel, welcher einer Seite entgegengesetzt ist, den von ihnen eingeschlossenen Winkel zu finden.



1. Wie der Sinus totus  
Gegen den Sinum Complementi AB
  - Also der Tangens ABC
  - Gegen den Tangentem Complementi. BAD
  2. Wie der Tangens AC
  - Gegen den Tangentem AB
  - Also der Sinus Complementi. BAD
  - Gegen den Sinum Complementi. CAD
- Wenn die Perpendicular-Linie innerhalb dem Triangel fällt; so ist die Summe  $BAD, CAD$ : wenn sie außershalb

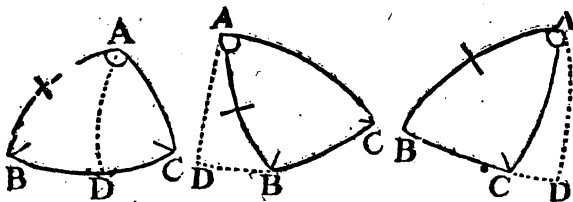
30 Das V. Capitel. Von der Auflösung

halb des Triangels fällt; so ist die Differenz derselben der gesuchte Winkel BAC.

Die dritte Aufgabe.

Aus zwey gegebenen Winkeln, und einer Seite, welche einem derselben Winkel entgegengesetzt ist, den dritten Winkel zu finden.

Man muß nur wissen, ob der Winkel spitzig oder stumpf sey: oder wenn die Art der Seite, welche dem andern gegebenen Winkel entgegensteht, bekannt ist.



- |                                 |     |
|---------------------------------|-----|
| 1. Wie der Sinus totus          |     |
| Gegen den Sinum complementi     | AB  |
| Also der Tangens                | ABC |
| Gegen den Tangentem complementi | BAD |
| 2. Wie der Sinus complementi    | ABC |
| Gegen den Sinum complementi     | BCA |
| Also der Sinus                  | BAD |
| Gegen den Sinum                 | CAD |

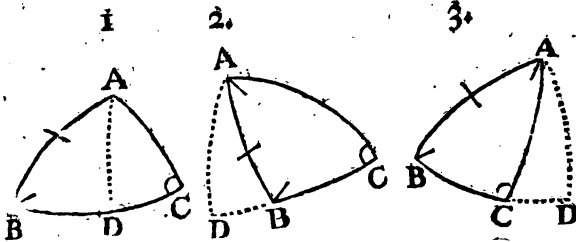
Wenn die Perpendicular Linie innerhalb dem Triangel fällt; so ist die Summe BAD, CAD; wenn sie ausserhalb fällt; so ist die Differenz derselben der gesuchte Winkel BAC.

Die vierte Aufgabe.

Aus zwei gegebenen Seiten und einem Winkel, den sie einschließen, die übrigen Winkel zu finden.

Anmerkung.

In diesem Falle muß die Perpendicular-Linie von der Seite, welche dem gesuchten Winkel gegenüber steht, gezogen werden.



- |  |     |
|--|-----|
| 1. Wie der Sinus totus                         |     |
| Gegen den Sinum complementi                    | ABC |
| Also der Tangens                               | AB  |
| Gegen den Tangentem                            | BD  |
| Nachdem BD gefunden worden; so ist CD bekannt. | CD  |
| 2. Wie der Sinus                               | BD  |
| Gegen den Sinum                                | ABC |
| Also der Tangens                               | ACD |
| Gegen den Tangentem                            |     |

Anmerkung.

In dem ersten und andern Triangel ist der Winkel ACD eben derselbige, welcher ACB; aber in dem dritten Triangel muß man, nachdem ACD gefunden worden, sein Complement zu  $190^\circ$  nehmen, damit man den gesuchten Winkel bekomme.

Die

Die fünfte Aufgabe.

Aus zwey gegebenen Seiten und dem Winkel, welcher einer derselben Seiten entgegensteht, den Winkel zu finden, welcher der andern Seite entgegensteht.

Man muß nur wissen, ob der Winkel spitzig oder stumpf sey.

Wie der Sinus der Seite, welche dem gegebenen Winkel gegenübersteht

Gegen den Sinum des gegebenen Winkels;  
 Also der Sinus der andern gegebenen Seite  
 Gegen den Sinum des gegebenen Winkels.

Die sechste Aufgabe.

Aus den gegebenen drey Seiten die Winkel zu finden.

Addiret die drey gegebenen Seiten, und ziehet von der halben Summe derselben eine Seite ab, welche den gesuchten Winkel einschliesset, damit ihr die Differenzen bekommet.

1. Wie der Sinus einer jeden Seite welcher den gesuchten Winkel einschliesset,

Gegen den Sinum einer jeden gefundenen Differenz;  
 Also der Sinus der andern Differenz

Zu dem vierten Sinu.

2. Wie der Sinus der andern Seite, welche den gesuchten Winkel einschliesset,

Gegen den Sinum totum;  
 Also der vierte Sinus

Gegen den siebenden Sinum.

Wenn man diesen siebenden Sinum in den Sinum totum multipliciret; so wird die Quadratwurzel des Products der Sinus der Hälfte des gesuchten Winkels seyn.

Oder leichter durch die Logarithmos:

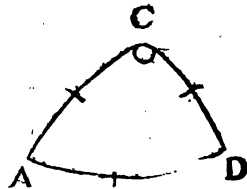
Addiret nämlich den Logarithmum des Sinus totius zu dem Logarithmo des siebenden Sinus; so wird die halbe Summe

Summe der Logarithmus Sinus der Hälfte des gesuchten Winkels seyn.

Oder addiret die Complementa arithmetica der Logarithmorum Sinuum von den Seiten, welche den gesuchten Winkel einschliessen, zu den Logarithmis der Sinuum der gefundenen Differenzen; so wird die halbe Summe der Logarithmus Sinus der Hälfte des gesuchten Winkels seyn.

Exempel.

In dem Triangel ACD sey die Seite AD  $42^{\circ} 8'$ , AC  $30^{\circ} 0'$  und CD  $25^{\circ} 4'$ ; wie groß wird der Winkel ACD seyn?



|                  |                   |                 |
|------------------|-------------------|-----------------|
| Seiten           | AD                | $42^{\circ} 8'$ |
|                  | AC                | $30^{\circ} 0'$ |
|                  | CD                | $24^{\circ} 4'$ |
| <hr/>            |                   |                 |
| Summe der Seiten | $96^{\circ} 12'$  |                 |
| Halbe Summe      | $48^{\circ} 6'$   |                 |
| Differenz AC     | $18^{\circ} 6'$   |                 |
| Differenz CD     | $24^{\circ} 2'$   |                 |
| Summe            |                   |                 |
| Halbe Summe      | $51^{\circ} 58'$  |                 |
| Das Zweyfache    | $103^{\circ} 56'$ |                 |

|                |
|----------------|
| Compl. Arithm. |
| o. 3010300     |
| o. 3895535     |
| Logarithmi.    |
| 9. 4923083     |
| 9. 6098803     |
| <hr/>          |
| 19. 7927721    |
| 9. 8963860     |
| ACD            |

Die siebende Aufgabe.

Aus den gegebenen Winkeln die Seiten zu finden.

Wenn die Winkel in die entgegengesetzte Seiten derselben verändert werden, und des größten Winkels und der ihm entgegengesetzten Seite Complement zu  $180^{\circ}$  genommen

# 34 Das V. Capitel. Von der Auflösung

men wird; so kann man wie in der vorhergehenden Aufgabe verfahren.

## Die achte Aufgabe.

Aus zwei gegebenen Winkeln und der Seite, welche einem derselben Winkel entgegensteht; die Seite, welche dem andern Winkel entgegensteht, zu finden.

Man muß nur wissen, ob sie kleiner oder größer als der Quadrant sey.

Wie der Sinus des Winkels, welche der gegebenen Seite gegenübersteht,

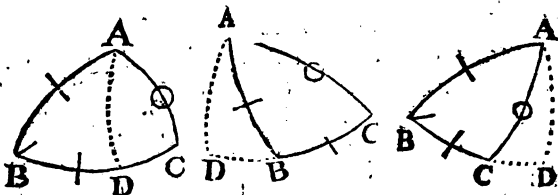
Gegen den Sinum eben derselben Seite;

Also der Sinus des andern gegebenen Winkels

Gegen den Sinum der gesuchten Seite.

## Die neunte Aufgabe.

Aus zwei gegebenen Seiten, und einem Winkel, den sie einschließen, die dritte Seite zu finden.



1. Wie der Sinus totus

Gegen den Sinum complementi

Also der Tangens

Gegen den Tangentem

Nachdem BD gefunden; so ist auch CD bekannt.

2. Wie der Sinus complementi

Gegen den Sinum complementi

ABC

AB

BD

BD

CD

Also

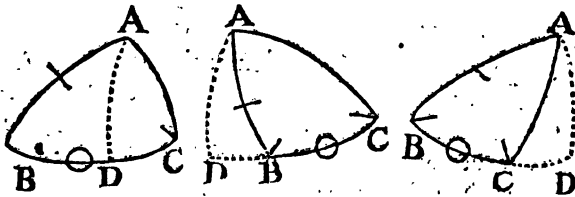
Der sphärischen rechtwinklichten Triangel. 35

Also der Sinus complementi AB  
 Gegen den Sinum complementi AC

Die zehende Aufgabe.

Aus zwey gegebenen Winkeln und der Seite, welche einem derselben gegenübersteht, die Seite zu finden, welche an den gegebenen Winkeln liegt.

Man muß nur wissen, ob die gesuchte Seite, oder die Seite, welche dem andern gegebenen Winkel entgegensteht, kleiner oder größer als der Quadrant sey.



- |                             |     |
|-----------------------------|-----|
| 1. Wie der Sinus totus      |     |
| Gegen den Sinum complementi | ABC |
| Also der Tangens            | AB  |
| Gegen den Tangentem         | ACB |
| 2. Wie der Tangens          | ACB |
| Gegen den Tangentem         | ABC |
| Also der Sinus              | BD  |
| Gegen den Sinum             | CD  |

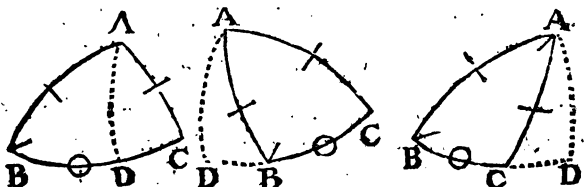
Wenn die Perpendicular-Linie innerhalb dem Triangel fällt; so ist die Summe BD, CD; wenn sie außerhalb fällt; so ist die Differenz derselben die gesuchte Seite BC.



# 36 Das V. Capitel. Von der Auflösung

## Die elfte Aufgabe.

Aus zwey gegebenen Seiten und dem Winkel, welcher einer der beyden Seiten entgegengesetzt ist, die dritte Seite zu finden.



1. Wie der Sinus totus

Gegen den Sinum complementi

ABC

Also der Tangens

AB

Gegen den Tangentem

BD

2. Wie der Sinus complementi

AB

Gegen den Sinum complementi

AC

Also der Sinus complementi

BD

Gegen den Sinum complementi

CD

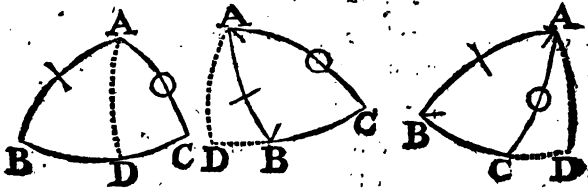
Wenn die Perpendicularlinie innerhalb den Triangel fällt; so ist die Summe BD, CD: wenn sie aufferhalb fällt; so ist die Differenz derselben die gesuchte Seite BC.

## Die zwölfte Aufgabe.

Aus zwey gegebenen Winkeln und dazwischen liegenden Seite, die übrigen Seiten zu finden.

In diesem Falle muß man die Perpendicularlinie aus dem gegebenen Winkel, welcher an der gesuchten Seite liegt, ziehen.

1. Wie



1. Wie der Sinus totus  
 Gegen den Sinum complementi AB  
 Also der Tangens ABC  
 Gegen den Tangentem complementi CAD

Nachdem BAD gefunden; so ist CAD bekannt.

2. Wie der Sinus complementi CAD  
 Gegen den Sinum complementi BAD  
 Also der Tangens AB  
 Gegen den Tangentem AC



## Anhang.

### Von astronomischen Fragen.

#### Die erste Aufgabe.

Aus der gegebenen größten Schiefe der Ecliptic und der Weite der Sonne von dem nächsten Equinoctio, ihre Declination zu finden.

- Wie der Sinus totus  
 Gegen den Sinum der Weite der Sonne von dem nächsten Equinoctio;  
 Also der Sinus der größten Schiefe  
 Gegen den Sinum der gesuchten Declination.

## Die zweite Aufgabe.

Aus der gegebenen größten Schiefe der Ecliptic und der Declination der Sonne, ihren Ort in der Ecliptic zu finden.

Wie der Sinus der größten Schiefe der Ecliptic,  
Gegen den Sinum der Declination der Sonne;

Wie der Sinus totus

Gegen den Sinum der Weite der Sonne von dem  
nächsten Equinoctio.

## Die dritte Aufgabe.

Aus der gegebenen größten Schiefe der Ecliptic und der Weite der Sonne von dem nächsten Equinoctio, die gerade Ascension zu finden.

Wie der Sinus totus

Gegen den Sinum complementi der größten Schiefe;

Also der Tangens der Weite der Sonne von dem  
nächsten Equinoctio

Gegen den Tangenten der gesuchten geraden  
Ascension.

## Die vierte Aufgabe.

Aus der gegebenen größten Schiefe der Ecliptic und der Declination der Sonne, ihre gerade Ascension zu finden.

Wie der Sinus totus

Gegen den Tangenten der Declination der Sonne;

Also der Tangens complementi der größten Schiefe  
Gegen den Sinum der gesuchten geraden Ascension.

## Die fünfte Aufgabe.

Aus der gegebenen größten Schiefe der Ecliptic und der Weite der Sonne von dem nächsten Equinoctio den Winkel zu finden, welchen die Ecliptic mit dem Meridiano macht.

Wie

Wie der Sinus totus

Gegen den Sinum complementi der Weite der Sonne von dem nächsten Aequinoctio;

Also der Tangens der größten Schiefe

Gegen den Tangentem complementi des gesuchten Winkels.

### Die sechste Aufgabe.

Aus der gegebenen größten Schiefe der Ecliptic und der Declination der Sonne den Winkel zu finden, welchen die Ecliptic mit dem Meridiano machet,

Wie der Sinus complementi der Declination der Sonne

Gegen den Sinum complementi der großen Schiefe;

Wie der Sinus totus

Gegen den Sinum des gesuchten Winkels.

### Die siebende Aufgabe.

Aus der gegebenen Declination der Sonne und Pol-Höhe die Weite des Puncts, da die Sonne auf, oder untergehet, von dem wahren Morgen oder Abend zu finden.

Wie der Sinus complementi der Pol-Höhe

Gegen den Sinum der Declination der Sonne;

Also der Sinus totus

Gegen den Sinum der gesuchten Weite.

### Die achte Aufgabe.

Aus der gegebenen Declination der Sonne und der Pol-Höhe, die Stunde des Auf, und Unterganges der Sonne zu finden.

Wie der Sinus totus

Gegen den Tangentem der Declination der Sonne;

Also der Tangens der Pol: Höhe  
Gegen den Sinum complementi des arcus seminocturni

Wenn der arcus seminocturnus in die Zeit verwandelt wird; so wird er die Stunde anzeigen, wenn die Sonne aufgehet: und wenn er von 12 Stunden abgezogen wird; so bleibet die Stunde übrig, da die Sonne untergehet.

### Die neunte Aufgabe.

Aus der gegebenen Pol: Höhe, der Declination der Sonne und der Stunde des Tages, die Sonnen: Höhe zu finden.

Diese Methode setzt voraus, daß die Perpendicular: Linie aus dem Pole des Horizonts in den Stunden: Circul der Sonne gezogen sey.

1. Wie der Sinus totus

Gegen den Tangentem complementi der Pol: Höhe;

Also der Sinus complementi der Weite der Sonne von dem Meridiano

Gegen den Tangentem des ersten gefundenen Bogens

Zieheth erst den gefundenen Bogen von der Weite der Sonne von dem Pole ab; so wird der andere gefundene Bogen übrig bleiben.

2. Wie der Sinus complementi des ersten gefundenen Bogens

Gegen den Sinum complementi des andern gefundenen Bogens;

Also der Sinus der Pol: Höhe

Gegen den Sinum der Sonnen: Höhe.

Um die Sonnen-Höhe der sechsten Stunde zu finden; so schlüßet:

Wie der Sinus totus

Gegen den Sinum der Declination der Sonne;

Also der Sinus der Pol-Höhe

Gegen den Sinum der gesuchten Höhe.

### Die zehende Aufgabe.

Aus dem gegebenen Azimuth, der Declination der Sonne, und der Tagesstunde, die Höhe der Sonne zu finden.

Wie der Sinus des Azimuth der Sonne von dem Meridiano

Gegen den Sinum complementi der Declination der Sonne;

Also der Sinus der Weite der Sonne von dem Meridiano

Gegen den Sinum complementi der gesuchten Höhe.

### Die elfte Aufgabe.

Aus der gegebenen Declination, der Höhe, und dem Azimuth der Sonne, die Tagesstunde zu finden.

Wie der Sinus complementi der Declination

Gegen den Sinum complementi der Höhe;

Also der Sinus des Azimuth von dem Meridiano

Gegen den Sinum der Weite von dem Meridiano.

### Die zwölfte Aufgabe.

Aus der gegebenen Pol-Höhe, der Declination und der Sonnen-Höhe die Tagesstunde zu finden.

Abdiret folgende drey Stücke, nämlich das Complement der Pol-Höhe, die Weite der Sonne von dem Polo, und das Complement der Sonnen-Höhe. Zieht von

der halben Summe das Complement der Pol: Höhe und die Weite der Sonne von dem Polo ab; damit ihr die Differenzen bekommt. Schlißset nun;

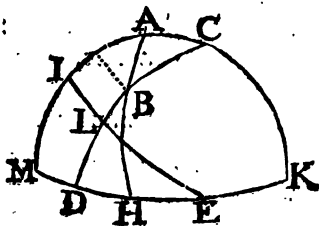
1. Wie der Sinus complementi der Pol: Höhe  
Gegen den Sinum einer gefundenen Differenz;  
Also der Sinus der andern gefundenen Differenz  
Gegen den vierten Sinum
2. Wie der Sinus der Weite der Sonne von dem  
Polo  
Gegen den Sinum totum;  
Also der vierte gefundene Sinus  
Gegen den siebenden Sinum.

Addiret den Logarithmum des Sinus totius zu dem Logarithmo des siebenden Sinus; so ist die halbe Summe der Logarithmus des Sinus von einem Bogen, welcher zweyfach genommen und in Stunden verwandelt, die Weite von dem Mittag geben wird.

Oder addiret die Complementa arithmetica der Logarithmorum des Sinus complementi von der Pol: Höhe, und des Sinus der Weite der Sonne von dem Polo, zu den Logarithmis der Sinuum der gefundenen Differenzen; so wird die halbe Summe der Logarithmus des Sinus von einem Bogen seyn, welcher zweyfach genommen und in Stunden verwandelt, die Weite von dem Mittage geben wird.

Diese Frage ist sehr im Gebrauch, und wird nach der 6ten Aufgabe des 5ten Capitels aufgelöst. Weil in dem Triangel ABC gegeben sind.

C der Pol  
 A der Zenith  
 B ein Stern  
 AC das Complement der  
 Pol-Höhe CK  
 AB das Complement  
 der Sonnen-Höhe BH.



BC die Weite der Sonne von dem Pole, welche man bekommt, wenn man ihre Declination, wenn sie nördlich, von  $90^\circ$  abziehet, oder sie zu  $90^\circ$  addiret, wenn sie südlich. Es wird der Winkel ACB gesucht, oder die Weite des Sternes B von dem Meridiano IA, welche durch den Bogen des Aequatoris IL gemessen wird. Wenn man ihn nun durch 15 dividiret; so wird er auf Stunden gebracht.

### Die dreyzehende Aufgabe.

Aus der gegebenen Pol-Höhe, der Declination und Sonnen-Höhe, ihre Azimuth zu finden.

Addiret folgende drey Stücke, nämlich das Complementum der Pol-Höhe, die Weite der Sonne von dem Polo und das Complement der Sonnen-Höhe; ziehet von der halben Summe das Complement der Pol-Höhe und das Complement der Sonnen-Höhe ab; damit ihr die Differenzen bekommet. Schließet nun:

I. Wie der Sinus complementi der Pol-Höhe

Gegen den Sinum einer gefundenen Differenz;

Also



Also der Sinus der andern Differenz  
Gegen den vierten Sinum.

2, Wie der Sinus complementi der Sonnen-Höhe  
Gegen den Sinum totum;

Also der vierte gefundene Sinus  
Gegen den siebenden Sinum

Addiret den Logarithmum Sinus totius zu dem Logarithmo des siebenden Sinus; so ist die halbe Summe derselben der Logarithmus der Hälfte des gesuchten Azimuth.

Ober addiret die Complementa arithmetica der Logarithmorum des Sinus complementi der Pol-Höhe und des Sinus complementi der Sonnen-Höhe, zu den Logarithmis Sinuum der gefundenen Differenzen; so ist die halbe Summe der Logarithmus des Sinus des halben gesuchten Azimuth.

Die Auflösung dieser Frage ist einerley mit der Auflösung der vorigen 12ten Aufgabe, wo die drey Seiten des Triangels ABC bekannt sind. Denn des gefundenen Winkels CAB Complement BAI oder HAM wird das Azimuth der Sonne von dem Meridiano geben.

Es hat diese Aufgabe ihren Nutzen in der Gnomonic und der Declination des Magnets. Denn wenn die Sonnen-Höhe observiret worden; so kann der Schatten des Perpendiculars auf der Horizontal-Fläche angemesset werden, und wenn der Winkel des Azimuth der Sonne

ng

ne gefunden und auf besagte Fläche getragen worden ist; so giebt sich die Mittagslinie, oder die Equinoctial-Linie des Auf- und Unterganges, nachdem des Winkels CAB Complement entweder zu  $180^\circ$  oder  $90^\circ$  genommen worden ist; daher auch die Declination des Magnets bekannt wird.

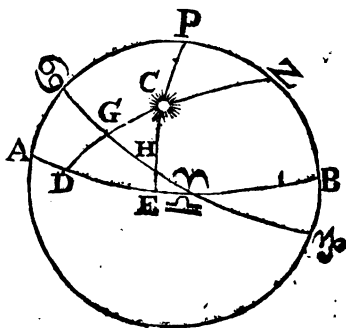
Die vierzehende Aufgabe.

Aus der gegebenen Länge und Breite eines Fixsterns seine Declination zu finden.

AEB ist der Äquator  
 P der Polus Äquatoris  
 S. V.  $\cap$ . J. der Zodiacus.

Z der Polus Zodiaci  
 APZ Colurus Solstitionum

C der gegebene Stern,  
 dessen Länge GV und Breite GC bekannt sind.



Man will seine Declination CE wissen. Der Bogen PZ ist  $23^\circ 31' 36''$ , als die Weite des Poli Zodiaci von dem Polo Äquatoris. CZ ist auch bekannt, als das Complement der Breite GC. Und der Winkel PZC, welchen sie einschließen, ist auch bekannt, nämlich die Weite des Sternes von dem bekannten Coluro, welcher von dem Bogen GS gemessen wird, welcher das Complement GV ist. Daher wird der Bogen PC bekannt werden, dessen Complement CE die gesuchte Declination ist.

Dis.

## Die funfzehende Aufgabe.

Aus der gegebenen Länge und Breite eines Sternes seine gerade Ascension zu finden.

In der vorhergehenden Figur ist der Bogen des Equatoris  $\vee E$  die gesuchte gerade Ascension. Wenn nun in dem Triangel  $CPZ$  zwey Seiten gegeben sind, nämlich  $PZ$  und  $CZ$  und der Winkel, den sie einschliessen; so wird auch der Winkel  $ZPC$  bekannt seyn, welcher den Bogen  $EB$  mißt, dessen Complement der gesuchte Bogen  $\vee E$  ist. Bisweilen wird zwar der Bogen  $EB$  kleiner als der Quadrant seyn; aber der Bogen  $\vee E$  ist das Complement des Winkels  $ZPC$ .

## Die sechzehende Aufgabe.

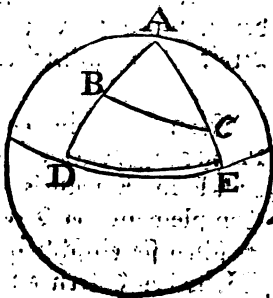
Aus den gegebenen Längen und Breiten zweyer Sterne oder Städte ihre Breiten zu finden.

$B$  oder  $C$  sind die Dörter der Sterne oder Städte

$A$  der Polus

$BD$  und  $EC$  sind die gegebenen Breiten

$DE$  die Differenz der Längen.



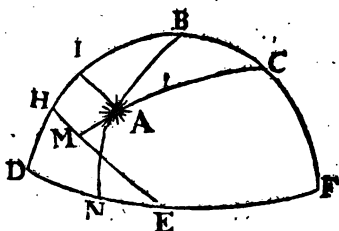
Es sind demnach in dem Triangel  $ABC$  zwey Seiten  $AB$ ,  $AC$  und der Winkel  $A$ , den sie einschliessen, gegeben, dessen Maaß der bekannte Bogen  $DE$  ist; daher wird auch  
der

der Bogen BC vermöge der 9ten Aufgabe der schiefwinklichten Triangel bekannt seyn.

Die siebengehende Aufgabe.

Aus der gegebenen Declination der Sonne, der Pol-Höhe, den Winkel des Azimuth, wodurch man die Mittags-Linie erhält, die Stunde zu finden.

DBF ist der Meridianus  
 B das Zenith  
 C der Polus  
 DEF der Horizont  
 HE der Aequator  
 IA ein Parallel-Circul  
 der Sonne A.



Wenn die Declination AM bekannt ist; so ist auch das Complement CA bekannt. Aus der Weite der Pole BC wird der Winkel DBN bekannt.

Da nun in dem Triangel ABC zwey Seiten AC und BC und der Winkel CBA dem Complemente DBN zu  $180^\circ$  gegeben sind; so wird der Winkel BCA gefunden, oder der Bogen IA oder HM, welcher durch  $15^\circ$  dividirt, die Anzahl der Stunden von dem Meridiano gibt.

Die achtzehende Aufgabe.

Aus der gegebenen Höhe und Declination der Sonne samt dem Winkel des Azimuth die Stunde und die Pol-Höhe zu finden.

48 Anhang, von astronomischen Fragen.

Es ist der Bogen  $BA$  das Complement der Sonnen-Höhe  $AN$  gegeben; wie auch der Bogen  $AC$  nicht anders als der Winkel des Azimuth. Daher

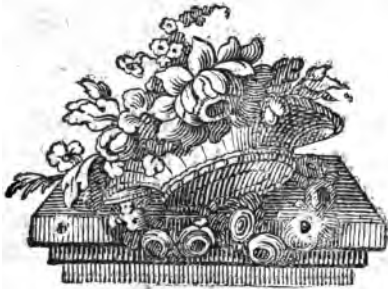
Wie der Sinus des Bogens  $AC$

Gegen den Sinum des Winkels  $ABC$ ;

Also der Sinus des Bogens  $AB$

Gegen den Sinum des Winkels  $ACB$  oder der Weite der Sonne von dem Meridiano.

Um aber die Pol-Höhe zu finden; so sehet auf die Proportion, welche erfordert wird, um die Seite  $BC$  zu bekommen, als das Complement der gesuchten Höhe  $CF$ .



CANO.

CANONES  
SINUUM.  
TANGENTIUM,  
SECANTIUM:  
ET  
LOGARITHMORUM  
PRO  
SINUBUS  
ET  
TANGENTIBUS.

# O Grad.

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| o      | o      | 100000.00 | o         | o          |
| 29.09  | 29.09  | 100000.00 | 6.4637261 | 6.4637261  |
| 58.18  | 58.18  | 100000.02 | 6.7647561 | 6.7647562  |
| 87.27  | 87.27  | 100000.04 | 6.9408473 | 6.9408475  |
| 116.36 | 116.36 | 100000.07 | 7.0657860 | 7.0657863  |
| 145.44 | 145.44 | 100000.11 | 7.1626960 | 7.1626964  |
| 174.53 | 174.53 | 100000.16 | 7.2418771 | 7.2418778  |
| 203.62 | 203.62 | 100000.21 | 7.3088239 | 7.3088248  |
| 232.71 | 232.71 | 100000.27 | 7.3668157 | 7.3668169  |
| 261.80 | 261.80 | 100000.34 | 7.4179691 | 7.4179696  |
| 290.89 | 290.89 | 100000.42 | 7.4637255 | 7.4637273  |
| 319.98 | 319.98 | 100000.51 | 7.5051181 | 7.5051203  |
| 349.06 | 349.07 | 100000.61 | 7.5429065 | 7.5429091  |
| 378.15 | 378.16 | 100000.72 | 7.5776684 | 7.5776715  |
| 407.24 | 407.25 | 100000.83 | 7.6098530 | 7.6098566  |
| 436.33 | 436.33 | 100000.95 | 7.6398160 | 7.6398201  |
| 465.42 | 465.42 | 100001.08 | 7.6678445 | 7.6678492  |
| 494.51 | 494.51 | 100001.22 | 7.6941733 | 7.6941786  |
| 523.60 | 523.60 | 100001.37 | 7.7189966 | 7.7190026  |
| 552.68 | 552.69 | 100001.53 | 7.7424775 | 7.7424841  |
| 581.77 | 581.78 | 100001.70 | 7.7647537 | 7.7647610  |
| 610.86 | 610.87 | 100001.87 | 7.7859427 | 7.7859508  |
| 639.95 | 639.96 | 100002.05 | 7.8061458 | 7.8061547  |
| 669.04 | 669.05 | 100002.24 | 7.8254507 | 7.8254604  |
| 698.13 | 698.14 | 100002.44 | 7.8439338 | 7.8439444  |
| 727.21 | 727.23 | 100002.65 | 7.8616623 | 7.8616738  |
| 756.30 | 756.32 | 100002.86 | 7.8786953 | 7.8787077  |
| 785.39 | 785.41 | 100003.08 | 7.8950854 | 7.8950988  |
| 814.48 | 814.50 | 100003.31 | 7.9108793 | 7.9108938  |
| 843.57 | 843.60 | 100003.55 | 7.9261190 | 7.9261344  |
| 872.65 | 872.69 | 100003.80 | 7.9408419 | 7.9408584  |

# 89 Grad.

| Minut. | Sinus    | Tang.      | Secant.    | Log. Sin.  | Log. Tang. |
|--------|----------|------------|------------|------------|------------|
|        | 10000000 | Infinitt.  | Infinitt.  | 10.0000000 | Infinitt.  |
| 60     | 99999.99 | 343774667. | 343774682. | 9.9999999  | 13.5362739 |
| 59     | 99999.98 | 171887319. | 171887348. | 9.9999999  | 13.2352438 |
| 58     | 99999.96 | 114591530. | 114591574. | 9.9999999  | 13.0591525 |
| 56     | 99999.93 | 85943630.  | 85943689.  | 9.9999997  | 12.9342137 |
| 55     | 99999.89 | 68754887.  | 68754960.  | 9.9999995  | 12.8373036 |
| 54     | 99999.84 | 57295721.  | 57295809.  | 9.9999993  | 12.7581222 |
| 53     | 99999.79 | 49110600.  | 49110702.  | 9.9999991  | 12.6911752 |
| 52     | 99999.73 | 42971757.  | 42971873.  | 9.9999988  | 12.6331831 |
| 51     | 99999.66 | 38197099.  | 38197230.  | 9.9999985  | 12.5820304 |
| 50     | 99999.58 | 34377371.  | 34377516.  | 9.9999982  | 12.5362727 |
| 49     | 99999.49 | 31252137.  | 31252297.  | 9.9999978  | 12.4948797 |
| 48     | 99999.39 | 28647773.  | 28647948.  | 9.9999974  | 12.4570909 |
| 47     | 99999.28 | 26444080.  | 26444269.  | 9.9999969  | 12.4223285 |
| 46     | 99999.17 | 24555198.  | 24555402.  | 9.9999964  | 12.3901434 |
| 45     | 99999.05 | 22918166.  | 22918385.  | 9.9999959  | 12.3601799 |
| 44     | 99998.92 | 21485762.  | 21485995.  | 9.9999953  | 12.3321508 |
| 43     | 99998.78 | 20221875.  | 20222122.  | 9.9999947  | 12.3058214 |
| 42     | 99998.63 | 19099319.  | 19099680.  | 9.9999940  | 12.2809974 |
| 41     | 99998.47 | 18093220.  | 18093496.  | 9.9999934  | 12.2575159 |
| 40     | 99998.30 | 17188540.  | 17188831.  | 9.9999927  | 12.2352390 |
| 39     | 99998.13 | 16370019.  | 16370325.  | 9.9999919  | 12.2140492 |
| 38     | 99997.95 | 15625908.  | 15626228.  | 9.9999911  | 12.1938453 |
| 37     | 99997.76 | 14946502.  | 14946837.  | 9.9999903  | 12.1745396 |
| 36     | 99997.56 | 14323712.  | 14324061.  | 9.9999894  | 12.1560556 |
| 35     | 99997.35 | 13750745.  | 13751108.  | 9.9999885  | 12.1383262 |
| 34     | 99997.13 | 13221851.  | 13222229.  | 9.9999876  | 12.1212923 |
| 33     | 99996.91 | 12732134.  | 12732526.  | 9.9999866  | 12.1049012 |
| 32     | 99996.68 | 12277396.  | 12277803.  | 9.9999856  | 12.0891062 |
| 31     | 99996.44 | 11854018.  | 11854440.  | 9.9999845  | 12.0738656 |
| 30     | 99996.19 | 11458865.  | 11459301.  | 9.9999835  | 12.0591416 |



# o Grad.

| Minutes. | Sinus.  | Tang.   | Secant.   | Log. Sin. | Log. Tang. |
|----------|---------|---------|-----------|-----------|------------|
| 31       | 872.65  | 872.69  | 100003.80 | 7.9408419 | 7.9408584  |
| 32       | 901.74  | 901.78  | 100004.06 | 7.9550819 | 7.9550996  |
| 33       | 930.83  | 930.87  | 100004.33 | 7.9688698 | 7.9688886  |
| 34       | 959.92  | 959.96  | 100004.61 | 7.9822334 | 7.9822534  |
| 35       | 989.00  | 989.05  | 100004.89 | 7.9951980 | 7.9952192  |
| 36       | 1018.09 | 1018.14 | 100005.18 | 8.0077867 | 8.0078092  |
| 37       | 1047.18 | 1047.24 | 100005.48 | 8.0200207 | 8.0200445  |
| 38       | 1076.27 | 1076.33 | 100005.79 | 8.0319195 | 8.0319446  |
| 39       | 1105.35 | 1105.42 | 100006.11 | 8.0435009 | 8.0435274  |
| 40       | 1134.44 | 1134.51 | 100006.44 | 8.0547814 | 8.0548094  |
| 41       | 1163.53 | 1163.61 | 100006.77 | 8.0657763 | 8.0658057  |
| 42       | 1192.61 | 1192.70 | 100007.11 | 8.0764997 | 8.0765306  |
| 43       | 1221.70 | 1221.79 | 100007.46 | 8.0869646 | 8.0869970  |
| 44       | 1250.79 | 1250.88 | 100007.82 | 8.0971832 | 8.0972172  |
| 45       | 1279.87 | 1279.98 | 100008.19 | 8.1071669 | 8.1072025  |
| 46       | 1308.96 | 1309.07 | 100008.57 | 8.1169262 | 8.1169634  |
| 47       | 1338.05 | 1338.17 | 100008.96 | 8.1264710 | 8.1265099  |
| 48       | 1367.13 | 1367.26 | 100009.35 | 8.1358104 | 8.1358510  |
| 49       | 1396.22 | 1396.35 | 100009.75 | 8.1449532 | 8.1449956  |
| 50       | 1425.30 | 1425.43 | 100010.20 | 8.1539075 | 8.1539516  |
| 51       | 1454.39 | 1454.54 | 100010.58 | 8.1626808 | 8.1627267  |
| 52       | 1483.48 | 1483.64 | 100011.01 | 8.1712804 | 8.1713382  |
| 53       | 1512.56 | 1512.73 | 100011.45 | 8.1797129 | 8.1797626  |
| 54       | 1541.65 | 1541.83 | 100011.89 | 8.1879848 | 8.1880364  |
| 55       | 1570.73 | 1570.93 | 100012.34 | 8.1961020 | 8.1961556  |
| 56       | 1599.82 | 1600.02 | 100012.80 | 8.2040703 | 8.2041259  |
| 57       | 1628.90 | 1629.12 | 100013.27 | 8.2118949 | 8.2119526  |
| 58       | 1657.99 | 1658.21 | 100013.75 | 8.2195811 | 8.2196408  |
| 59       | 1687.07 | 1687.31 | 100014.24 | 8.2271335 | 8.2271953  |
| 60       | 1716.16 | 1716.41 | 100014.73 | 8.2345568 | 8.2346208  |
| 61       | 1745.24 | 1745.51 | 100015.23 | 8.2418553 | 8.2419215  |

# 89 Grad.

| Minur. | Sinus.   | Tang.      | Secant.    | Log. Sin. | Log- Tang. |
|--------|----------|------------|------------|-----------|------------|
| 30     | 99996.19 | 11458865.0 | 11459301.4 | 9.9999835 | 12.0591416 |
| 29     | 99995.93 | 11089205.1 | 11089656.0 | 9.9999823 | 12.0449004 |
| 28     | 99995.66 | 10742648.4 | 10743113.8 | 9.9999812 | 12.0311114 |
| 27     | 99995.39 | 10417094.5 | 10417574.5 | 9.9999800 | 12.0177466 |
| 26     | 99995.11 | 10110690.2 | 10111184.8 | 9.9999788 | 12.0047808 |
| 25     | 99994.82 | 9821794.3  | 9822303.3  | 9.9999775 | 11.9921908 |
| 24     | 99994.52 | 9548947.5  | 9549471.1  | 9.9999762 | 11.9799555 |
| 23     | 99994.21 | 9290848.7  | 9291386.9  | 9.9999748 | 11.9680554 |
| 22     | 99993.89 | 9046333.6  | 9046886.3  | 9.9999735 | 11.9564726 |
| 21     | 99993.56 | 8814357.2  | 8814924.4  | 9.9999721 | 11.9451906 |
| 20     | 99993.23 | 8593979.1  | 8594560.9  | 9.9999706 | 11.9341943 |
| 19     | 99992.89 | 8384350.7  | 8384947.0  | 9.9999691 | 11.9234694 |
| 18     | 99992.54 | 8184704.1  | 8185315.0  | 9.9999676 | 11.9130030 |
| 17     | 99992.18 | 7994343.0  | 7994968.4  | 9.9999660 | 11.9027828 |
| 16     | 99991.81 | 7812634.2  | 7813274.2  | 9.9999644 | 11.8927975 |
| 15     | 99991.43 | 7639000.9  | 7639655.4  | 9.9999628 | 11.8830366 |
| 14     | 99991.04 | 7472916.5  | 7473585.6  | 9.9999611 | 11.8734901 |
| 13     | 99990.65 | 7313809.1  | 7314582.7  | 9.9999594 | 11.8641490 |
| 12     | 99990.25 | 7161507.0  | 7162205.2  | 9.9999577 | 11.8550044 |
| 11     | 99989.84 | 7015334.6  | 7016047.4  | 9.9999559 | 11.8460484 |
| 10     | 99989.42 | 6875008.7  | 6875736.0  | 9.9999541 | 11.8372733 |
| 9      | 99988.99 | 6740185.4  | 6740927.2  | 9.9999522 | 11.8286718 |
| 8      | 99988.55 | 6610547.3  | 6611303.6  | 9.9999503 | 11.8202374 |
| 7      | 99988.11 | 6485800.8  | 6486571.6  | 9.9999484 | 11.8119636 |
| 6      | 99987.66 | 6365674.1  | 6366459.5  | 9.9999464 | 11.8038444 |
| 5      | 99987.20 | 6249915.4  | 6250715.3  | 9.9999444 | 11.7958741 |
| 4      | 99986.73 | 6138290.5  | 6139105.0  | 9.9999424 | 11.7880474 |
| 3      | 99986.25 | 6030582.0  | 6031411.0  | 9.9999403 | 11.7803592 |
| 2      | 99985.76 | 5926587.2  | 5927430.8  | 9.9999382 | 11.7728047 |
| 1      | 99985.27 | 5826117.4  | 5826975.5  | 9.9999360 | 11.7653792 |
| 0      | 99984.77 | 5728996.2  | 5729868.9  | 9.9999338 | 11.7580785 |

| Minute | I Grad. |         |           |           |            |
|--------|---------|---------|-----------|-----------|------------|
|        | Sinus   | Tang.   | Secant.   | Lag. Sin. | Log. Tang. |
| 0      | 1745.24 | 1745.51 | 100015.23 | 8.2418553 | 8.2419215  |
| 1      | 1774.32 | 1774.60 | 100015.74 | 8.2490332 | 8.2491015  |
| 2      | 1803.41 | 1803.70 | 100016.26 | 8.2560943 | 8.2561649  |
| 3      | 1832.49 | 1832.80 | 100016.79 | 8.2630424 | 8.2631153  |
| 4      | 1861.58 | 1861.90 | 100017.33 | 8.2698810 | 7.2699563  |
| 5      | 1890.66 | 1891.00 | 100017.88 | 8.2766136 | 8.2766912  |
| 6      | 1919.74 | 1920.10 | 100018.43 | 8.2832434 | 8.2833234  |
| 7      | 1948.83 | 1949.20 | 100018.99 | 8.2897734 | 8.2898559  |
| 8      | 1977.91 | 1978.30 | 100019.56 | 8.2962067 | 8.2962917  |
| 9      | 2006.99 | 2007.40 | 100020.14 | 8.3025460 | 8.3026335  |
| 10     | 2036.08 | 2036.50 | 100020.73 | 8.3087941 | 8.3088842  |
| 11     | 2065.16 | 2065.60 | 100021.33 | 8.3149536 | 8.3150462  |
| 12     | 2094.24 | 2094.70 | 100021.94 | 8.3210269 | 8.3211221  |
| 13     | 2123.32 | 2123.80 | 100022.55 | 8.3270163 | 8.3271143  |
| 14     | 2152.41 | 2152.91 | 100023.17 | 8.3329243 | 8.3330249  |
| 15     | 2181.49 | 2182.01 | 100023.80 | 8.3387529 | 8.3388563  |
| 16     | 2210.57 | 2211.11 | 100024.44 | 8.3445043 | 8.3446105  |
| 17     | 2239.65 | 2240.21 | 100025.09 | 8.3501805 | 8.3502895  |
| 18     | 2268.73 | 2269.32 | 100025.75 | 8.3557835 | 8.3558953  |
| 19     | 2297.81 | 2298.42 | 100026.41 | 8.3613150 | 8.3614297  |
| 20     | 2326.90 | 2327.53 | 100027.08 | 8.3667769 | 8.3668945  |
| 21     | 2355.98 | 2356.63 | 100027.76 | 8.3721710 | 8.3722915  |
| 22     | 2385.06 | 2385.74 | 100028.45 | 8.3774988 | 8.3776223  |
| 23     | 2414.14 | 2414.84 | 100029.15 | 8.3827620 | 8.3828886  |
| 24     | 2443.22 | 2443.95 | 100029.86 | 8.3879622 | 8.3880918  |
| 25     | 2472.30 | 2473.05 | 100030.58 | 8.3931008 | 8.3932336  |
| 26     | 2501.38 | 2502.16 | 100031.30 | 8.3981793 | 8.3983152  |
| 27     | 2530.46 | 2531.27 | 100032.03 | 8.4031990 | 8.4033381  |
| 28     | 2559.54 | 2560.38 | 100032.77 | 8.4081614 | 8.4083037  |
| 29     | 2588.62 | 2589.48 | 100032.52 | 8.4130676 | 8.4132132  |
| 30     | 2617.69 | 2618.59 | 100033.28 | 8.4179190 | 8.4180679  |

# 88 Grad.

Minut.

|    | Sinus    | Tang.      | Secant.    | Log. Sin. | Log. Tang. |
|----|----------|------------|------------|-----------|------------|
| 60 | 99984.77 | 5728996.16 | 5729868.85 | 9.9999338 | 11.7580785 |
| 59 | 99984.26 | 5635058.96 | 5635946.19 | 9.9999316 | 11.7508985 |
| 58 | 99983.74 | 5544151.67 | 5545053.45 | 9.9999294 | 11.7438351 |
| 57 | 99983.21 | 5456130.03 | 5457046.35 | 9.9999271 | 11.7368847 |
| 56 | 99982.67 | 5370858.75 | 5371789.62 | 9.9999247 | 11.7300437 |
| 55 | 99982.12 | 5288210.91 | 5289156.37 | 9.9999224 | 11.7233088 |
| 54 | 99981.57 | 5208067.26 | 5209027.22 | 9.9999200 | 11.7166766 |
| 53 | 99981.01 | 5130315.66 | 5131290.17 | 9.9999175 | 11.7101441 |
| 52 | 99980.44 | 5054850.59 | 5055839.65 | 9.9999150 | 11.7037083 |
| 51 | 99979.86 | 4981572.64 | 4982576.23 | 9.9999125 | 11.6973665 |
| 50 | 99979.27 | 4910388.06 | 4911406.20 | 9.9999100 | 11.6911158 |
| 49 | 99978.67 | 4841208.41 | 4842241.10 | 9.9999074 | 11.6849538 |
| 48 | 99978.06 | 4773950.14 | 4774997.38 | 9.9999047 | 11.6788779 |
| 47 | 99977.45 | 4708534.30 | 4709596.08 | 9.9999021 | 11.6728857 |
| 46 | 99976.83 | 4644886.20 | 4645962.53 | 9.9998994 | 11.6669751 |
| 45 | 99976.20 | 4582935.12 | 4584025.99 | 9.9998966 | 11.6611427 |
| 44 | 99975.56 | 4522614.07 | 4523719.49 | 9.9998939 | 11.6553895 |
| 43 | 99974.91 | 4463859.56 | 4464979.52 | 9.9998911 | 11.6497105 |
| 42 | 99974.25 | 4406611.32 | 4407745.83 | 9.9998882 | 11.6441074 |
| 41 | 99973.59 | 4350812.16 | 4351961.22 | 9.9998853 | 11.6385703 |
| 40 | 99972.92 | 4296407.73 | 4297571.34 | 9.9998824 | 11.6331055 |
| 39 | 99972.24 | 4243346.39 | 4244524.54 | 9.9998794 | 11.6277085 |
| 38 | 99971.55 | 4191578.99 | 4192771.68 | 9.9998764 | 11.6223777 |
| 37 | 99970.85 | 4141058.76 | 4142266.00 | 9.9998734 | 11.6171114 |
| 36 | 99970.14 | 4091741.16 | 4092962.95 | 9.9998703 | 11.6119082 |
| 35 | 99969.43 | 4043583.75 | 4044820.09 | 9.9998672 | 11.6067664 |
| 34 | 99968.71 | 3996546.05 | 3997796.94 | 9.9998641 | 11.6016848 |
| 33 | 99967.98 | 3950589.46 | 3951854.89 | 9.9998609 | 11.5966619 |
| 32 | 99967.24 | 3905677.11 | 3906957.09 | 9.9998577 | 11.5916963 |
| 31 | 99966.49 | 3861773.81 | 3863068.34 | 9.9998544 | 11.5867868 |
| 30 | 99965.73 | 3818845.93 | 3820155.00 | 9.9998512 | 11.5819321 |

# I Grad.

| Minut. | Sinus.  | Tang.   | Secant.   | Log. Sin. | Log. Tang. |
|--------|---------|---------|-----------|-----------|------------|
| 30     | 2617.69 | 2618.59 | 100034.28 | 8.4179190 | 8.4180679  |
| 31     | 2646.77 | 2647.70 | 100035.05 | 8.4227168 | 8.4228670  |
| 32     | 2675.85 | 2676.81 | 100035.82 | 8.4274621 | 8.4276176  |
| 33     | 2704.93 | 2705.92 | 100036.60 | 8.4321561 | 8.4323150  |
| 34     | 2734.01 | 2735.03 | 100037.39 | 8.4367999 | 8.4369622  |
| 35     | 2763.09 | 2764.14 | 100038.19 | 8.4413944 | 8.4415603  |
| 36     | 2792.16 | 2793.25 | 100038.00 | 8.4459409 | 8.4461103  |
| 37     | 2821.24 | 2822.36 | 100039.82 | 8.4504402 | 8.4506131  |
| 38     | 2850.32 | 2851.48 | 100040.65 | 8.4548934 | 8.4550699  |
| 39     | 2879.40 | 2880.59 | 100041.48 | 8.4593013 | 8.4594814  |
| 40     | 2908.47 | 2909.70 | 100042.32 | 8.4636649 | 8.4638486  |
| 41     | 2937.55 | 2938.82 | 100043.17 | 8.4679850 | 8.4681725  |
| 42     | 2966.62 | 2967.93 | 100044.03 | 8.4722626 | 8.4724538  |
| 43     | 2995.70 | 2997.05 | 100044.90 | 8.4764984 | 8.4766933  |
| 44     | 3024.78 | 3026.16 | 100045.78 | 8.4806932 | 8.4808920  |
| 45     | 3053.85 | 3055.28 | 100046.67 | 8.4848479 | 8.4850505  |
| 46     | 3082.93 | 3084.39 | 100047.56 | 8.4889632 | 8.4891696  |
| 47     | 3112.00 | 3113.51 | 100048.46 | 8.4930398 | 8.4932502  |
| 48     | 3141.08 | 3142.63 | 100049.37 | 8.4970784 | 8.4972928  |
| 49     | 3170.15 | 3171.74 | 100050.29 | 8.5010798 | 8.5012982  |
| 50     | 3199.22 | 3200.86 | 100051.22 | 8.5050447 | 8.5052671  |
| 51     | 3228.30 | 3229.98 | 100052.15 | 8.5089736 | 8.5092001  |
| 52     | 3257.37 | 3259.10 | 100053.09 | 8.5128673 | 8.5130978  |
| 53     | 3286.44 | 3288.22 | 100054.05 | 8.5167264 | 8.5169610  |
| 54     | 3315.52 | 3317.34 | 100055.01 | 8.5205514 | 8.5207902  |
| 55     | 3344.59 | 3346.46 | 100055.98 | 8.5243430 | 8.5245860  |
| 56     | 3373.66 | 3375.58 | 100056.96 | 8.5281017 | 8.5283490  |
| 57     | 3402.73 | 3404.71 | 100057.95 | 8.5318281 | 8.5320797  |
| 58     | 3431.81 | 3433.83 | 100058.94 | 8.5355228 | 8.5357787  |
| 59     | 3460.88 | 3462.95 | 100059.94 | 8.5391863 | 8.5394466  |
| 60     | 3489.95 | 3492.08 | 100060.95 | 8.5428192 | 8.5430838  |

# 88 Grad.

| Minute. | Sinus.   | Tang.      | Secant.    | Log. Sin. | Log. Tang. |
|---------|----------|------------|------------|-----------|------------|
| 30      | 97965.73 | 3818845.93 | 3820155.00 | 9.9998512 | 11.5819321 |
| 29      | 99994.96 | 3776861.30 | 3778184.92 | 9.9998478 | 11.5771310 |
| 28      | 99964.19 | 3735789.17 | 3737127.34 | 9.9998445 | 11.5723824 |
| 27      | 99963.11 | 3695600.11 | 3696952.82 | 9.9998411 | 11.5676850 |
| 26      | 99962.62 | 3656265.92 | 3657633.18 | 9.9998376 | 11.5630378 |
| 25      | 99961.82 | 3617759.62 | 3619141.43 | 9.9998342 | 11.5584397 |
| 24      | 99961.01 | 3580055.33 | 3581451.68 | 9.9998306 | 11.5538897 |
| 23      | 99960.19 | 3543128.25 | 3544539.15 | 9.9998271 | 11.5493869 |
| 22      | 99959.36 | 3506954.58 | 3508380.03 | 9.9998235 | 11.5449301 |
| 21      | 99958.53 | 3471511.50 | 3472951.50 | 9.9998199 | 11.5405186 |
| 20      | 99957.69 | 3436777.09 | 3438231.63 | 9.9998162 | 11.5361514 |
| 19      | 99956.84 | 3402730.29 | 3404199.39 | 9.9998125 | 11.5318275 |
| 18      | 99955.98 | 3369350.89 | 3370834.53 | 9.9998088 | 11.5275462 |
| 17      | 99955.11 | 3336619.45 | 3338117.63 | 9.9998050 | 11.5233067 |
| 16      | 99954.24 | 3304517.27 | 3306030.00 | 9.9998012 | 11.5191030 |
| 15      | 99953.36 | 3273026.37 | 3274553.65 | 9.9997974 | 11.5149495 |
| 14      | 99952.47 | 3242129.46 | 3243671.29 | 9.9997935 | 11.5108304 |
| 13      | 99951.57 | 3211809.88 | 3213366.26 | 9.9997896 | 11.5067498 |
| 12      | 99950.66 | 3182051.60 | 3183622.52 | 9.9997856 | 11.5027072 |
| 11      | 99949.74 | 3152839.16 | 3154424.63 | 9.9997817 | 11.4987018 |
| 10      | 99948.81 | 3124157.67 | 3125757.70 | 9.9997776 | 11.4947329 |
| 9       | 99947.88 | 3095992.80 | 3097607.37 | 9.9997736 | 11.4907999 |
| 8       | 99946.94 | 3068330.70 | 3069959.82 | 9.9997695 | 11.4869022 |
| 7       | 99945.99 | 3041158.02 | 3042801.69 | 9.9997653 | 11.4830387 |
| 6       | 99945.03 | 3014461.89 | 3016120.10 | 9.9997612 | 11.4792098 |
| 5       | 99944.06 | 2988229.86 | 2989902.63 | 9.9997570 | 11.4754140 |
| 4       | 99943.08 | 2962449.95 | 2964137.26 | 9.9997527 | 11.4716510 |
| 3       | 99942.09 | 2937110.55 | 2938812.41 | 9.9997484 | 11.4679203 |
| 2       | 99941.09 | 2912200.47 | 2913916.88 | 9.9997441 | 11.4642213 |
| 1       | 99940.09 | 2887708.88 | 2889439.84 | 9.9997398 | 11.4605534 |
| 0       | 99939.08 | 2863625.33 | 2865370.83 | 9.9997354 | 11.4569162 |

## 2 Grad.

| Minut. | Sinus   | Tang.   | Secant.   | Log. Sin. | Log. Tang. |
|--------|---------|---------|-----------|-----------|------------|
| 0      | 3489.95 | 3492.08 | 100060.95 | 8.5428192 | 8.5430838  |
| 1      | 3519.02 | 3521.20 | 100061.97 | 8.5464218 | 8.5466909  |
| 2      | 3548.09 | 3550.33 | 100063.00 | 8.5499948 | 8.5502683  |
| 3      | 3577.16 | 3579.45 | 100064.04 | 8.5535386 | 8.5538166  |
| 4      | 3606.23 | 3608.58 | 100065.09 | 8.5570536 | 8.5573362  |
| 5      | 3635.30 | 3637.71 | 100066.15 | 8.5605402 | 8.5608276  |
| 6      | 3664.37 | 3666.83 | 100067.21 | 8.5639994 | 8.5642912  |
| 7      | 3693.44 | 3695.96 | 100068.28 | 8.5674310 | 8.5677275  |
| 8      | 3722.51 | 3725.09 | 100069.36 | 8.5708357 | 8.5711368  |
| 9      | 3751.58 | 3754.22 | 100070.45 | 8.5742139 | 8.5745197  |
| 10     | 3780.65 | 3783.35 | 100071.55 | 8.5775666 | 8.5778766  |
| 11     | 3809.71 | 3812.48 | 100072.66 | 8.5808922 | 8.5812077  |
| 12     | 3838.78 | 3841.61 | 100073.77 | 8.5841933 | 8.5845136  |
| 13     | 3867.85 | 3870.74 | 100074.89 | 8.5874694 | 8.5877945  |
| 14     | 3896.91 | 3899.88 | 100076.02 | 8.5907209 | 8.5910509  |
| 15     | 3925.98 | 3929.01 | 100077.16 | 8.5939483 | 8.5942832  |
| 16     | 3955.05 | 3958.14 | 100078.31 | 8.5971517 | 8.5974917  |
| 17     | 3984.11 | 3987.28 | 100079.47 | 8.6003317 | 8.6006767  |
| 18     | 4013.18 | 4016.41 | 100080.63 | 8.6034886 | 8.6038386  |
| 19     | 4042.24 | 4045.55 | 100081.80 | 8.6066226 | 8.6069777  |
| 20     | 4071.31 | 4074.69 | 100082.98 | 8.6097341 | 8.6100943  |
| 21     | 4100.37 | 4103.83 | 100084.17 | 8.6128235 | 8.6131889  |
| 22     | 4129.44 | 4132.96 | 100085.37 | 8.6158910 | 8.6162616  |
| 23     | 4158.50 | 4162.10 | 100086.58 | 8.6189369 | 8.6193127  |
| 24     | 4187.57 | 4191.24 | 100087.80 | 8.6219616 | 8.6223427  |
| 25     | 4216.63 | 4220.38 | 100089.02 | 8.6249653 | 8.6253518  |
| 26     | 4245.69 | 4249.52 | 100090.25 | 8.6279484 | 8.6283402  |
| 27     | 4274.75 | 4278.66 | 100091.49 | 8.6309111 | 8.6313083  |
| 28     | 4303.82 | 4307.81 | 100092.74 | 8.6338537 | 8.6342563  |
| 29     | 4332.88 | 4336.95 | 100094.00 | 8.6367762 | 8.6371845  |
| 30     | 4361.94 | 4366.09 | 100095.27 | 8.6396796 | 8.6400931  |

## 87 Grad.

| Minute. | Sinus    | Tang.      | Secant.    | Log. Sin. | Log. Tang. |
|---------|----------|------------|------------|-----------|------------|
| 60      | 99939.08 | 2863625.33 | 2365370.83 | 9.9997354 | II.4569162 |
| 59      | 99938.06 | 2839939.69 | 2841699.74 | 9.9997309 | II.4533091 |
| 58      | 99937.03 | 2816642.18 | 2818416.78 | 9.9997265 | II.4497317 |
| 57      | 99935.99 | 2793743.33 | 2795512.48 | 9.9997220 | II.4461834 |
| 56      | 99934.95 | 2771173.99 | 2772977.69 | 9.9997174 | II.4426638 |
| 55      | 99933.90 | 2748985.28 | 2750803.53 | 9.9997128 | II.4391724 |
| 54      | 99932.84 | 2727148.61 | 2728981.41 | 9.9997082 | II.4357088 |
| 53      | 99931.77 | 2705655.68 | 2707503.03 | 9.9997036 | II.4322725 |
| 52      | 99930.69 | 2684498.43 | 2686360.33 | 9.9996989 | II.4288632 |
| 51      | 99929.60 | 2663669.04 | 2665545.49 | 9.9996942 | II.4254803 |
| 50      | 99928.51 | 2643159.96 | 2645050.96 | 9.9996894 | II.4221234 |
| 49      | 99927.40 | 2622963.84 | 2624869.39 | 9.9996846 | II.4187923 |
| 48      | 99926.29 | 2603073.58 | 2604993.68 | 9.9996798 | II.4154864 |
| 47      | 99925.17 | 2583482.27 | 2585416.92 | 9.9996749 | II.4122055 |
| 46      | 99924.04 | 2564183.23 | 2566132.43 | 9.9996700 | II.4089491 |
| 45      | 99922.90 | 2545169.96 | 2547133.71 | 9.9996650 | II.4057168 |
| 44      | 99921.75 | 2526436.15 | 2528414.45 | 9.9996601 | II.4025083 |
| 43      | 99920.60 | 2507975.68 | 2509968.53 | 9.9996550 | II.3993233 |
| 42      | 99919.44 | 2489782.62 | 2491790.02 | 9.9996500 | II.3961614 |
| 41      | 99918.27 | 2471851.19 | 2473873.14 | 9.9996449 | II.3930223 |
| 40      | 99917.09 | 2454175.78 | 2456212.28 | 9.9996398 | II.3899057 |
| 39      | 99915.90 | 2436750.95 | 2438802.00 | 9.9996346 | II.3868111 |
| 38      | 99914.70 | 2419571.40 | 2421637.00 | 9.9996294 | II.3837384 |
| 37      | 99913.49 | 2402631.99 | 2404712.14 | 9.9996242 | II.3806873 |
| 36      | 99912.28 | 2385927.72 | 2388022.42 | 9.9996189 | II.3776573 |
| 35      | 99911.06 | 2369453.72 | 2371562.97 | 9.9996136 | II.3746482 |
| 34      | 99909.83 | 2353205.25 | 2355329.05 | 9.9996082 | II.3716598 |
| 33      | 99908.59 | 2337177.72 | 2339316.07 | 9.9996028 | II.3686917 |
| 32      | 99907.34 | 2321366.65 | 2323519.55 | 9.9995974 | II.3657437 |
| 31      | 99906.08 | 2305767.67 | 2307935.13 | 9.9995919 | II.3628155 |
| 30      | 99904.82 | 2290376.55 | 2292558.56 | 9.9995865 | II.3599059 |



## 2 Grad.

| Minut. | Sinus.  | Tang.   | Secant.   | Log. Sin. | Log. Tang. |
|--------|---------|---------|-----------|-----------|------------|
| 30     | 4361.94 | 4366.09 | 100095.27 | 8.6396796 | 8.6400931  |
| 31     | 4391.00 | 4395.24 | 100095.55 | 8.6425634 | 8.6429825  |
| 32     | 4420.06 | 4424.38 | 100097.83 | 8.6454282 | 8.6458528  |
| 33     | 4449.12 | 4453.53 | 100099.12 | 8.6482742 | 8.6487044  |
| 34     | 4478.18 | 4482.68 | 100100.42 | 8.6511016 | 8.6515375  |
| 35     | 4507.24 | 4511.82 | 100101.73 | 8.6539107 | 8.6543522  |
| 36     | 4536.30 | 4540.97 | 100103.05 | 8.6567017 | 8.6571490  |
| 37     | 4565.36 | 4570.12 | 100104.38 | 8.6594748 | 8.6599279  |
| 38     | 4594.42 | 4599.27 | 100105.71 | 8.6622303 | 8.6626891  |
| 39     | 4623.47 | 4628.42 | 100107.05 | 8.6649684 | 8.6654331  |
| 40     | 4652.53 | 4657.57 | 100108.40 | 8.6676893 | 8.6681598  |
| 41     | 4681.59 | 4686.73 | 100109.76 | 8.6703932 | 8.6708697  |
| 42     | 4710.64 | 4715.88 | 100111.13 | 8.6730804 | 8.6735628  |
| 43     | 4739.70 | 4745.03 | 100112.51 | 8.6757510 | 8.6762393  |
| 44     | 4768.76 | 4774.19 | 100113.90 | 8.6784052 | 8.6788996  |
| 45     | 4797.81 | 4803.34 | 100115.30 | 8.6810433 | 8.6815437  |
| 46     | 4826.87 | 4832.50 | 100116.70 | 8.6836654 | 8.6841719  |
| 47     | 4855.92 | 4861.66 | 100118.11 | 8.6862718 | 8.6867844  |
| 48     | 4884.98 | 4890.82 | 100119.53 | 8.6888625 | 8.6893813  |
| 49     | 4914.03 | 4919.97 | 100120.96 | 8.6914379 | 8.6919629  |
| 50     | 4943.08 | 4949.13 | 100122.40 | 8.6939980 | 8.6945292  |
| 51     | 4972.14 | 4978.29 | 100123.85 | 8.6965431 | 8.6970806  |
| 52     | 5001.19 | 5007.46 | 100125.30 | 8.6990734 | 8.6996172  |
| 53     | 5030.24 | 5036.62 | 100126.76 | 8.7015889 | 8.7021390  |
| 54     | 5059.29 | 5065.78 | 100128.23 | 8.7040899 | 8.7046465  |
| 55     | 5088.35 | 5094.95 | 100129.71 | 8.7065766 | 8.7071395  |
| 56     | 5117.40 | 5124.11 | 100131.20 | 8.7090490 | 8.7096185  |
| 57     | 5146.45 | 5153.28 | 100132.70 | 8.7115075 | 8.7120834  |
| 58     | 5175.50 | 5182.44 | 100134.20 | 8.7139520 | 8.7145345  |
| 59     | 5204.55 | 5211.61 | 100135.71 | 8.7163829 | 8.7169719  |
| 60     | 5233.60 | 5240.78 | 100137.23 | 8.7188002 | 8.7193958  |

# 87 Grad.

| Minut. | Sinus.   | Tang.      | Secant.    | Log. Sin. | Log. Tang. |
|--------|----------|------------|------------|-----------|------------|
| 30     | 99904.82 | 2290376.55 | 2292558.56 | 9.9995865 | II.3599069 |
| 29     | 99903.55 | 2275189.16 | 2277585.72 | 9.9995809 | II.3570175 |
| 28     | 99902.27 | 2260201.48 | 2262412.59 | 9.9995753 | II.3541472 |
| 27     | 99900.98 | 2245409.59 | 2247635.25 | 9.9995697 | II.3512956 |
| 26     | 99899.68 | 2230809.67 | 2233049.89 | 9.9995641 | II.3484625 |
| 25     | 99898.37 | 2216348.02 | 2218752.78 | 9.9995584 | II.3456478 |
| 24     | 99897.05 | 2202171.00 | 2204440.32 | 9.9995527 | II.3428510 |
| 23     | 99895.73 | 2188125.10 | 2190408.97 | 9.9995469 | II.3400721 |
| 22     | 99894.40 | 2174256.87 | 2176555.29 | 9.9995411 | II.3373100 |
| 21     | 99893.06 | 2160562.96 | 2162875.93 | 9.9995353 | II.3345669 |
| 20     | 99891.71 | 2147040.10 | 2149367.63 | 9.9995297 | II.3318402 |
| 19     | 99890.35 | 2133685.11 | 2136027.19 | 9.9995236 | II.3291303 |
| 18     | 99888.98 | 2120494.88 | 2122851.51 | 9.9995176 | II.3264372 |
| 17     | 99887.61 | 2107466.37 | 2109837.55 | 9.9995116 | II.3237607 |
| 16     | 99886.23 | 2094506.63 | 2096982.36 | 9.9995056 | II.3211004 |
| 15     | 99884.84 | 2081882.76 | 2084283.05 | 9.9994996 | II.3184563 |
| 14     | 99883.44 | 2069321.96 | 2071736.70 | 9.9994935 | II.3158281 |
| 13     | 99882.03 | 2056911.17 | 2059340.86 | 9.9994874 | II.3132156 |
| 12     | 99880.61 | 2044648.61 | 2057092.55 | 9.9994812 | II.3106187 |
| 11     | 99879.18 | 2032530.75 | 2034989.27 | 9.9994750 | II.3080371 |
| 10     | 99877.75 | 2020555.35 | 2023028.40 | 9.9994688 | II.3054708 |
| 9      | 99876.31 | 2008719.89 | 2011207.50 | 9.9994625 | II.3029194 |
| 8      | 99874.86 | 1997021.95 | 1999524.11 | 9.9994562 | II.3003828 |
| 7      | 99873.40 | 1985459.12 | 1987975.84 | 9.9994498 | II.2978610 |
| 6      | 99871.93 | 1974029.10 | 1976560.36 | 9.9994435 | II.2953535 |
| 5      | 99870.45 | 1962729.59 | 1965275.41 | 9.9994370 | II.2928605 |
| 4      | 99868.97 | 1951558.37 | 1954118.74 | 9.9994306 | II.2903815 |
| 3      | 99867.48 | 1940513.27 | 1943088.20 | 9.9994241 | II.2879166 |
| 2      | 99865.98 | 1929592.17 | 1932181.05 | 9.9994176 | II.2854655 |
| 1      | 99864.47 | 1918792.98 | 1921397.01 | 9.9994110 | II.2830281 |
| 0      | 99862.95 | 1908113.67 | 1910732.26 | 9.9994044 | II.2806042 |

## 3 Grad.

| Minut. | Sinus   | Tang.   | Secant.   | Log. Sin. | Log. Tang. |
|--------|---------|---------|-----------|-----------|------------|
| 0      | 5233.60 | 5240.78 | 100137.23 | 8.7188002 | 8.7193958  |
| 1      | 5262.64 | 5269.95 | 100138.76 | 8.7212040 | 8.7218063  |
| 2      | 5291.69 | 5299.12 | 100140.30 | 8.7235946 | 8.7242035  |
| 3      | 5320.74 | 5328.29 | 100141.85 | 8.7259721 | 8.7265877  |
| 4      | 5349.79 | 5357.46 | 100143.41 | 8.7283366 | 8.7289589  |
| 5      | 5378.83 | 5386.63 | 100144.98 | 8.7306882 | 8.7313174  |
| 6      | 5407.88 | 5415.81 | 100146.55 | 8.7330272 | 8.7336631  |
| 7      | 5436.93 | 5444.98 | 100148.13 | 8.7353535 | 8.7359964  |
| 8      | 5465.97 | 5474.16 | 100149.72 | 8.7376675 | 8.7383172  |
| 9      | 5495.02 | 5503.33 | 100151.32 | 8.7399691 | 8.7406258  |
| 10     | 5524.06 | 5532.51 | 100152.93 | 8.7422586 | 8.7429222  |
| 11     | 5553.11 | 5561.69 | 100154.55 | 8.7445360 | 8.7452067  |
| 12     | 5582.15 | 5590.87 | 100156.17 | 8.7468015 | 8.7474792  |
| 13     | 5611.19 | 5620.05 | 100157.80 | 8.7490553 | 8.7497400  |
| 14     | 5640.24 | 5649.23 | 100159.44 | 8.7512973 | 8.7519892  |
| 15     | 5669.28 | 5678.41 | 100161.09 | 8.7535278 | 8.7542269  |
| 16     | 5698.32 | 5707.59 | 100162.75 | 8.7557469 | 8.7564531  |
| 17     | 5727.36 | 5736.78 | 100164.42 | 8.7579546 | 8.7586681  |
| 18     | 5756.40 | 5765.96 | 100166.10 | 8.7601512 | 8.7608719  |
| 19     | 5785.44 | 5795.15 | 100167.78 | 8.7623366 | 8.7630647  |
| 20     | 5814.44 | 5824.34 | 100169.47 | 8.7645111 | 8.7652465  |
| 21     | 5843.52 | 5853.52 | 100171.17 | 8.7666747 | 8.7674175  |
| 22     | 5872.56 | 5882.71 | 100172.88 | 8.7688275 | 8.7695777  |
| 23     | 5901.60 | 5911.90 | 100174.60 | 8.7709697 | 8.7717274  |
| 24     | 5930.64 | 5941.09 | 100176.33 | 8.7731014 | 8.7737665  |
| 25     | 5959.67 | 5970.29 | 100178.07 | 8.7752226 | 8.7759952  |
| 26     | 5988.71 | 5999.48 | 100179.81 | 8.7773334 | 8.7781136  |
| 27     | 6017.75 | 6028.67 | 100181.56 | 8.7794340 | 8.7802218  |
| 28     | 6046.78 | 6057.87 | 100183.32 | 8.7815244 | 8.7823199  |
| 29     | 6075.82 | 6087.06 | 100185.09 | 8.7836048 | 8.7844079  |
| 30     | 6104.85 | 6116.26 | 100186.87 | 8.7856853 | 8.7864861  |

# 86 Grad.

| Minut. | Sinus    | Tang.      | Secant.    | Log. Sin. | Log. Tang. |
|--------|----------|------------|------------|-----------|------------|
| 60     | 99862.95 | 1908113.67 | 1910732.26 | 9.9994044 | 11.2806042 |
| 59     | 99861.42 | 1897552.26 | 1900185.40 | 9.9993978 | 11.2781937 |
| 58     | 99859.89 | 1887106.80 | 1889754.50 | 9.9993911 | 11.2757965 |
| 57     | 99858.35 | 1876775.39 | 1879437.65 | 9.9993844 | 11.2734123 |
| 56     | 99856.80 | 1866556.18 | 1869232.99 | 9.9993776 | 11.2710411 |
| 55     | 99855.24 | 1856447.34 | 1859138.71 | 9.9993708 | 11.2686826 |
| 54     | 99853.67 | 1846447.09 | 1849153.01 | 9.9993640 | 11.2663369 |
| 53     | 99852.09 | 1836553.70 | 1839274.17 | 9.9993572 | 11.2640036 |
| 52     | 99850.50 | 1826765.44 | 1829500.48 | 9.9993503 | 11.2616828 |
| 51     | 99848.91 | 1817080.67 | 1819830.26 | 9.9993433 | 11.2593742 |
| 50     | 99847.31 | 1807497.74 | 1810261.88 | 9.9993364 | 11.2570778 |
| 49     | 99845.70 | 1798015.05 | 1800793.75 | 9.9993293 | 11.2547933 |
| 48     | 99844.08 | 1788931.04 | 1791424.29 | 9.9993223 | 11.2525208 |
| 47     | 99842.45 | 1779344.17 | 1782151.98 | 9.9993152 | 11.2502600 |
| 46     | 99840.81 | 1770152.94 | 1772975.31 | 9.9993081 | 11.2480108 |
| 45     | 99839.16 | 1761055.88 | 1763892.80 | 9.9993009 | 11.2457731 |
| 44     | 99837.51 | 1752051.55 | 1754903.03 | 9.9992938 | 11.2435469 |
| 43     | 99835.85 | 1743138.54 | 1746004.57 | 9.9992865 | 11.2413319 |
| 42     | 99834.18 | 1734315.46 | 1737196.05 | 9.9992793 | 11.2391281 |
| 41     | 99832.50 | 1725580.95 | 1728476.10 | 9.9992720 | 11.2369353 |
| 40     | 99830.81 | 1716933.69 | 1719843.40 | 9.9992646 | 11.2347535 |
| 39     | 99829.11 | 1708372.38 | 1711296.64 | 9.9992572 | 11.2325825 |
| 38     | 99827.41 | 1699895.74 | 1702834.56 | 9.9992498 | 11.2304223 |
| 37     | 99825.70 | 1691502.51 | 1694455.89 | 9.9992424 | 11.2282726 |
| 36     | 99823.98 | 1683191.48 | 1686159.41 | 9.9992349 | 11.2261335 |
| 35     | 99822.25 | 1674961.44 | 1677943.92 | 9.9992274 | 11.2240044 |
| 34     | 99820.51 | 1666811.20 | 1669808.25 | 9.9992198 | 11.2218864 |
| 33     | 99818.76 | 1658739.62 | 1661751.22 | 9.9992122 | 11.2197782 |
| 32     | 99817.01 | 1650745.55 | 1653771.71 | 9.9992046 | 11.2176801 |
| 31     | 99815.25 | 1642827.89 | 1645868.61 | 9.9991969 | 11.2155911 |
| 30     | 99813.48 | 1634985.55 | 1638040.82 | 9.9991892 | 11.2135139 |

### 3 Grad.

| Minut. | Sinus.  | Tang.   | Secant.   | Log. Sin. | Log. Tang. |
|--------|---------|---------|-----------|-----------|------------|
| 30     | 6104.85 | 6116.26 | 100186.87 | 8.7856753 | 8.7864861  |
| 31     | 6133.89 | 6145.46 | 100188.66 | 8.7877359 | 8.7885544  |
| 32     | 6162.92 | 6174.66 | 100190.46 | 8.7897867 | 8.7906130  |
| 33     | 6191.96 | 6203.86 | 100192.26 | 8.7918278 | 8.7926620  |
| 34     | 6220.99 | 6233.06 | 100194.07 | 8.7938594 | 8.7947014  |
| 35     | 6250.02 | 6262.26 | 100195.89 | 8.7958814 | 8.7967313  |
| 36     | 6279.05 | 6291.47 | 100197.72 | 8.7978941 | 8.7987519  |
| 37     | 6308.08 | 6320.07 | 100199.56 | 8.7998974 | 8.8007632  |
| 38     | 6337.11 | 6349.88 | 100201.41 | 8.8018915 | 8.8027653  |
| 39     | 6366.14 | 6379.08 | 100203.26 | 8.8038764 | 7.8047583  |
| 40     | 6395.17 | 6408.29 | 100205.12 | 8.8058523 | 8.8067422  |
| 41     | 6424.20 | 6437.50 | 100206.99 | 8.8078192 | 8.8087172  |
| 42     | 6453.23 | 6466.71 | 100208.87 | 8.8097772 | 8.8106834  |
| 43     | 6482.26 | 6495.92 | 100210.76 | 8.8117264 | 8.8126407  |
| 44     | 6511.29 | 6525.13 | 100212.66 | 8.8136668 | 8.8145894  |
| 45     | 6540.31 | 6554.35 | 100214.57 | 8.8155985 | 8.8165294  |
| 46     | 6569.34 | 6583.56 | 100216.49 | 8.8175217 | 8.8184608  |
| 47     | 6598.36 | 6612.78 | 100218.41 | 8.8194363 | 8.8203838  |
| 48     | 6627.39 | 6641.99 | 100220.34 | 8.8213425 | 8.8222984  |
| 49     | 6656.41 | 6671.21 | 100222.28 | 8.8232404 | 8.8242046  |
| 50     | 6685.44 | 6700.43 | 100224.23 | 8.8251299 | 8.8261026  |
| 51     | 6714.46 | 6729.65 | 100226.19 | 8.8270112 | 8.8279924  |
| 52     | 6743.48 | 6758.87 | 100228.16 | 8.8288844 | 8.8298741  |
| 53     | 6772.51 | 6788.09 | 100230.13 | 8.8307495 | 8.8317478  |
| 54     | 6801.53 | 6817.32 | 100232.11 | 8.8326066 | 8.8336134  |
| 55     | 6830.55 | 6846.54 | 100234.10 | 8.8344557 | 8.8354712  |
| 56     | 6859.57 | 6875.77 | 100236.10 | 8.8362969 | 8.8373211  |
| 57     | 6888.59 | 6904.99 | 100238.11 | 8.8381304 | 8.8391533  |
| 58     | 6917.61 | 6934.22 | 100240.13 | 8.8399561 | 8.8409977  |
| 59     | 6946.63 | 6963.45 | 100242.16 | 8.8417741 | 8.8428245  |
| 60     | 6975.65 | 6992.58 | 100244.19 | 8.8435845 | 8.8446437  |

# 86 Grad.

| Minut. | Sinus.   | Tang.      | Secant.    | Log. Sin. | Log. Tang. |
|--------|----------|------------|------------|-----------|------------|
| 30     | 99813.48 | 1634985.55 | 1638040.82 | 9.9991892 | II.2135139 |
| 29     | 99811.70 | 1627217.44 | 1630287.28 | 9.9991815 | II.2114456 |
| 28     | 99809.91 | 1619522.53 | 1622606.93 | 9.9991737 | II.2093870 |
| 27     | 99808.11 | 1611899.79 | 1614998.74 | 9.9991659 | II.2073380 |
| 26     | 99806.30 | 1604348.19 | 1607461.70 | 9.9991580 | II.2052986 |
| 25     | 99804.49 | 1596866.74 | 1599994.81 | 9.9991501 | II.2032687 |
| 24     | 99802.67 | 1589454.48 | 1592597.11 | 9.9991422 | II.2012481 |
| 23     | 99800.84 | 1582110.45 | 1585267.64 | 9.9991342 | II.1992368 |
| 22     | 99799.00 | 1574833.71 | 1578005.45 | 9.9991262 | II.1972347 |
| 21     | 99797.15 | 1567623.33 | 1570809.63 | 9.9991182 | II.1952417 |
| 20     | 99795.29 | 1560478.41 | 1563679.27 | 9.9991101 | II.1932578 |
| 19     | 99793.43 | 1553398.06 | 1556613.48 | 9.9991020 | II.1912828 |
| 18     | 99791.56 | 1546381.41 | 1549611.99 | 9.9990938 | II.1893166 |
| 17     | 99789.68 | 1539427.60 | 1542672.15 | 9.9990856 | II.1873593 |
| 16     | 99787.79 | 1532535.80 | 1535794.90 | 9.9990774 | II.1854106 |
| 15     | 99785.89 | 1525705.17 | 1528978.83 | 9.9990691 | II.1834706 |
| 14     | 99783.98 | 1518934.90 | 1522223.12 | 9.9990608 | II.1815392 |
| 13     | 99782.06 | 1512224.20 | 1515526.98 | 9.9990525 | II.1796162 |
| 12     | 99780.14 | 1505572.27 | 1508889.61 | 9.9990441 | II.1777016 |
| 11     | 99778.21 | 1498978.36 | 1502310.26 | 9.9990357 | II.1757954 |
| 10     | 99776.27 | 1492441.70 | 1495788.16 | 9.9990273 | II.1738974 |
| 9      | 99774.32 | 1485961.55 | 1489322.58 | 9.9990188 | II.1720076 |
| 8      | 99772.36 | 1479537.18 | 1482912.77 | 9.9990103 | II.1701259 |
| 7      | 99770.39 | 1473167.87 | 1476558.02 | 9.9990017 | II.1682522 |
| 6      | 99768.42 | 1466852.92 | 1470257.63 | 9.9989931 | II.1663866 |
| 5      | 99766.44 | 1460541.63 | 1464010.90 | 9.9989845 | II.1645288 |
| 4      | 99764.45 | 1454383.32 | 1457817.15 | 9.9989758 | II.1626789 |
| 3      | 99762.45 | 1448227.32 | 1451676.71 | 9.9989671 | II.1608367 |
| 2      | 99760.44 | 1442122.97 | 1445585.92 | 9.9989584 | II.1590023 |
| 1      | 99758.42 | 1436069.61 | 1439547.13 | 9.9989496 | II.1571755 |
| 0      | 99756.40 | 1430066.63 | 1433558.70 | 9.9989408 | II.1553563 |

## 4 Grad.

| Minut. | Sinus   | Tang.   | Secant.   | Log. Sin. | Log. Tang. |
|--------|---------|---------|-----------|-----------|------------|
| 0      | 6975.65 | 6992.68 | 100244.19 | 8.8435845 | 8.8446437  |
| 1      | 7004.66 | 7021.91 | 100246.23 | 8.8453874 | 8.8464554  |
| 2      | 7033.68 | 7051.15 | 100248.28 | 8.8471827 | 8.8482597  |
| 3      | 7062.70 | 7080.38 | 100250.34 | 8.8489707 | 8.8500566  |
| 4      | 7091.71 | 7109.61 | 100252.41 | 8.8507512 | 8.8518461  |
| 5      | 7120.73 | 7138.85 | 100254.49 | 8.8525245 | 8.8536283  |
| 6      | 7149.74 | 7168.09 | 100256.58 | 8.8542905 | 8.8554034  |
| 7      | 7178.76 | 7197.33 | 100258.68 | 8.8560493 | 8.8571713  |
| 8      | 7207.77 | 7226.57 | 100260.78 | 8.8578010 | 8.8589321  |
| 9      | 7236.78 | 7255.81 | 100262.89 | 8.8595457 | 8.8606859  |
| 10     | 7265.80 | 7285.05 | 100265.01 | 8.8612833 | 8.8624327  |
| 11     | 7294.81 | 7314.30 | 100267.14 | 8.8630139 | 8.8641725  |
| 12     | 7323.82 | 7343.54 | 100269.28 | 8.8647376 | 8.8659055  |
| 13     | 7352.83 | 7372.79 | 100271.43 | 8.8664545 | 8.8676317  |
| 14     | 7381.84 | 7402.03 | 100273.58 | 8.8681646 | 8.8693511  |
| 15     | 7410.85 | 7431.28 | 100275.74 | 8.8698680 | 8.8710638  |
| 16     | 7439.86 | 7460.53 | 100277.91 | 8.8715646 | 8.8727699  |
| 17     | 7468.87 | 7489.79 | 100280.09 | 8.8732546 | 8.8744694  |
| 18     | 7497.87 | 7519.04 | 100282.28 | 8.8749281 | 8.8761623  |
| 19     | 7526.88 | 7548.29 | 100284.48 | 8.8766150 | 8.8778487  |
| 20     | 7555.89 | 7577.55 | 100286.68 | 8.8782854 | 8.8795286  |
| 21     | 7584.89 | 7606.80 | 100288.89 | 8.8799493 | 8.8812022  |
| 22     | 7613.90 | 7636.06 | 100291.11 | 8.8816069 | 8.8828694  |
| 23     | 7642.90 | 7665.32 | 100293.34 | 8.8832581 | 8.8845303  |
| 24     | 7671.90 | 7694.58 | 100295.58 | 8.8849031 | 8.8861850  |
| 25     | 7700.91 | 7723.84 | 100297.83 | 8.8865418 | 8.8878334  |
| 26     | 7729.91 | 7753.11 | 100300.09 | 8.8881743 | 8.8894757  |
| 27     | 7758.91 | 7782.37 | 100302.36 | 8.8898007 | 8.8911119  |
| 28     | 7787.91 | 7811.64 | 100304.64 | 8.8914209 | 8.8927420  |
| 29     | 7816.91 | 7840.90 | 100306.93 | 8.8930351 | 8.8943660  |
| 30     | 7845.91 | 7870.17 | 100309.22 | 8.8946433 | 8.8959842  |

## 85 Grad.

| Minute. | Sinus    | Tang.      | Secant.    | Log. Sin. | Log. Tang. |
|---------|----------|------------|------------|-----------|------------|
| 60      | 99756.40 | 1430066.63 | 1433558.70 | 9.9989408 | II.1553563 |
| 59      | 99754.37 | 1424113.37 | 1427620.01 | 9.9989319 | II.1535446 |
| 58      | 99752.33 | 1418209.24 | 1421730.45 | 9.9989230 | II.1517403 |
| 57      | 99750.28 | 1412353.63 | 1415889.39 | 9.9989141 | II.1499434 |
| 56      | 99748.22 | 1406545.93 | 1410096.25 | 9.9989052 | II.1481539 |
| 55      | 99746.15 | 1400785.56 | 1404350.45 | 9.9988962 | II.1463717 |
| 54      | 99744.07 | 1395071.94 | 1398651.39 | 9.9988871 | II.1445966 |
| 53      | 99741.99 | 1389404.51 | 1392998.52 | 9.9988780 | II.1428287 |
| 52      | 99739.90 | 1383782.70 | 1387391.28 | 9.9988689 | II.1410679 |
| 51      | 99737.80 | 1378205.98 | 1381829.12 | 9.9988598 | II.1393141 |
| 50      | 99735.69 | 1372673.79 | 1376311.49 | 9.9988506 | II.1375673 |
| 49      | 99733.57 | 1367185.60 | 1370837.87 | 9.9988414 | II.1358275 |
| 48      | 99731.44 | 1361740.89 | 1365407.72 | 9.9988321 | II.1340945 |
| 47      | 99729.31 | 1356339.15 | 1360020.54 | 9.9988228 | II.1323683 |
| 46      | 99727.17 | 1350979.86 | 1354675.82 | 9.9988135 | II.1306489 |
| 45      | 99725.02 | 1345662.53 | 1349373.06 | 9.9988041 | II.1289362 |
| 44      | 99722.86 | 1340386.67 | 1344111.76 | 9.9987947 | II.1272301 |
| 43      | 99720.69 | 1335151.79 | 1338891.44 | 9.9987853 | II.1255306 |
| 42      | 99718.51 | 1329957.41 | 1333711.63 | 9.9987758 | II.1238377 |
| 41      | 99716.32 | 1324803.07 | 1328571.86 | 9.9987663 | II.1221513 |
| 40      | 99714.13 | 1319688.30 | 1323471.65 | 9.9987567 | II.1204714 |
| 39      | 99711.93 | 1314612.66 | 1318410.57 | 9.9987471 | II.1187978 |
| 38      | 99709.72 | 1309575.68 | 1313388.16 | 9.9987375 | II.1171306 |
| 37      | 99707.50 | 1304576.93 | 1308403.98 | 9.9987278 | II.1154697 |
| 36      | 99705.27 | 1299615.98 | 1303457.60 | 9.9987181 | II.1138150 |
| 35      | 99703.03 | 1294692.40 | 1298548.58 | 9.9987084 | II.1121666 |
| 34      | 99700.79 | 1289805.77 | 1293676.51 | 9.9986986 | II.1105243 |
| 33      | 99698.54 | 1284955.66 | 1288840.97 | 9.9986888 | II.1088881 |
| 32      | 99696.28 | 1280141.68 | 1284041.55 | 9.9986790 | II.1072580 |
| 31      | 99694.01 | 1275363.41 | 1279277.86 | 9.9986691 | II.1056340 |
| 30      | 99691.73 | 1270620.47 | 1274549.48 | 9.9986591 | II.1040158 |



## 4 Grad.

| Minut. | Sinus.  | Tang.   | Secant.   | Log. Sin. | Log. Tang. |
|--------|---------|---------|-----------|-----------|------------|
| 30     | 7845.91 | 7870.17 | 100309.22 | 8.8946433 | 8.8959842  |
| 31     | 7874.91 | 7899.44 | 100311.52 | 8.8962455 | 8.8975963  |
| 32     | 7903.91 | 7928.71 | 100313.83 | 8.8978418 | 8.8992026  |
| 33     | 7932.90 | 7957.98 | 100316.15 | 8.8994322 | 8.9008030  |
| 34     | 7961.90 | 7987.26 | 100318.48 | 8.9010168 | 8.9023977  |
| 35     | 7990.90 | 8016.53 | 100320.81 | 8.9025955 | 8.9039866  |
| 36     | 8019.89 | 8045.81 | 100323.15 | 8.9041685 | 8.9055697  |
| 37     | 8048.89 | 8075.09 | 100325.50 | 8.9057358 | 8.9071472  |
| 38     | 8077.88 | 8104.37 | 100327.86 | 8.9072975 | 8.9087190  |
| 39     | 8106.87 | 8133.65 | 100330.23 | 8.9088535 | 8.9102853  |
| 40     | 8135.87 | 8162.93 | 100332.61 | 8.9104039 | 8.9118460  |
| 41     | 8164.86 | 8192.21 | 100335.00 | 8.9119487 | 8.9134012  |
| 42     | 8193.85 | 8221.50 | 100337.40 | 8.9134881 | 8.9149509  |
| 43     | 8222.84 | 8250.78 | 100339.80 | 8.9150219 | 8.9164952  |
| 44     | 8251.83 | 8280.07 | 100342.21 | 8.9165504 | 8.9180340  |
| 45     | 8280.82 | 8309.36 | 100344.63 | 8.9180734 | 8.9195675  |
| 46     | 8309.81 | 8338.65 | 100347.06 | 8.9195911 | 8.9210957  |
| 47     | 8338.80 | 8367.94 | 100349.50 | 8.9211034 | 8.9226186  |
| 48     | 8367.78 | 8397.23 | 100351.95 | 8.9226105 | 8.9241363  |
| 49     | 8396.77 | 8426.53 | 100354.41 | 8.9241123 | 8.9256487  |
| 50     | 8425.76 | 8455.83 | 100356.87 | 8.9256089 | 8.9271560  |
| 51     | 8454.74 | 8485.12 | 100359.34 | 8.9271003 | 8.9286581  |
| 52     | 8483.73 | 8514.42 | 100361.82 | 8.9285866 | 8.9301552  |
| 53     | 8512.71 | 8543.72 | 100364.31 | 8.9300678 | 8.9316471  |
| 54     | 8541.69 | 8573.02 | 100366.81 | 8.9315439 | 8.9331340  |
| 55     | 8570.67 | 8602.33 | 100369.32 | 8.9330150 | 8.9346160  |
| 56     | 8599.66 | 8631.63 | 100371.84 | 8.9344811 | 8.9360929  |
| 57     | 8628.64 | 8660.94 | 100374.36 | 8.9359422 | 8.9375650  |
| 58     | 8657.62 | 8690.25 | 100376.89 | 8.9373983 | 8.9390321  |
| 59     | 8686.60 | 8719.56 | 100379.43 | 8.9388496 | 8.9404944  |
| 60     | 8715.57 | 8748.87 | 100381.98 | 8.9402960 | 8.9419518  |

# 85 Grad.

| Minute. | Sinus.   | Tang.      | Secant.    | Log. Sin. | Log. Tang. |
|---------|----------|------------|------------|-----------|------------|
| 30      | 99691.73 | I270620.47 | I274549.48 | 9.9986591 | II.1040158 |
| 29      | 99689.44 | I265912.46 | I269856.04 | 9.9986492 | II.1024037 |
| 28      | 99687.15 | I261239.00 | I265197.15 | 9.9986392 | II.1007974 |
| 27      | 99684.85 | I256599.71 | I260572.42 | 9.9986292 | II.0991970 |
| 26      | 99682.54 | I251994.20 | I255981.48 | 9.9986191 | II.1976023 |
| 25      | 99680.22 | I247422.12 | I251423.97 | 9.9986090 | II.0960134 |
| 24      | 99677.89 | I242883.10 | I246899.52 | 9.9985988 | II.0944303 |
| 23      | 99675.55 | I238376.79 | I242407.77 | 9.9985886 | II.0928528 |
| 22      | 99673.20 | I233902.82 | I237948.37 | 9.9985784 | II.0912810 |
| 21      | 99670.85 | I229460.85 | I233520.97 | 9.9985682 | II.0897147 |
| 20      | 99668.49 | I225050.55 | I229125.23 | 9.9985579 | II.0881540 |
| 19      | 99666.12 | I220671.56 | I224760.82 | 9.9985475 | II.0865988 |
| 18      | 99663.74 | I216323.56 | I220427.39 | 9.9985372 | II.0850491 |
| 17      | 99661.35 | I212006.22 | I216124.62 | 9.9985268 | II.0835048 |
| 16      | 99658.95 | I207719.22 | I211852.18 | 9.9985163 | II.0819660 |
| 15      | 99656.55 | I203462.23 | I207609.76 | 9.9985058 | II.0804325 |
| 14      | 99654.14 | II99234.95 | I203397.05 | 9.9984953 | II.0789043 |
| 13      | 99651.72 | II95037.05 | II99213.72 | 9.9984848 | II.0773814 |
| 12      | 99649.29 | II90868.24 | II95059.48 | 9.9984742 | II.0758637 |
| 11      | 99646.85 | II86728.21 | II90934.02 | 9.9984636 | II.0743513 |
| 10      | 99644.40 | II82616.67 | II86837.55 | 9.9984529 | II.0728440 |
| 9       | 99641.94 | II78533.31 | II82768.27 | 9.9984422 | II.0713419 |
| 8       | 99639.48 | II74477.86 | II78727.39 | 9.9984315 | II.0698448 |
| 7       | 99637.01 | II70450.03 | II74714.12 | 9.9984207 | II.0683529 |
| 6       | 99634.53 | II66449.53 | II70728.19 | 9.9984099 | II.0668660 |
| 5       | 99632.04 | II62476.08 | II66769.32 | 9.9983990 | II.0653840 |
| 4       | 99629.54 | II58529.42 | II62837.23 | 9.9983881 | II.0639071 |
| 3       | 99627.03 | II54609.27 | II58931.65 | 9.9983772 | II.0624350 |
| 2       | 99624.52 | II50715.36 | II55052.31 | 9.9983663 | II.0609670 |
| 1       | 99622.00 | II46847.43 | II51198.96 | 9.9983553 | II.0595056 |
| 0       | 99619.47 | II43005.23 | II47371.32 | 9.9983442 | II.0580482 |

## 5 Grad.

| Minut. | Sinus   | Tang.   | Secant.   | Log. Sin. | Log. Tang. |
|--------|---------|---------|-----------|-----------|------------|
| 0      | 8715.57 | 8748.87 | 100381.98 | 8.9402960 | 8.9419518  |
| 1      | 8744.55 | 8778.18 | 100384.54 | 8.9417376 | 8.9434044  |
| 2      | 8773.53 | 8807.49 | 100387.11 | 8.9431743 | 8.9448523  |
| 3      | 8802.51 | 8836.81 | 100389.69 | 8.9446063 | 8.9462954  |
| 4      | 8831.48 | 8866.12 | 100392.28 | 8.9460335 | 8.9477338  |
| 5      | 8860.46 | 8895.44 | 100394.87 | 8.9474561 | 8.9491676  |
| 6      | 8889.43 | 8924.76 | 100397.47 | 8.9488739 | 8.9505967  |
| 7      | 8918.40 | 8954.08 | 100400.08 | 8.9502871 | 8.9520211  |
| 8      | 8947.38 | 8983.41 | 100402.70 | 8.9516957 | 8.9534410  |
| 9      | 8976.35 | 9012.73 | 100405.33 | 8.9530996 | 8.9548564  |
| 10     | 9005.32 | 9042.06 | 100407.97 | 8.9544991 | 8.9562672  |
| 11     | 9034.29 | 9071.38 | 100410.61 | 8.9558940 | 8.9576735  |
| 12     | 9063.26 | 9100.71 | 100413.26 | 8.9572843 | 8.9590754  |
| 13     | 9092.23 | 9130.04 | 100315.92 | 8.9586703 | 8.9604728  |
| 14     | 9121.19 | 9159.38 | 100418.59 | 8.9600517 | 8.9618659  |
| 15     | 9150.16 | 9188.71 | 100421.27 | 8.9614288 | 8.9632545  |
| 16     | 9179.13 | 9218.04 | 100423.96 | 8.9628014 | 8.9646386  |
| 17     | 9208.09 | 9247.38 | 100426.66 | 8.9641697 | 8.9660188  |
| 18     | 9237.06 | 9276.72 | 100429.37 | 8.9655337 | 8.9673944  |
| 19     | 9266.02 | 9306.06 | 100432.08 | 8.9668934 | 8.9687658  |
| 20     | 9294.99 | 9335.40 | 100434.80 | 8.9682487 | 8.9701330  |
| 21     | 9323.95 | 9364.74 | 100437.53 | 8.9695999 | 8.9714959  |
| 22     | 9352.91 | 9394.09 | 100440.27 | 8.9709468 | 8.9728547  |
| 23     | 9381.87 | 9423.44 | 100443.02 | 8.9722895 | 8.9742092  |
| 24     | 9410.83 | 9452.78 | 100445.78 | 8.9736280 | 8.9755597  |
| 25     | 9439.79 | 9382.13 | 100448.55 | 8.9749624 | 8.9769060  |
| 26     | 9468.75 | 9511.48 | 100451.33 | 8.9762926 | 8.9782483  |
| 27     | 9497.71 | 9540.84 | 100454.11 | 8.9776188 | 8.9795864  |
| 28     | 9526.66 | 9570.19 | 100456.90 | 8.9789408 | 8.9809206  |
| 29     | 9555.62 | 9599.55 | 100459.70 | 8.9802589 | 8.9822507  |
| 30     | 9584.58 | 9628.90 | 100462.51 | 8.9815729 | 8.9835769  |

# 84 Grad.

| Minut. | Sinus    | Tang.      | Secant.    | Log. Sin. | Log. Tang. |
|--------|----------|------------|------------|-----------|------------|
| 60     | 99619.47 | 1143005.23 | 1147371.32 | 9.9983442 | 11.0580482 |
| 59     | 99616.93 | 1139188.49 | 1143569.16 | 9.9983332 | 11.0565956 |
| 58     | 99614.38 | 1135396.96 | 1139792.20 | 9.9983220 | 11.0551477 |
| 57     | 99611.82 | 1131630.40 | 1136040.21 | 9.9983109 | 11.0537046 |
| 56     | 99609.26 | 1127888.55 | 1132312.93 | 9.9982997 | 11.0522662 |
| 55     | 99606.69 | 1124171.17 | 1128910.13 | 9.9982885 | 11.0508324 |
| 54     | 99604.11 | 1120478.03 | 1124931.56 | 9.9982772 | 11.0494033 |
| 53     | 99601.52 | 1116808.88 | 1121276.99 | 9.9982660 | 11.0479789 |
| 52     | 99598.92 | 1113163.50 | 1117646.17 | 9.9982546 | 11.0465590 |
| 51     | 99596.31 | 1109541.64 | 1114038.90 | 9.9982433 | 11.0451436 |
| 50     | 99593.69 | 1105943.10 | 1110454.92 | 9.9982318 | 11.0437328 |
| 49     | 99591.07 | 1102367.63 | 1106894.03 | 9.9982204 | 11.0423265 |
| 48     | 99588.44 | 1098815.01 | 1103355.99 | 9.9982089 | 11.0409246 |
| 47     | 99585.80 | 1095285.04 | 1099840.59 | 9.9981974 | 11.0395272 |
| 46     | 99583.15 | 1091777.49 | 1096347.61 | 9.9981859 | 11.0381341 |
| 45     | 99580.49 | 1088292.14 | 1092876.84 | 9.9981743 | 11.0367455 |
| 44     | 99577.82 | 1084828.80 | 1089428.07 | 9.9981629 | 11.0353612 |
| 43     | 99575.15 | 1081387.24 | 1086001.09 | 9.9981510 | 11.0339812 |
| 42     | 99572.47 | 1077967.27 | 1082595.69 | 9.9981393 | 11.0326056 |
| 41     | 99569.78 | 1074568.68 | 1079211.68 | 9.9981275 | 11.0312342 |
| 40     | 99567.08 | 1071191.26 | 1075848.84 | 9.9981158 | 11.0298670 |
| 39     | 99564.37 | 1067834.84 | 1072506.99 | 9.9981040 | 11.0285041 |
| 38     | 99561.65 | 1064499.19 | 1069185.92 | 9.9980921 | 11.0271453 |
| 37     | 99558.92 | 1061184.14 | 1065885.45 | 9.9980802 | 11.0257908 |
| 36     | 99556.19 | 1057889.50 | 1062605.48 | 9.9980683 | 11.0244403 |
| 35     | 99553.45 | 1054615.07 | 1059345.53 | 9.9980563 | 11.0230940 |
| 34     | 99550.70 | 1051360.67 | 1056105.70 | 9.9980443 | 11.0217517 |
| 33     | 99547.94 | 1048126.11 | 1052885.72 | 9.9980323 | 11.0204135 |
| 32     | 99545.17 | 1044911.22 | 1049685.41 | 9.9980202 | 11.0190794 |
| 31     | 99542.40 | 1041715.81 | 1046504.58 | 9.9980081 | 11.0177493 |
| 30     | 99539.62 | 1038539.71 | 1043343.05 | 9.9979960 | 11.0164231 |

## 5 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 9584.58  | 9628.90  | 100462.51 | 8.9815729 | 8.8935769  |
| 31     | 9613.53  | 9658.26  | 100465.33 | 8.9828829 | 8.9848991  |
| 32     | 9642.48  | 9687.63  | 100468.16 | 8.9841889 | 8.9862173  |
| 33     | 9671.44  | 9716.99  | 100470.99 | 8.9854910 | 8.9875317  |
| 34     | 9700.39  | 9746.35  | 100473.83 | 8.9867891 | 8.9888421  |
| 35     | 9729.34  | 9775.72  | 100476.68 | 8.9889834 | 8.9901487  |
| 36     | 9758.29  | 9805.09  | 100479.54 | 8.9893737 | 8.9914514  |
| 37     | 9787.24  | 9834.46  | 100482.41 | 8.9906602 | 8.9927573  |
| 38     | 9816.19  | 9863.83  | 100485.20 | 8.9919429 | 8.9940454  |
| 39     | 9845.14  | 9893.20  | 100488.18 | 8.9932217 | 8.9953367  |
| 40     | 9874.08  | 9922.57  | 100491.08 | 8.9944968 | 8.9966243  |
| 41     | 9903.03  | 9951.95  | 100493.99 | 8.9957681 | 8.9979081  |
| 42     | 9931.97  | 9981.33  | 100496.90 | 8.9970356 | 8.9991883  |
| 43     | 9960.92  | 10010.71 | 100499.82 | 8.9982994 | 9.0004647  |
| 44     | 9989.86  | 10040.09 | 100502.75 | 8.9995595 | 9.0017375  |
| 45     | 10018.81 | 10069.47 | 100505.69 | 9.0008160 | 9.0030066  |
| 46     | 10047.75 | 10098.85 | 100508.64 | 9.0020687 | 9.0042721  |
| 47     | 10076.69 | 10128.24 | 100511.60 | 9.0033179 | 9.0055340  |
| 48     | 10105.63 | 10157.63 | 100514.57 | 9.0045634 | 9.0067924  |
| 49     | 10134.57 | 10187.02 | 100517.54 | 9.0058053 | 9.0080471  |
| 50     | 10163.51 | 10216.41 | 100520.52 | 9.0070436 | 9.0092984  |
| 51     | 10192.45 | 10245.80 | 100523.51 | 9.0082784 | 9.0105461  |
| 52     | 10221.38 | 10275.20 | 100526.51 | 9.0095096 | 9.0117903  |
| 53     | 10250.32 | 10304.60 | 100529.52 | 9.0107374 | 9.0130310  |
| 54     | 10279.25 | 10334.00 | 100532.54 | 9.0119616 | 9.0142682  |
| 55     | 10308.19 | 10363.40 | 100535.57 | 9.0131823 | 9.0155021  |
| 56     | 10337.12 | 10392.80 | 100538.60 | 9.0143996 | 9.0167325  |
| 57     | 10366.05 | 10422.20 | 100541.64 | 9.0156135 | 9.0179594  |
| 58     | 10394.99 | 10451.60 | 100544.69 | 9.0168239 | 9.0191831  |
| 59     | 10423.92 | 10481.01 | 100547.75 | 9.0180309 | 9.0204033  |
| 60     | 10452.85 | 10510.42 | 100550.82 | 9.0192346 | 9.0216202  |

## 84 Grad.

| Minut. | Sinus.   | Tang.      | Secant.    | Log. Sin. | Log. Tang. |
|--------|----------|------------|------------|-----------|------------|
| 30     | 99539.62 | 1038539.71 | 1043343.05 | 9.9979960 | 11.0164231 |
| 29     | 99536.83 | 1035382.74 | 1040200.66 | 9.9979838 | 11.0151009 |
| 28     | 99534.03 | 1032244.73 | 1037077.23 | 9.9979716 | 11.0137827 |
| 27     | 99531.22 | 1029125.51 | 1033972.59 | 9.9979593 | 11.0124683 |
| 26     | 99528.40 | 1026024.90 | 1030886.56 | 9.9979470 | 11.0111579 |
| 25     | 99525.57 | 1022942.76 | 1027818.99 | 9.9979347 | 11.0098513 |
| 24     | 99522.74 | 1019878.90 | 1024760.71 | 9.9979223 | 11.0085486 |
| 23     | 99519.90 | 1016833.16 | 1021738.55 | 9.9979099 | 11.0072497 |
| 22     | 99517.05 | 1013805.39 | 1018725.36 | 9.9978975 | 11.0059546 |
| 21     | 99514.19 | 1010795.42 | 1015729.98 | 9.9978850 | 11.0046633 |
| 20     | 99511.32 | 1007803.11 | 1012752.24 | 9.9978725 | 11.0033757 |
| 19     | 99508.44 | 1004828.28 | 1009792.00 | 9.9978599 | 11.0020916 |
| 18     | 99505.55 | 1001870.80 | 1006849.09 | 9.9978473 | 11.0008117 |
| 17     | 99502.66 | 998930.50  | 1003923.38 | 9.9978347 | 10.9995353 |
| 16     | 99499.76 | 996007.24  | 1001014.70 | 9.9978220 | 10.9982625 |
| 15     | 99496.85 | 993100.88  | 998122.91  | 9.9978093 | 10.9969934 |
| 14     | 99493.93 | 990211.25  | 995247.87  | 9.9977966 | 10.9957279 |
| 13     | 99491.00 | 987338.23  | 992389.43  | 9.9977838 | 10.9944660 |
| 12     | 99488.06 | 984481.66  | 989547.44  | 9.9977710 | 10.9932076 |
| 11     | 99485.12 | 981641.40  | 986721.76  | 9.9977582 | 10.9919529 |
| 10     | 99482.17 | 978817.32  | 983912.27  | 9.9977453 | 10.9907016 |
| 9      | 99479.21 | 976009.27  | 981118.80  | 9.9977323 | 10.9894539 |
| 8      | 99476.24 | 973217.13  | 978341.24  | 9.9977194 | 10.9882097 |
| 7      | 99473.26 | 970440.75  | 975579.44  | 9.9977064 | 10.9869690 |
| 6      | 99470.27 | 967680.00  | 972833.27  | 9.9976933 | 10.9857318 |
| 5      | 99467.28 | 964934.75  | 970102.60  | 9.9976803 | 10.9844979 |
| 4      | 99464.28 | 962204.86  | 967387.30  | 9.9976672 | 10.9832675 |
| 3      | 99461.27 | 959490.22  | 964687.24  | 9.9976540 | 10.9820406 |
| 2      | 99458.25 | 956790.68  | 962002.29  | 9.9976408 | 10.9808169 |
| 1      | 99455.22 | 954106.13  | 959332.33  | 9.9976276 | 10.9795967 |
| 0      | 99452.18 | 951436.45  | 956677.22  | 9.9976143 | 10.9783798 |

# 6 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 10452.85 | 10510.42 | 100550.82 | 9.0192346 | 9.0216202  |
| 1      | 10481.78 | 10539.83 | 100553.90 | 9.0204348 | 9.0228338  |
| 2      | 10510.70 | 10569.23 | 100556.99 | 9.0216318 | 9.0240441  |
| 3      | 10539.63 | 10598.66 | 100560.09 | 9.0228254 | 9.0252510  |
| 4      | 10568.56 | 10628.08 | 100563.20 | 9.0240157 | 9.0264548  |
| 5      | 10597.48 | 10657.50 | 100566.31 | 9.0252027 | 9.0276552  |
| 6      | 10626.41 | 10686.92 | 100569.43 | 9.0263865 | 9.0288524  |
| 7      | 10655.33 | 10716.34 | 100572.56 | 9.0275669 | 9.0300464  |
| 8      | 10684.25 | 10745.76 | 100575.70 | 9.0287442 | 9.0312373  |
| 9      | 10713.18 | 10775.19 | 100578.85 | 9.0299182 | 9.0324249  |
| 10     | 10742.10 | 10804.62 | 100582.01 | 9.0310890 | 9.0336093  |
| 11     | 10771.02 | 10834.05 | 100585.18 | 9.0322567 | 9.0347906  |
| 12     | 10799.94 | 10863.48 | 100588.35 | 9.0334212 | 9.0359688  |
| 13     | 10828.85 | 10892.91 | 100591.53 | 9.0345825 | 9.0371439  |
| 14     | 10857.77 | 10922.34 | 100594.72 | 9.0357407 | 9.0383159  |
| 15     | 10886.69 | 10951.78 | 100597.92 | 9.0368958 | 9.0394848  |
| 16     | 10915.60 | 10981.22 | 100601.13 | 9.0380477 | 9.0406506  |
| 17     | 10944.52 | 11010.66 | 100604.35 | 9.0391966 | 9.0418134  |
| 18     | 10973.43 | 11040.10 | 100607.58 | 9.0403424 | 9.0429731  |
| 19     | 11002.34 | 11069.54 | 100610.81 | 9.0414852 | 9.0441299  |
| 20     | 11031.26 | 11098.99 | 100614.05 | 9.0426249 | 9.0452836  |
| 21     | 11060.17 | 11128.44 | 100617.30 | 9.0437617 | 9.0464343  |
| 22     | 11089.08 | 11157.89 | 100620.56 | 9.0448954 | 9.0475821  |
| 23     | 11117.99 | 11187.34 | 100623.83 | 9.0460261 | 9.0487270  |
| 24     | 11146.89 | 11216.79 | 100627.11 | 9.0471538 | 9.0498689  |
| 25     | 11175.80 | 11246.25 | 100630.40 | 9.0482786 | 9.0510078  |
| 26     | 11204.71 | 11275.71 | 100633.70 | 9.0494005 | 9.0521439  |
| 27     | 11233.61 | 11305.17 | 100637.01 | 9.0505194 | 9.0532771  |
| 28     | 11262.52 | 11334.63 | 100640.32 | 9.0516354 | 9.0544074  |
| 29     | 11291.42 | 11364.09 | 100643.64 | 9.0527485 | 9.0555349  |
| 30     | 11320.32 | 11393.56 | 100646.97 | 9.0538588 | 9.0566595  |

# 83 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 99452.18 | 951436.45 | 956677.22 | 9.9976143 | 10.9783798 |
| 59     | 99449.14 | 948781.49 | 954036.86 | 9.9976011 | 10.9771662 |
| 58     | 99446.09 | 946141.16 | 951411.10 | 9.9975877 | 10.9759559 |
| 57     | 99443.03 | 943515.31 | 948799.84 | 9.9975743 | 10.9747490 |
| 56     | 99439.96 | 940903.84 | 946202.96 | 9.9975609 | 10.9735452 |
| 55     | 99436.88 | 938306.63 | 943620.33 | 9.9975475 | 10.9723448 |
| 54     | 99433.79 | 935723.55 | 941051.84 | 9.9975340 | 10.9711476 |
| 53     | 99430.69 | 933154.50 | 938497.38 | 9.9975205 | 10.9699536 |
| 52     | 99427.59 | 930599.36 | 935956.82 | 9.9975069 | 10.9687627 |
| 51     | 99424.48 | 928058.02 | 933430.06 | 9.9974933 | 10.9675751 |
| 50     | 99421.36 | 925530.35 | 930916.99 | 9.9974797 | 10.9663907 |
| 49     | 99418.23 | 923016.27 | 928417.49 | 9.9974660 | 10.9652094 |
| 48     | 99415.09 | 920515.64 | 925931.45 | 9.9974523 | 10.9640312 |
| 47     | 99411.94 | 918028.38 | 923498.77 | 9.9974386 | 10.9628561 |
| 46     | 99408.79 | 915554.36 | 920999.34 | 9.9974248 | 10.9616841 |
| 45     | 99405.63 | 913093.48 | 918553.05 | 9.9974110 | 10.9605152 |
| 44     | 99402.46 | 910645.64 | 916119.80 | 9.9973971 | 10.9593494 |
| 43     | 99399.28 | 908210.74 | 913699.49 | 9.9973833 | 10.9581866 |
| 42     | 99396.09 | 905788.67 | 911292.00 | 9.9973693 | 10.9570269 |
| 41     | 99392.89 | 903379.33 | 908897.25 | 9.9973554 | 10.9558701 |
| 40     | 99389.69 | 900982.61 | 906515.12 | 9.9973414 | 10.9547164 |
| 39     | 99386.48 | 898598.43 | 904145.53 | 9.9973273 | 10.9535657 |
| 38     | 99383.26 | 896226.68 | 901788.37 | 9.9973132 | 10.9524179 |
| 37     | 99380.03 | 893867.26 | 899443.54 | 9.9972991 | 10.9512730 |
| 36     | 99376.79 | 891520.08 | 897110.95 | 9.9972850 | 10.9501311 |
| 35     | 99373.54 | 889185.05 | 894790.51 | 9.9972708 | 10.9489922 |
| 34     | 99370.28 | 886862.06 | 892482.11 | 9.9972566 | 10.9478561 |
| 33     | 99367.02 | 884551.03 | 890185.67 | 9.9972423 | 10.9467229 |
| 32     | 99363.75 | 882251.86 | 887901.09 | 9.9972280 | 10.9455926 |
| 31     | 99360.47 | 879964.46 | 885628.28 | 9.9972137 | 10.9444651 |
| 30     | 99357.18 | 877688.74 | 883367.15 | 9.9971993 | 10.9433405 |



# 6 Grad.

| Minur. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 11320.32 | 11393.56 | 100646.97 | 9.0538588 | 9.0566595  |
| 31     | 11349.22 | 11423.03 | 100650.31 | 9.0549661 | 9.0577813  |
| 32     | 11378.12 | 11452.50 | 100653.66 | 9.0560706 | 9.0589002  |
| 33     | 11407.02 | 11481.97 | 100657.02 | 9.0571723 | 9.0600164  |
| 34     | 11435.92 | 11511.44 | 100668.39 | 9.0582711 | 9.0611297  |
| 35     | 11464.82 | 11540.91 | 100663.77 | 9.0593671 | 9.0622403  |
| 36     | 11493.71 | 11570.39 | 100667.15 | 9.0604604 | 9.0633482  |
| 37     | 11522.61 | 11599.87 | 100670.54 | 9.0615509 | 9.0644533  |
| 38     | 11551.51 | 11629.35 | 100673.94 | 9.0626386 | 9.0655556  |
| 39     | 11580.40 | 11658.83 | 100677.35 | 9.0637235 | 9.0666553  |
| 40     | 11609.29 | 11688.31 | 100680.77 | 9.0648057 | 9.0677522  |
| 41     | 11638.18 | 11717.80 | 100684.20 | 9.0658852 | 9.0688465  |
| 42     | 11667.07 | 11747.29 | 100687.64 | 9.0669619 | 9.0699381  |
| 43     | 11695.96 | 11776.78 | 100691.08 | 9.0680360 | 9.0710270  |
| 44     | 11724.85 | 11806.28 | 100694.53 | 9.0691074 | 9.0721133  |
| 45     | 11753.74 | 11835.78 | 100697.99 | 9.0701761 | 9.0731969  |
| 46     | 11782.63 | 11865.28 | 100701.46 | 9.0712421 | 9.0742779  |
| 47     | 11811.51 | 11894.78 | 100704.94 | 9.0723055 | 9.0753563  |
| 48     | 11840.40 | 11924.28 | 100708.43 | 9.0733663 | 9.0764321  |
| 49     | 11869.28 | 11953.78 | 100711.93 | 9.0744244 | 9.0775053  |
| 50     | 11898.16 | 11983.28 | 100715.44 | 9.0754799 | 9.0785760  |
| 51     | 11927.04 | 12012.79 | 100718.96 | 9.0765329 | 9.0796441  |
| 52     | 11955.93 | 12042.30 | 100722.48 | 9.0775832 | 9.0807096  |
| 53     | 11984.81 | 12071.81 | 100726.01 | 9.0786310 | 9.0817726  |
| 54     | 12013.68 | 12101.32 | 100729.55 | 9.0796762 | 9.0828331  |
| 55     | 12042.56 | 12130.84 | 100733.10 | 9.0807189 | 9.0838911  |
| 56     | 12071.44 | 12160.36 | 100736.66 | 9.0817590 | 9.0849466  |
| 57     | 12100.31 | 12189.88 | 100740.23 | 9.0827966 | 9.0859996  |
| 58     | 12129.19 | 12219.40 | 100743.81 | 9.0838317 | 9.0870501  |
| 59     | 12158.06 | 12248.93 | 100747.40 | 9.0848643 | 9.0880981  |
| 60     | 12186.93 | 12278.46 | 100750.99 | 9.0858945 | 9.0891438  |

# 83 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 99357.18 | 877688.74 | 883367.15 | 9.9971993 | 10.9433405 |
| 29     | 99353.88 | 875424.61 | 881117.61 | 9.9971849 | 10.9422187 |
| 28     | 99350.58 | 873171.98 | 878879.57 | 9.9971704 | 10.9410998 |
| 27     | 99347.27 | 870930.77 | 876652.95 | 9.9971559 | 10.9399836 |
| 26     | 99343.95 | 868700.88 | 874437.66 | 9.9971414 | 10.9388703 |
| 25     | 99340.62 | 866482.23 | 872233.61 | 9.9971268 | 10.9377597 |
| 24     | 99337.28 | 864274.75 | 870040.71 | 9.9971122 | 10.9366518 |
| 23     | 99333.93 | 862078.33 | 867858.89 | 9.9970976 | 10.9355467 |
| 22     | 99330.57 | 859892.90 | 865688.05 | 9.9970829 | 10.9344444 |
| 21     | 99327.20 | 857718.38 | 863528.12 | 9.9970682 | 10.9333447 |
| 20     | 99323.83 | 855554.68 | 861379.01 | 9.9970535 | 10.9322478 |
| 19     | 99320.45 | 853401.72 | 859240.65 | 9.9970387 | 10.9311535 |
| 18     | 99317.06 | 851259.43 | 857112.95 | 9.9970239 | 10.9300619 |
| 17     | 99313.66 | 849127.72 | 854995.84 | 9.9970090 | 10.9289730 |
| 16     | 99310.25 | 847006.51 | 852889.23 | 9.9969941 | 10.9278867 |
| 15     | 99306.84 | 844895.73 | 850793.04 | 9.9969792 | 10.9268031 |
| 14     | 99303.42 | 842795.31 | 848707.21 | 9.9969642 | 10.9257221 |
| 13     | 99299.99 | 840705.15 | 846631.65 | 9.9969492 | 10.9246437 |
| 12     | 99296.55 | 838625.19 | 844566.29 | 9.9969342 | 10.9235679 |
| 11     | 99293.10 | 836555.36 | 842511.05 | 9.9969191 | 10.9224947 |
| 10     | 99289.64 | 834495.57 | 840465.86 | 9.9969040 | 10.9214240 |
| 9      | 99286.17 | 832445.77 | 838430.65 | 9.9968888 | 10.9203559 |
| 8      | 99282.70 | 830405.86 | 836405.34 | 9.9968736 | 10.9192904 |
| 7      | 99279.22 | 828375.79 | 834389.86 | 9.9968584 | 10.9182274 |
| 6      | 99275.73 | 826355.47 | 832384.15 | 9.9968431 | 10.9171669 |
| 5      | 99272.23 | 824344.85 | 830388.12 | 9.9968278 | 10.9161089 |
| 4      | 99268.72 | 822343.84 | 828401.71 | 9.9968125 | 10.9150534 |
| 3      | 99265.21 | 820352.39 | 826424.85 | 9.9967971 | 10.9140004 |
| 2      | 99261.69 | 818370.41 | 824457.48 | 9.9967817 | 10.9129499 |
| 1      | 99258.16 | 816397.86 | 822499.52 | 9.9967662 | 10.9119019 |
| 0      | 99254.62 | 814434.64 | 820550.90 | 9.9967507 | 10.9108562 |

# 7 Grad.

Minur.

|    | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|----|----------|----------|-----------|-----------|------------|
| 0  | 12186.93 | 12278.46 | 100750.99 | 9.0858945 | 9.0891438  |
| 1  | 12215.81 | 12307.99 | 100754.59 | 9.0869221 | 9.0901869  |
| 2  | 12244.68 | 12337.52 | 100758.20 | 9.0879473 | 9.0912277  |
| 3  | 12273.55 | 12367.05 | 100761.82 | 9.0889700 | 9.0922660  |
| 4  | 12302.41 | 12396.58 | 100765.45 | 9.0899903 | 9.0933020  |
| 5  | 12331.28 | 12426.12 | 100769.09 | 9.0910082 | 9.0943355  |
| 6  | 12360.15 | 12455.66 | 100772.74 | 9.0920237 | 9.0953669  |
| 7  | 12389.01 | 12485.20 | 100776.39 | 9.0930367 | 9.0963955  |
| 8  | 12417.88 | 12514.74 | 100780.05 | 9.0940474 | 9.0974219  |
| 9  | 12446.74 | 12544.29 | 100783.72 | 9.0950556 | 9.0984460  |
| 10 | 12475.60 | 12573.84 | 100787.40 | 9.0960615 | 9.0994678  |
| 11 | 12504.46 | 12603.39 | 100791.09 | 9.0970651 | 9.1004872  |
| 12 | 12533.32 | 12632.94 | 100794.79 | 9.0980662 | 9.1015044  |
| 13 | 12562.18 | 12662.49 | 100798.50 | 9.0990651 | 9.1025192  |
| 14 | 12591.04 | 12692.05 | 100802.22 | 9.1000616 | 9.1035317  |
| 15 | 12619.90 | 12721.61 | 100805.95 | 9.1010558 | 9.1045420  |
| 16 | 12648.75 | 12751.17 | 100809.69 | 9.1020477 | 9.1055500  |
| 17 | 12677.61 | 12780.73 | 100813.43 | 9.1030373 | 9.1065557  |
| 18 | 12706.46 | 12810.29 | 100817.18 | 9.1040246 | 9.1075591  |
| 19 | 12735.31 | 12839.86 | 100820.94 | 9.1050096 | 9.1085604  |
| 20 | 12764.16 | 12869.43 | 100824.71 | 9.1059924 | 9.1095594  |
| 21 | 12793.01 | 12899.00 | 100828.49 | 9.1069729 | 9.1105562  |
| 22 | 12821.86 | 12928.57 | 100832.28 | 9.1079512 | 9.1115508  |
| 23 | 12850.71 | 12958.15 | 100836.07 | 9.1089272 | 9.1125431  |
| 24 | 12879.56 | 12987.73 | 100839.88 | 9.1099010 | 9.1135333  |
| 25 | 12908.41 | 13017.31 | 100843.70 | 9.1108726 | 9.1145213  |
| 26 | 12937.25 | 13046.89 | 100847.52 | 9.1118420 | 9.1155072  |
| 27 | 12966.09 | 13076.48 | 100851.35 | 9.1128092 | 9.1164909  |
| 28 | 12994.94 | 13106.07 | 100855.19 | 9.1137742 | 9.1174724  |
| 29 | 13023.78 | 13135.66 | 100859.04 | 9.1147370 | 9.1184518  |
| 30 | 13052.62 | 13165.25 | 100862.90 | 9.1156977 | 9.1194291  |

## 82 Grad.

Minut.

|    | Sinus    | Tang.     | Secant.   |  | Log. Sin. | Log. Tang. |
|----|----------|-----------|-----------|--|-----------|------------|
| 60 | 99254.62 | 814434.64 | 820550.90 |  | 9.9967507 | 10.9108562 |
| 59 | 99251.07 | 812480.71 | 818611.57 |  | 9.9967352 | 10.9098131 |
| 58 | 99247.51 | 810535.99 | 816081.45 |  | 9.9967196 | 10.9087723 |
| 57 | 99243.94 | 808600.42 | 814760.48 |  | 9.9967040 | 10.9077340 |
| 56 | 99240.36 | 806673.94 | 812848.60 |  | 9.9966884 | 10.9066980 |
| 55 | 99236.78 | 804756.47 | 810945.73 |  | 9.9966727 | 10.9056645 |
| 54 | 99233.19 | 802847.96 | 809051.82 |  | 9.9966570 | 10.9046333 |
| 53 | 99229.59 | 800948.35 | 807166.81 |  | 9.9966412 | 10.9036045 |
| 52 | 99225.98 | 799057.56 | 805290.62 |  | 9.9966254 | 10.9025781 |
| 51 | 99222.36 | 797175.55 | 803423.21 |  | 9.9966096 | 10.9015540 |
| 50 | 99218.74 | 795302.24 | 801564.50 |  | 9.9965937 | 10.9005322 |
| 49 | 99215.11 | 793437.58 | 799714.45 |  | 9.9965778 | 10.8995128 |
| 48 | 99211.47 | 791581.51 | 797872.98 |  | 9.9965619 | 10.8984956 |
| 47 | 99207.82 | 789733.96 | 796040.03 |  | 9.9965459 | 10.8974808 |
| 46 | 99204.16 | 787894.89 | 794215.56 |  | 9.9965299 | 10.8964683 |
| 45 | 99200.49 | 786064.23 | 792399.50 |  | 9.9965138 | 10.8954580 |
| 44 | 99196.81 | 784241.91 | 790591.79 |  | 9.9964977 | 10.8944500 |
| 43 | 99193.13 | 782427.90 | 788792.38 |  | 9.9964816 | 10.8934443 |
| 42 | 99189.44 | 780622.12 | 787001.20 |  | 9.9964655 | 10.8924406 |
| 41 | 99185.74 | 778824.53 | 785218.21 |  | 9.9964493 | 10.8914366 |
| 40 | 99182.03 | 777035.06 | 783443.35 |  | 9.9964330 | 10.8904340 |
| 39 | 99178.31 | 775253.66 | 781676.56 |  | 9.9964167 | 10.8894438 |
| 38 | 99174.59 | 773480.28 | 779917.78 |  | 9.9964004 | 10.8884492 |
| 37 | 99170.86 | 771714.86 | 778166.97 |  | 9.9963841 | 10.8874569 |
| 36 | 99167.12 | 769957.35 | 776424.06 |  | 9.9963677 | 10.8864667 |
| 35 | 99163.37 | 768207.69 | 774689.01 |  | 9.9963513 | 10.8854787 |
| 34 | 99159.61 | 766465.84 | 772961.76 |  | 9.9963348 | 10.8844928 |
| 33 | 99155.84 | 764731.74 | 771242.27 |  | 9.9963183 | 10.8835091 |
| 32 | 99152.06 | 763005.33 | 769530.47 |  | 9.9963018 | 10.8825276 |
| 31 | 99148.28 | 761286.57 | 767826.31 |  | 9.9962852 | 10.8815482 |
| 30 | 99144.49 | 759575.41 | 766129.76 |  | 9.9962686 | 10.8805809 |

## 7 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | I3052.62 | I3165.25 | I00862.90 | 9.1156977 | 9.1194291  |
| 31     | I3081.46 | I3194.84 | I00866.77 | 9.1166562 | 9.1204043  |
| 32     | I3110.30 | I3224.44 | I00870.65 | 9.1176125 | 9.1213773  |
| 33     | I3139.13 | I3254.04 | I00874.53 | 9.1185667 | 9.1223482  |
| 34     | I3167.97 | I3283.64 | I00878.42 | 9.1195188 | 9.1233171  |
| 35     | I3196.81 | I3313.24 | I00882.32 | 9.1204688 | 9.1242839  |
| 36     | I3225.64 | I3342.85 | I00886.23 | 9.1214167 | 9.1252486  |
| 37     | I3254.47 | I3372.46 | I00890.15 | 9.1223624 | 9.1262112  |
| 38     | I3283.30 | I3402.07 | I00894.08 | 9.1233061 | 9.1271718  |
| 39     | I3312.13 | I3431.68 | I00898.02 | 9.1242477 | 9.1281303  |
| 40     | I3340.96 | I3461.29 | I00901.97 | 9.1251872 | 9.1290868  |
| 41     | I3369.79 | I3490.91 | I00905.92 | 9.1261246 | 9.1300413  |
| 42     | I3398.62 | I3520.53 | I00909.88 | 9.1270600 | 9.1309937  |
| 43     | I3427.44 | I3550.15 | I00913.85 | 6.1279934 | 9.1319442  |
| 44     | I3456.27 | I3579.77 | I00917.83 | 9.1289247 | 9.1328926  |
| 45     | I3485.09 | I3609.40 | I00921.82 | 9.1298539 | 9.1338391  |
| 46     | I3513.92 | I3639.03 | I00925.82 | 9.1307812 | 9.1347835  |
| 47     | I3542.74 | I3668.66 | I00929.83 | 9.1317064 | 9.1357260  |
| 48     | I3571.56 | I3698.29 | I00933.85 | 9.1326297 | 9.1366665  |
| 49     | I3600.38 | I3727.93 | I00937.88 | 9.1335509 | 9.1376051  |
| 50     | I3629.19 | I3757.57 | I00941.92 | 9.1344702 | 9.1385417  |
| 51     | I3658.01 | I3787.21 | I00945.96 | 9.1353875 | 9.1394764  |
| 52     | I3686.83 | I3816.85 | I00950.01 | 9.1363028 | 9.1404092  |
| 53     | I3715.64 | I3846.50 | I00954.07 | 9.1372161 | 9.1413400  |
| 54     | I3744.45 | I3876.15 | I00958.14 | 9.1381275 | 9.1422689  |
| 55     | I3773.27 | I3905.80 | I00962.22 | 9.1390370 | 9.1431959  |
| 56     | I3802.08 | I3935.45 | I00966.31 | 9.1399445 | 9.1441210  |
| 57     | I3830.89 | I3965.10 | I00970.41 | 9.1408501 | 9.1450442  |
| 58     | I3859.70 | I3994.76 | I00974.52 | 9.1417537 | 9.1459655  |
| 59     | I3888.50 | I4024.42 | I00978.64 | 9.1426555 | 9.1468850  |
| 60     | I3917.31 | I4054.08 | I00982.76 | 9.1435553 | 9.1478025  |

# 82 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 99144.49 | 759575.41 | 766129.76 | 9.9962686 | 10.8805709 |
| 29     | 99140.69 | 757871.79 | 764440.75 | 9.9962519 | 10.8795957 |
| 28     | 99136.88 | 756175.67 | 762759.23 | 9.9962352 | 10.8786227 |
| 27     | 99133.06 | 754486.99 | 761085.16 | 9.9962185 | 10.8776518 |
| 26     | 99129.23 | 752805.71 | 759418.49 | 9.9962017 | 10.8766829 |
| 25     | 99125.39 | 751131.78 | 757759.16 | 9.9961849 | 10.8757161 |
| 24     | 99121.55 | 749465.14 | 756107.13 | 9.9961681 | 10.8747514 |
| 23     | 99117.70 | 747805.76 | 754462.36 | 9.9961512 | 10.8737888 |
| 22     | 99113.84 | 746153.57 | 752824.78 | 9.9961343 | 10.8728282 |
| 21     | 99109.97 | 744508.55 | 751194.37 | 9.9961174 | 10.8718697 |
| 20     | 99106.09 | 742870.64 | 779571.06 | 9.9961004 | 10.8709132 |
| 19     | 99102.21 | 741239.78 | 747954.82 | 9.9960834 | 10.8699587 |
| 18     | 99098.32 | 739615.95 | 746345.60 | 9.9960663 | 10.8690063 |
| 17     | 99094.42 | 737999.09 | 744743.35 | 9.9960492 | 10.8680558 |
| 16     | 99090.51 | 736389.16 | 743148.03 | 9.9960321 | 10.8671074 |
| 15     | 99086.59 | 734786.10 | 741559.59 | 9.9960149 | 10.8661609 |
| 14     | 99082.66 | 733189.89 | 739977.98 | 9.9959977 | 10.8652165 |
| 13     | 99078.72 | 731600.47 | 738403.18 | 9.9959804 | 10.8642740 |
| 12     | 99074.78 | 730017.80 | 736835.12 | 9.9959631 | 10.8633335 |
| 11     | 99070.83 | 728441.84 | 735273.77 | 9.9959458 | 10.8623949 |
| 10     | 99066.87 | 726872.55 | 733719.09 | 9.9959284 | 10.8614583 |
| 9      | 99062.90 | 725309.87 | 732171.02 | 9.9959111 | 10.8605236 |
| 8      | 99058.92 | 723753.78 | 730629.54 | 9.9958936 | 10.8595908 |
| 7      | 99054.93 | 722204.22 | 729094.60 | 9.9958761 | 10.8586600 |
| 6      | 99050.94 | 720661.16 | 727566.16 | 9.9958586 | 10.8577311 |
| 5      | 99046.94 | 719124.56 | 726044.17 | 9.9958411 | 10.8568041 |
| 4      | 99042.93 | 717594.37 | 724528.59 | 9.9958235 | 10.8558790 |
| 3      | 99038.91 | 716070.56 | 723019.40 | 9.9958059 | 10.8549558 |
| 2      | 99034.88 | 714553.08 | 721516.53 | 9.9957882 | 10.8540345 |
| 1      | 99030.84 | 713041.90 | 720019.96 | 9.9957705 | 10.8531150 |
| 0      | 99026.80 | 711536.97 | 718529.65 | 9.9957528 | 10.8521975 |

## 8 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 13917.31 | 14054.08 | 100982.76 | 9.1435553 | 9.1478025  |
| 1      | 13946.12 | 14083.74 | 100986.89 | 9.1444532 | 9.1487182  |
| 2      | 13974.92 | 14113.41 | 100991.03 | 9.1453493 | 9.1496321  |
| 3      | 14003.72 | 14143.08 | 100995.18 | 9.1462435 | 9.1505441  |
| 4      | 14032.52 | 14172.75 | 100999.34 | 9.1471358 | 9.1514543  |
| 5      | 14061.32 | 14202.43 | 101003.51 | 9.1480262 | 9.1523627  |
| 6      | 14090.12 | 14232.11 | 101007.69 | 9.1489148 | 9.1532692  |
| 7      | 14118.92 | 14261.79 | 101011.88 | 9.1498015 | 9.1541739  |
| 8      | 14147.72 | 14291.47 | 101016.07 | 9.1506864 | 9.1550769  |
| 9      | 14176.51 | 14321.15 | 101020.27 | 9.1515694 | 9.1559780  |
| 10     | 14205.31 | 14350.84 | 101024.48 | 9.1524507 | 9.1568773  |
| 11     | 14234.10 | 14380.53 | 101028.70 | 9.1533301 | 9.1577748  |
| 12     | 14262.89 | 14410.22 | 101032.93 | 9.1542076 | 9.1586706  |
| 13     | 14291.68 | 14439.91 | 101037.17 | 9.1550834 | 9.1595646  |
| 14     | 14320.47 | 14469.61 | 101041.42 | 9.1559574 | 9.1604569  |
| 15     | 14349.26 | 14499.31 | 101045.68 | 9.1568296 | 9.1613473  |
| 16     | 14378.05 | 14529.01 | 101049.95 | 9.1577000 | 9.1622361  |
| 17     | 14406.84 | 14558.71 | 101054.23 | 9.1585686 | 9.1631231  |
| 18     | 14435.62 | 14588.42 | 101058.51 | 9.1594354 | 9.1640083  |
| 19     | 14464.40 | 14618.13 | 101062.80 | 9.1603005 | 9.1648919  |
| 20     | 14493.19 | 14647.84 | 101067.10 | 9.1611639 | 9.1657737  |
| 21     | 14521.97 | 14677.55 | 101071.41 | 9.1620254 | 9.1666538  |
| 22     | 14550.75 | 14707.27 | 101075.73 | 9.1628853 | 9.1675322  |
| 23     | 14579.53 | 14736.99 | 101080.06 | 9.1637434 | 9.1684089  |
| 24     | 14608.30 | 14766.71 | 101084.40 | 9.1645998 | 9.1692839  |
| 25     | 14637.08 | 14796.44 | 101088.75 | 9.1654544 | 9.1701572  |
| 26     | 14665.85 | 14826.17 | 101093.11 | 9.1663074 | 9.1710289  |
| 27     | 14694.63 | 14855.90 | 101097.47 | 9.1671586 | 9.1718989  |
| 28     | 14723.40 | 14885.63 | 101101.84 | 9.1680081 | 9.1727672  |
| 29     | 14752.17 | 14915.36 | 101106.22 | 9.1688559 | 9.1736338  |
| 30     | 14780.94 | 14945.10 | 101110.61 | 9.1697021 | 9.1744988  |

## 81 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 99026.80 | 711536.97 | 718529.65 | 9.9957528 | 10.8521975 |
| 59     | 99022.75 | 710038.26 | 717045.56 | 9.9957350 | 10.8512818 |
| 58     | 99018.69 | 708545.73 | 715567.64 | 9.9957172 | 10.8503679 |
| 57     | 99014.62 | 707059.34 | 714095.87 | 9.9956993 | 10.8494559 |
| 56     | 99010.54 | 705579.05 | 712630.19 | 9.9956815 | 10.8485457 |
| 55     | 99006.45 | 704104.82 | 711170.58 | 9.9956635 | 10.8476373 |
| 54     | 99002.36 | 702636.62 | 709717.00 | 9.9956456 | 10.8467308 |
| 53     | 98998.26 | 701174.41 | 708279.41 | 9.9956276 | 10.8458261 |
| 52     | 98994.15 | 699718.06 | 706827.77 | 9.9956095 | 10.8449231 |
| 51     | 98990.03 | 698267.81 | 705392.05 | 9.9955915 | 10.8440220 |
| 50     | 98985.90 | 696823.35 | 703962.20 | 9.9955734 | 10.8431227 |
| 49     | 98981.76 | 695384.73 | 702538.20 | 9.9955552 | 10.8422252 |
| 48     | 98977.62 | 693951.92 | 701120.01 | 9.9955370 | 10.8413294 |
| 47     | 98973.47 | 692524.89 | 699707.60 | 9.9955188 | 10.8404354 |
| 46     | 98969.31 | 691103.59 | 698300.92 | 9.9955005 | 10.8395431 |
| 45     | 98965.14 | 689687.99 | 696899.94 | 9.9954822 | 10.8386527 |
| 44     | 98960.96 | 688278.07 | 695504.64 | 9.9954639 | 10.8377639 |
| 43     | 98956.77 | 686873.78 | 694114.96 | 9.9954455 | 10.8368769 |
| 42     | 98952.57 | 685475.08 | 692730.89 | 9.9954271 | 10.8359917 |
| 41     | 98948.37 | 684081.96 | 691352.39 | 9.9954087 | 10.8351081 |
| 40     | 98944.16 | 682694.37 | 689979.42 | 9.9953902 | 10.8342263 |
| 39     | 98939.94 | 681312.27 | 688611.95 | 9.9953717 | 10.8333462 |
| 38     | 98935.71 | 679935.68 | 687249.95 | 9.9953531 | 10.8324678 |
| 37     | 98931.47 | 678564.46 | 685893.38 | 9.9953345 | 10.8315911 |
| 36     | 98927.23 | 677198.67 | 684542.22 | 9.9953159 | 10.8307161 |
| 35     | 98922.98 | 675838.26 | 683196.42 | 9.9952972 | 10.8298428 |
| 34     | 98918.72 | 674483.18 | 681855.97 | 9.9952785 | 10.8289711 |
| 33     | 98914.45 | 673133.41 | 680520.82 | 9.9952597 | 10.8281011 |
| 32     | 98910.17 | 671788.91 | 679190.95 | 9.9952409 | 10.8272328 |
| 31     | 98905.88 | 670449.66 | 677866.32 | 9.9952221 | 10.8263662 |
| 30     | 98901.58 | 669115.62 | 676546.91 | 9.9952033 | 10.8255012 |



## 8 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | I4780.94 | I4945.10 | IOIIO.6I  | 9.1697021 | 9.1744988  |
| 31     | I4809.71 | I4974.84 | IOI115.01 | 9.1705465 | 9.1753622  |
| 32     | I4838.48 | I5004.58 | IOI119.42 | 9.1713893 | 9.1762239  |
| 33     | I4867.24 | I5034.33 | IOI123.84 | 9.1722305 | 9.1770840  |
| 34     | I4896.01 | I5064.08 | IOI128.27 | 9.1730699 | 9.1779425  |
| 35     | I4924.77 | I5093.83 | IOI132.71 | 9.1739077 | 9.1787993  |
| 36     | I4953.53 | I5123.58 | IOI137.15 | 9.1747439 | 9.1796566  |
| 37     | I4982.30 | I5153.33 | IOI141.60 | 9.1755784 | 9.1805082  |
| 38     | I5011.06 | I5183.09 | IOI146.06 | 9.1764112 | 9.1813602  |
| 39     | I5039.81 | I5212.85 | IOI150.53 | 9.1772425 | 9.1822106  |
| 40     | I5068.57 | I5242.61 | IOI155.01 | 9.1780721 | 9.1830595  |
| 41     | I5097.33 | I5272.38 | IOI159.50 | 9.1789001 | 9.1839068  |
| 42     | I5126.08 | I5302.15 | IOI164.00 | 9.1797265 | 9.1847525  |
| 43     | I5154.84 | I5331.92 | IOI168.51 | 9.1805512 | 9.1855966  |
| 44     | I5183.59 | I5361.89 | IOI173.03 | 9.1813744 | 9.1864392  |
| 45     | I5212.34 | I5391.47 | IOI177.56 | 9.1821960 | 9.1872802  |
| 46     | I5241.09 | I5421.25 | IOI182.09 | 9.1830160 | 9.1881196  |
| 47     | I5269.84 | I5451.03 | IOI186.63 | 9.1838344 | 9.1889575  |
| 48     | I5298.58 | I5480.82 | IOI191.18 | 9.1846512 | 9.1897939  |
| 49     | I5327.33 | I5510.61 | IOI195.74 | 9.1854665 | 9.1906287  |
| 50     | I5356.07 | I5540.40 | IOI200.31 | 9.1862802 | 9.1914621  |
| 51     | I5384.82 | I5570.19 | IOI204.89 | 9.1870923 | 9.1922939  |
| 52     | I5413.56 | I5599.98 | IOI209.48 | 9.1879029 | 9.1931241  |
| 53     | I5442.30 | I5629.78 | IOI214.08 | 9.1887120 | 9.1939529  |
| 54     | I5471.04 | I5659.58 | IOI218.69 | 9.1895195 | 9.1947802  |
| 55     | I5499.78 | I5689.38 | IOI223.31 | 9.1903254 | 9.1956059  |
| 56     | I5528.51 | I5719.19 | IOI227.93 | 9.1911299 | 9.1964302  |
| 57     | I5557.25 | I5749.00 | IOI232.56 | 9.1919328 | 9.1972530  |
| 58     | I5585.98 | I5778.81 | IOI237.20 | 9.1927342 | 9.1980743  |
| 59     | I5614.72 | I5808.62 | IOI241.85 | 9.1935341 | 9.1988941  |
| 60     | I5643.45 | I5838.44 | IOI246.51 | 9.1943324 | 9.1997125  |

# 81 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 98901.58 | 669115.62 | 676546.91 | 9.9952033 | 10.8255012 |
| 29     | 98897.28 | 667786.77 | 675232.68 | 9.9951844 | 10.8246378 |
| 28     | 98892.97 | 666463.07 | 673923.60 | 9.9951654 | 10.8237761 |
| 27     | 98888.65 | 665144.49 | 672619.65 | 9.9951464 | 10.8229260 |
| 26     | 98884.32 | 663831.00 | 671320.79 | 9.9951274 | 10.8220575 |
| 25     | 98879.98 | 662522.58 | 670026.99 | 9.9951084 | 10.8212007 |
| 24     | 98875.63 | 661219.19 | 668738.22 | 9.9950893 | 10.8203454 |
| 23     | 98871.28 | 659920.80 | 667454.46 | 9.9950702 | 10.8194918 |
| 22     | 98866.92 | 658627.39 | 666175.68 | 9.9950510 | 10.8186398 |
| 21     | 98862.55 | 657338.92 | 664901.84 | 9.9950318 | 10.8177894 |
| 20     | 98858.17 | 656055.38 | 663632.93 | 9.9950126 | 10.8169405 |
| 19     | 98853.78 | 654776.72 | 662368.90 | 9.9949933 | 10.8160932 |
| 18     | 98849.38 | 653502.93 | 661109.73 | 9.9949740 | 10.8152475 |
| 17     | 98844.98 | 652233.96 | 659855.40 | 9.9949546 | 10.8144034 |
| 16     | 98840.57 | 650969.81 | 658605.87 | 9.9949352 | 10.8135608 |
| 15     | 98836.15 | 649710.43 | 657361.12 | 9.9949158 | 10.8127198 |
| 14     | 98831.72 | 648455.81 | 656121.13 | 9.9948964 | 10.8118804 |
| 13     | 98827.28 | 647205.91 | 654885.86 | 9.9948769 | 10.8110425 |
| 12     | 98822.83 | 645960.70 | 653655.28 | 9.9948573 | 10.8102061 |
| 11     | 98818.38 | 644720.17 | 652429.38 | 9.9948377 | 10.8093713 |
| 10     | 98813.92 | 643484.28 | 651208.12 | 9.9948181 | 10.8085379 |
| 9      | 98809.45 | 642253.01 | 649991.48 | 9.9947985 | 10.8077061 |
| 8      | 98804.97 | 641026.33 | 648779.44 | 9.9947788 | 10.8068759 |
| 7      | 98800.48 | 639804.22 | 647571.95 | 9.9947591 | 10.8060471 |
| 6      | 98795.98 | 638586.65 | 646369.01 | 9.9947393 | 10.8052198 |
| 5      | 98791.48 | 637373.59 | 645170.59 | 9.9947195 | 10.8043941 |
| 4      | 98786.97 | 636165.02 | 643976.66 | 9.9946997 | 10.8035698 |
| 3      | 98782.45 | 634960.92 | 642787.19 | 9.9946798 | 10.8027470 |
| 2      | 98777.92 | 633761.26 | 641602.16 | 9.9946599 | 10.8019257 |
| 1      | 98773.38 | 632566.01 | 640421.54 | 9.9946399 | 10.8011059 |
| 0      | 98768.83 | 631375.15 | 639245.32 | 9.9946199 | 10.8002875 |

## 9 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 15643.45 | 15838.44 | 101246.51 | 9.1943324 | 9.1997125  |
| 1      | 15672.18 | 15868.26 | 101251.18 | 9.1951293 | 9.2005294  |
| 2      | 15700.91 | 15898.08 | 101255.86 | 9.1959247 | 9.2013449  |
| 3      | 15729.63 | 15927.91 | 101260.55 | 9.1967186 | 9.2021588  |
| 4      | 15758.36 | 15957.74 | 101265.25 | 9.1975110 | 9.2029714  |
| 5      | 15787.08 | 15987.57 | 101269.96 | 9.1983019 | 9.2037825  |
| 6      | 15815.81 | 16017.40 | 101274.67 | 9.1990913 | 9.2045922  |
| 7      | 15844.53 | 16047.24 | 101279.39 | 9.1998793 | 9.2054004  |
| 8      | 15873.25 | 16077.08 | 101284.12 | 9.2006658 | 9.2062072  |
| 9      | 15901.97 | 16106.92 | 101288.86 | 9.2014509 | 9.2070126  |
| 10     | 15930.69 | 16136.77 | 101293.61 | 9.2022345 | 9.2078165  |
| 11     | 15959.40 | 16166.62 | 101298.37 | 9.2030167 | 9.2086191  |
| 12     | 15988.12 | 16196.47 | 101303.14 | 9.2037974 | 9.2094203  |
| 13     | 16016.83 | 16226.32 | 101307.92 | 9.2045766 | 9.2102200  |
| 14     | 16045.55 | 16256.17 | 101312.71 | 9.2053545 | 9.2110184  |
| 15     | 16074.26 | 16286.03 | 101317.51 | 9.2061309 | 9.2118153  |
| 16     | 16102.97 | 16315.89 | 101322.31 | 9.2069059 | 9.2126109  |
| 17     | 16131.67 | 16345.76 | 101327.12 | 9.2076795 | 9.2134051  |
| 18     | 16160.38 | 16375.63 | 101331.94 | 9.2084516 | 9.2141980  |
| 19     | 16189.09 | 16405.50 | 101336.77 | 9.2092224 | 9.2149894  |
| 20     | 16217.79 | 16435.37 | 101341.61 | 9.2099917 | 9.2157795  |
| 21     | 16246.50 | 16465.25 | 101346.46 | 9.2107597 | 9.2165683  |
| 22     | 16275.20 | 16495.13 | 101351.32 | 9.2115263 | 9.2173556  |
| 23     | 16303.90 | 16525.01 | 101356.19 | 9.2122914 | 9.2181417  |
| 24     | 16332.60 | 16554.89 | 101361.07 | 9.2130552 | 9.2189264  |
| 25     | 16361.29 | 16584.78 | 101365.95 | 9.2138176 | 9.2197097  |
| 26     | 16389.99 | 16614.67 | 101370.84 | 9.2145787 | 9.2204917  |
| 27     | 16418.68 | 16644.56 | 101375.74 | 9.2153384 | 9.2212724  |
| 28     | 16447.38 | 16674.46 | 101380.65 | 9.2160967 | 9.2220518  |
| 29     | 16476.07 | 16704.36 | 101385.57 | 9.2168536 | 9.2228298  |
| 30     | 16504.76 | 16734.26 | 101390.50 | 9.2176092 | 9.2236065  |

# 80 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 98768.83 | 631375.15 | 639245.32 | 9.9946199 | 10.8002875 |
| 59     | 98764.28 | 630188.66 | 638073.47 | 9.9945999 | 10.7994706 |
| 58     | 98759.72 | 629006.51 | 636905.95 | 9.9945798 | 10.7986551 |
| 57     | 98755.15 | 627828.68 | 635742.76 | 9.9945597 | 10.7978411 |
| 56     | 98750.57 | 626655.14 | 634583.86 | 9.9945396 | 10.7970286 |
| 55     | 98745.98 | 625485.88 | 633429.23 | 9.9945194 | 10.7962175 |
| 54     | 98741.38 | 624320.86 | 632278.84 | 9.9944992 | 10.7954078 |
| 53     | 98736.77 | 623160.07 | 631132.69 | 9.9944789 | 10.7945996 |
| 52     | 98732.16 | 622003.47 | 629990.73 | 9.9944587 | 10.7937928 |
| 51     | 98727.54 | 620851.06 | 628852.95 | 9.9944383 | 10.7929874 |
| 50     | 98722.91 | 619702.79 | 627719.33 | 9.9944180 | 10.7921835 |
| 49     | 98718.27 | 618558.67 | 626589.84 | 9.9943975 | 10.7913809 |
| 48     | 98713.62 | 617418.65 | 625464.46 | 9.9943771 | 10.7905797 |
| 47     | 98708.97 | 616282.72 | 624343.16 | 9.9943566 | 10.7897800 |
| 46     | 98704.31 | 615150.85 | 623225.94 | 9.9943361 | 10.7889816 |
| 45     | 98699.64 | 614023.03 | 622112.75 | 9.9943156 | 10.7881847 |
| 44     | 98694.96 | 612899.23 | 621003.59 | 9.9942950 | 10.7873891 |
| 43     | 98690.27 | 611779.43 | 619898.43 | 9.9942743 | 10.7865949 |
| 42     | 98685.57 | 610663.60 | 618797.25 | 9.9942537 | 10.7858020 |
| 41     | 98680.86 | 609551.74 | 617700.03 | 9.9942330 | 10.7850106 |
| 40     | 98676.15 | 608443.81 | 616606.74 | 9.9942122 | 10.7842205 |
| 39     | 98671.43 | 607339.79 | 615517.36 | 9.9941914 | 10.7834317 |
| 38     | 98666.70 | 606239.67 | 614431.89 | 9.9941706 | 10.7826444 |
| 37     | 98661.96 | 605143.43 | 613350.28 | 9.9941498 | 10.7818583 |
| 36     | 98657.21 | 604051.03 | 612272.53 | 9.9941289 | 10.7810736 |
| 35     | 98652.46 | 602962.47 | 611198.61 | 9.9941079 | 10.7802903 |
| 34     | 98647.70 | 601877.72 | 610128.50 | 9.9940870 | 10.7795083 |
| 33     | 98642.93 | 600796.76 | 609062.19 | 9.9940659 | 10.7787276 |
| 32     | 98638.15 | 599719.57 | 607999.64 | 9.9940449 | 10.7779482 |
| 31     | 98633.36 | 598646.14 | 606940.85 | 9.9940238 | 10.7771702 |
| 30     | 98628.56 | 597576.44 | 605885.80 | 9.9940027 | 10.7763935 |

## 9 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 16504.76 | 16734.26 | 101390.50 | 9.2176092 | 9.2236065  |
| 31     | 16533.45 | 16764.16 | 101395.44 | 9.2183635 | 9.2243819  |
| 32     | 16562.14 | 16794.07 | 101400.39 | 9.2191164 | 9.2251561  |
| 33     | 16590.82 | 16823.98 | 101405.35 | 9.2198680 | 9.2259289  |
| 34     | 16619.51 | 16853.89 | 101410.32 | 9.2206182 | 9.2267004  |
| 35     | 16648.19 | 16883.81 | 101415.30 | 9.2213671 | 9.2274706  |
| 36     | 16676.87 | 16913.73 | 101420.29 | 9.2221147 | 9.2282395  |
| 37     | 16705.55 | 16943.65 | 101425.29 | 9.2228609 | 9.2290071  |
| 38     | 16734.23 | 16973.58 | 101430.29 | 9.2236059 | 9.2297735  |
| 39     | 16762.91 | 17003.51 | 101435.30 | 9.2243495 | 9.2305386  |
| 40     | 16791.59 | 17033.44 | 101440.32 | 9.2250918 | 9.2313024  |
| 41     | 16820.26 | 17063.37 | 101445.35 | 9.2258328 | 9.2320650  |
| 42     | 16848.94 | 17093.31 | 101450.39 | 9.2265725 | 9.2328262  |
| 43     | 16877.61 | 17123.25 | 101455.44 | 9.2273110 | 9.2335863  |
| 44     | 16906.28 | 17153.19 | 101460.50 | 9.2280481 | 9.2343451  |
| 45     | 16934.95 | 17183.14 | 101465.57 | 9.2287839 | 9.2351026  |
| 46     | 16963.62 | 17213.09 | 101470.64 | 9.2295185 | 9.2358589  |
| 47     | 16992.28 | 17243.04 | 101475.72 | 9.2302518 | 9.2366139  |
| 48     | 17020.95 | 17273.00 | 101480.81 | 9.2309838 | 9.2373678  |
| 49     | 17049.61 | 17302.96 | 101485.91 | 9.2317145 | 9.2381203  |
| 50     | 17078.28 | 17332.92 | 101491.02 | 9.2324440 | 9.2388717  |
| 51     | 17106.94 | 17362.88 | 101496.14 | 9.2331722 | 9.2396218  |
| 52     | 17135.60 | 17392.85 | 101501.27 | 9.2338992 | 9.2403708  |
| 53     | 17164.25 | 17422.82 | 101506.41 | 9.2346249 | 9.2411185  |
| 54     | 17192.91 | 17452.79 | 101511.56 | 9.2353494 | 9.2418650  |
| 55     | 17221.56 | 17482.77 | 101516.72 | 9.2360726 | 9.2426103  |
| 56     | 17250.22 | 17512.75 | 101521.89 | 9.2367946 | 9.2433542  |
| 57     | 17278.87 | 17542.73 | 101527.07 | 9.2375153 | 9.2440972  |
| 58     | 17307.52 | 17572.72 | 101532.26 | 9.2382349 | 9.2448389  |
| 59     | 17336.17 | 17602.71 | 101537.46 | 9.2389532 | 9.2455794  |
| 60     | 17364.82 | 17632.70 | 101542.67 | 9.2396702 | 9.2463188  |

# 80 Grad.

| Minute. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|---------|----------|-----------|-----------|-----------|------------|
| 30      | 98628.56 | 597576.44 | 605885.80 | 9.9940027 | 10.7763935 |
| 29      | 98623.75 | 596510.45 | 604834.45 | 9.9939815 | 10.7756181 |
| 28      | 98618.94 | 595448.15 | 603786.80 | 9.9939603 | 10.7748439 |
| 27      | 98614.12 | 594389.52 | 602742.82 | 9.9939391 | 10.7740711 |
| 26      | 98609.29 | 593334.55 | 601702.50 | 9.9939178 | 10.7732996 |
| 25      | 98604.45 | 592283.22 | 600665.81 | 9.9938965 | 10.7725294 |
| 24      | 98599.60 | 591235.50 | 599632.74 | 9.9938752 | 10.7717605 |
| 23      | 98594.74 | 590191.38 | 598603.26 | 9.9938538 | 10.7709929 |
| 22      | 98589.88 | 589150.84 | 597577.37 | 9.9938324 | 10.7702265 |
| 21      | 98585.01 | 588113.86 | 596555.04 | 9.9938109 | 10.7694614 |
| 20      | 98580.13 | 587080.42 | 595536.25 | 9.9937894 | 10.7686976 |
| 19      | 98575.24 | 586050.51 | 594520.98 | 9.9937679 | 10.7679350 |
| 18      | 98570.34 | 585024.10 | 593506.22 | 9.9937463 | 10.7671738 |
| 17      | 98565.44 | 584001.17 | 592500.95 | 9.9937247 | 10.7664137 |
| 16      | 98560.53 | 582981.72 | 591496.14 | 9.9937030 | 10.7656549 |
| 15      | 98555.61 | 581965.72 | 590494.79 | 9.9936813 | 10.7648974 |
| 14      | 98550.68 | 580953.15 | 589496.88 | 9.9936596 | 10.7641411 |
| 13      | 98545.74 | 579944.00 | 588502.38 | 9.9936378 | 10.7633861 |
| 12      | 98540.79 | 578938.25 | 587511.28 | 9.9936160 | 10.7626322 |
| 11      | 98535.83 | 577935.88 | 586523.56 | 9.9935942 | 10.7618797 |
| 10      | 98530.87 | 576936.88 | 585539.20 | 9.9935723 | 10.7611283 |
| 9       | 98525.90 | 575941.22 | 584558.20 | 9.9935504 | 10.7603782 |
| 8       | 98520.92 | 574948.89 | 583580.53 | 9.9935285 | 10.7596292 |
| 7       | 98515.93 | 573959.88 | 582606.17 | 9.9935065 | 10.7588815 |
| 6       | 98510.93 | 572974.16 | 581635.10 | 9.9934844 | 10.7581350 |
| 5       | 98505.92 | 571991.73 | 580667.32 | 9.9934624 | 10.7573897 |
| 4       | 98500.91 | 571012.56 | 579702.80 | 9.9934403 | 10.7566457 |
| 3       | 98495.89 | 570036.63 | 578741.53 | 9.9934181 | 10.7559028 |
| 2       | 98490.86 | 569063.94 | 577783.50 | 9.9933959 | 10.7551611 |
| 1       | 98485.82 | 568094.46 | 576828.67 | 9.9933737 | 10.7544206 |
| 0       | 98480.77 | 567128.18 | 575877.05 | 9.9933515 | 10.7536812 |

## 10 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 17364.82 | 17632.70 | 101542.67 | 9.2396702 | 9.2463188  |
| 1      | 17393.46 | 17662.69 | 101547.88 | 9.2403861 | 9.2470569  |
| 2      | 17422.11 | 17692.69 | 101553.10 | 9.2411007 | 9.2477939  |
| 3      | 17450.75 | 17722.69 | 101558.33 | 9.2418141 | 9.2485297  |
| 4      | 17479.39 | 17752.69 | 101563.57 | 9.2425264 | 9.2492643  |
| 5      | 17508.03 | 17782.70 | 101568.82 | 9.2432374 | 9.2499978  |
| 6      | 17536.67 | 17812.71 | 101574.08 | 9.2439472 | 9.2507301  |
| 7      | 17565.31 | 17842.72 | 101579.35 | 9.2446558 | 9.2514612  |
| 8      | 17593.95 | 17872.74 | 101584.63 | 9.2453632 | 9.2521912  |
| 9      | 17622.58 | 17902.76 | 101589.92 | 9.2460695 | 9.2529200  |
| 10     | 17651.21 | 17932.78 | 101595.21 | 9.2467746 | 9.2536477  |
| 11     | 17679.84 | 17962.81 | 101600.51 | 9.2474784 | 9.2543743  |
| 12     | 17708.47 | 17992.84 | 101605.82 | 9.2481811 | 9.2550997  |
| 13     | 17737.10 | 18022.87 | 101611.14 | 9.2488827 | 9.2558240  |
| 14     | 17765.73 | 18052.91 | 101616.47 | 9.2495830 | 9.2565472  |
| 15     | 17794.35 | 18082.95 | 101621.81 | 9.2502822 | 9.2572691  |
| 16     | 17822.98 | 18112.99 | 101627.16 | 9.2509803 | 9.2579901  |
| 17     | 17851.60 | 18143.03 | 101632.52 | 9.2516772 | 9.2587099  |
| 18     | 17880.22 | 18173.08 | 101637.89 | 9.2523729 | 9.2594285  |
| 19     | 17908.84 | 18203.13 | 101643.27 | 9.2530675 | 9.2601461  |
| 20     | 17937.46 | 18233.18 | 101648.66 | 9.2537609 | 9.2608625  |
| 21     | 17966.07 | 18263.24 | 101654.06 | 9.2544532 | 9.2615779  |
| 22     | 17994.69 | 18293.30 | 101659.46 | 9.2551444 | 9.2622921  |
| 23     | 18023.30 | 18323.36 | 101664.87 | 9.2558344 | 9.2630053  |
| 24     | 18051.91 | 18353.43 | 101670.29 | 9.2565233 | 9.2637173  |
| 25     | 18080.52 | 18383.50 | 101675.72 | 9.2572110 | 9.2644283  |
| 26     | 18109.13 | 18413.57 | 101681.16 | 9.2578977 | 9.2651382  |
| 27     | 18137.74 | 18443.65 | 101686.61 | 9.2585832 | 9.2658470  |
| 28     | 18166.35 | 18473.73 | 101692.07 | 9.2592676 | 9.2665547  |
| 29     | 18194.95 | 18503.81 | 101697.54 | 9.2599509 | 9.2672613  |
| 30     | 18223.55 | 18533.90 | 101703.02 | 9.2606330 | 9.2679669  |

## 79 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 98480.77 | 567128.18 | 575877.05 | 9.9933515 | 10.7536812 |
| 59     | 98475.71 | 566165.09 | 574928.61 | 9.9933292 | 10.7529431 |
| 58     | 98470.65 | 565205.16 | 573983.33 | 9.9933068 | 10.7522061 |
| 57     | 98465.58 | 564248.38 | 573041.21 | 9.9932845 | 10.7514703 |
| 56     | 98460.50 | 563294.74 | 572102.23 | 9.9932621 | 10.7507357 |
| 55     | 98455.41 | 562344.21 | 571166.36 | 9.9932396 | 10.7500022 |
| 54     | 98450.31 | 561396.80 | 570233.60 | 9.9932171 | 10.7492699 |
| 53     | 98445.21 | 560452.47 | 569303.93 | 9.9931946 | 10.7485388 |
| 52     | 98440.10 | 559511.21 | 568377.34 | 9.9931720 | 10.7478088 |
| 51     | 98434.98 | 558573.02 | 567453.80 | 9.9931494 | 10.7470800 |
| 50     | 98429.85 | 557637.86 | 566533.31 | 9.9931268 | 10.7463523 |
| 49     | 98424.71 | 556705.74 | 565615.84 | 9.9931041 | 10.7456257 |
| 48     | 98419.56 | 555776.63 | 564701.40 | 9.9930814 | 10.7449003 |
| 47     | 98414.40 | 554850.52 | 563789.95 | 9.9930587 | 10.7441760 |
| 46     | 98409.24 | 553927.40 | 562881.48 | 9.9930359 | 10.7434528 |
| 45     | 98404.07 | 553007.24 | 561975.99 | 9.9930131 | 10.7427308 |
| 44     | 98398.89 | 552090.05 | 561073.45 | 9.9929902 | 10.7420099 |
| 43     | 98393.70 | 551175.79 | 560173.86 | 9.9929673 | 10.7412901 |
| 42     | 98388.50 | 550264.46 | 559277.19 | 9.9929444 | 10.7405715 |
| 41     | 98383.29 | 549356.04 | 558383.43 | 9.9929214 | 10.7398539 |
| 40     | 98378.08 | 548450.52 | 557492.58 | 9.9928984 | 10.7391375 |
| 39     | 98372.86 | 547547.88 | 556604.60 | 9.9928753 | 10.7384221 |
| 38     | 98367.63 | 546648.12 | 555719.50 | 9.9928522 | 10.7377079 |
| 37     | 98362.39 | 545751.21 | 554837.26 | 9.9928291 | 10.7369947 |
| 36     | 98357.14 | 544857.15 | 553957.86 | 9.9928059 | 10.7362827 |
| 35     | 98351.89 | 543965.92 | 553081.29 | 9.9927827 | 10.7355717 |
| 34     | 98346.63 | 543037.50 | 552207.54 | 9.9927595 | 10.7348618 |
| 33     | 98341.36 | 542191.88 | 551336.59 | 9.9927362 | 10.7341530 |
| 32     | 98336.08 | 541309.06 | 550468.43 | 9.9927129 | 10.7334453 |
| 31     | 98330.79 | 540429.01 | 549603.05 | 9.9926895 | 10.7327387 |
| 30     | 98325.49 | 539551.72 | 548740.43 | 9.9926661 | 10.7320331 |



# 10 Grad.

| Min. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|------|----------|----------|-----------|-----------|------------|
| 30   | 18223.55 | 18533.90 | 101703.02 | 9.2606330 | 9.2679669  |
| 31   | 18252.15 | 18563.99 | 101708.51 | 9.2613141 | 9.2686714  |
| 32   | 18280.75 | 18594.08 | 101714.01 | 9.2619941 | 9.2693749  |
| 33   | 18309.35 | 18624.18 | 101719.52 | 9.2626729 | 9.2700772  |
| 34   | 18337.95 | 18654.28 | 101725.04 | 9.2633507 | 9.2707786  |
| 35   | 18366.54 | 18684.38 | 101730.56 | 9.2640274 | 9.2714788  |
| 36   | 18395.13 | 18714.49 | 101734.09 | 9.2647030 | 9.2721780  |
| 37   | 18423.73 | 18744.60 | 101741.63 | 9.2653775 | 9.2728762  |
| 38   | 18452.32 | 18774.71 | 101747.18 | 9.2660509 | 9.2735733  |
| 39   | 18480.91 | 18804.83 | 101752.74 | 9.2667232 | 9.2742694  |
| 40   | 18509.49 | 18834.95 | 101758.31 | 9.2673945 | 9.2749644  |
| 41   | 18538.08 | 18865.07 | 101763.89 | 9.2680647 | 9.2756584  |
| 42   | 18566.66 | 18895.20 | 101769.48 | 9.2687338 | 9.2763514  |
| 43   | 18595.24 | 18925.33 | 101775.08 | 9.2694019 | 9.2770434  |
| 44   | 18623.82 | 18955.46 | 101780.69 | 9.2700689 | 9.2777343  |
| 45   | 18652.40 | 18985.59 | 101786.31 | 9.2707348 | 9.2784242  |
| 46   | 18680.98 | 19015.73 | 101791.94 | 9.2713997 | 9.2791131  |
| 47   | 18709.56 | 19045.87 | 101797.58 | 9.2720635 | 9.2798009  |
| 48   | 18738.13 | 19076.02 | 101803.22 | 9.2727263 | 9.2804878  |
| 49   | 18766.70 | 19106.17 | 101808.87 | 9.2733880 | 9.2811736  |
| 50   | 18795.27 | 19136.32 | 101814.53 | 9.2740487 | 9.2818585  |
| 51   | 18823.84 | 19166.48 | 101820.20 | 9.2747083 | 9.2825423  |
| 52   | 18852.41 | 19196.64 | 101825.88 | 9.2753669 | 9.2832251  |
| 53   | 18880.98 | 19226.80 | 101831.57 | 9.2760245 | 9.2839070  |
| 54   | 18909.54 | 19256.96 | 101837.27 | 9.2766811 | 9.2845878  |
| 55   | 18938.11 | 19287.13 | 101842.98 | 9.2773366 | 9.2852677  |
| 56   | 18966.67 | 19317.30 | 101848.70 | 9.2779911 | 9.2859466  |
| 57   | 18995.23 | 19347.48 | 101854.43 | 9.2786445 | 9.2866245  |
| 58   | 19023.79 | 19377.66 | 101860.17 | 9.2792970 | 9.2873014  |
| 59   | 19052.34 | 19407.84 | 101865.92 | 9.2799484 | 9.2879773  |
| 60   | 19080.90 | 19438.03 | 101871.68 | 9.2805988 | 9.2886523  |

# 79 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log Tang.  |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 98325.49 | 939551.72 | 548740.43 | 9.9926661 | 10.7320331 |
| 29     | 98320.18 | 538677.18 | 547880.55 | 9.9926427 | 10.7313286 |
| 28     | 98314.87 | 537805.38 | 547023.42 | 9.9926192 | 10.7306251 |
| 27     | 98309.55 | 536936.30 | 546169.01 | 9.9925957 | 10.7299228 |
| 26     | 98304.22 | 536069.93 | 545317.31 | 9.9925722 | 10.7292214 |
| 25     | 98298.88 | 535206.26 | 544468.31 | 9.9925486 | 10.7285212 |
| 24     | 98293.53 | 534345.27 | 543621.99 | 9.9925250 | 10.7278220 |
| 23     | 98288.17 | 533486.96 | 542778.35 | 9.9925013 | 10.7271238 |
| 22     | 98282.81 | 532631.31 | 541937.37 | 9.9924776 | 10.7264267 |
| 21     | 98277.44 | 531778.30 | 541099.03 | 9.9924539 | 10.7257306 |
| 20     | 98272.06 | 530927.93 | 540263.33 | 9.9924301 | 10.7250356 |
| 19     | 98266.67 | 530080.18 | 539430.26 | 9.9924063 | 10.7243416 |
| 18     | 98261.27 | 529235.05 | 538599.79 | 9.9923824 | 10.7236486 |
| 17     | 98255.87 | 528392.51 | 537771.92 | 9.9923585 | 10.7229566 |
| 16     | 98250.46 | 527552.55 | 536946.64 | 9.9923346 | 10.7222657 |
| 15     | 98245.04 | 526715.17 | 536123.93 | 9.9923106 | 10.7215758 |
| 14     | 98239.61 | 525883.35 | 535303.79 | 9.9922866 | 10.7208869 |
| 13     | 98234.17 | 525048.69 | 534486.20 | 9.9922626 | 10.7201991 |
| 12     | 98228.72 | 524218.36 | 533671.14 | 9.9922385 | 10.7195122 |
| 11     | 98223.27 | 523391.16 | 532858.61 | 9.9922144 | 10.7188264 |
| 10     | 98217.81 | 522566.47 | 532048.60 | 9.9921902 | 10.7181415 |
| 9      | 98212.34 | 521744.28 | 531241.09 | 9.9921660 | 10.7174577 |
| 8      | 98206.86 | 520924.59 | 530436.08 | 9.9921418 | 10.7167749 |
| 7      | 98201.37 | 520107.38 | 529633.54 | 9.9921175 | 10.7160930 |
| 6      | 98195.87 | 519292.64 | 528833.47 | 9.9920932 | 10.7154122 |
| 5      | 98190.36 | 518480.35 | 528035.87 | 9.9920689 | 10.7147323 |
| 4      | 98184.85 | 517670.51 | 527240.70 | 9.9920445 | 10.7140534 |
| 3      | 98179.33 | 516863.11 | 526447.98 | 9.9920201 | 10.7133755 |
| 2      | 98173.80 | 516058.13 | 525657.68 | 9.9919956 | 10.7126986 |
| 1      | 98168.26 | 515255.57 | 524869.79 | 9.9919711 | 10.7120227 |
| 0      | 98162.71 | 514455.40 | 524084.31 | 9.9919466 | 10.7113477 |

# I I Grad.

| Minute. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|---------|----------|----------|-----------|-----------|------------|
| 0       | 19080.90 | 19438.03 | 101871.68 | 9.2805988 | 9.2886523  |
| 1       | 19109.45 | 19468.22 | 101877.44 | 9.2812483 | 9.2893263  |
| 2       | 19138.00 | 19498.41 | 101883.21 | 9.2818967 | 9.2899993  |
| 3       | 19166.55 | 19528.61 | 101888.99 | 9.2825441 | 9.2906713  |
| 4       | 19195.10 | 19558.81 | 101894.78 | 9.2832905 | 9.2913424  |
| 5       | 19223.65 | 19589.01 | 101900.58 | 9.2838359 | 9.2920126  |
| 6       | 19252.20 | 19619.22 | 101906.39 | 9.2844803 | 9.2926817  |
| 7       | 19280.74 | 19649.43 | 101912.21 | 9.2851237 | 9.2933500  |
| 8       | 19309.28 | 19679.64 | 101918.04 | 9.2857661 | 9.2940172  |
| 9       | 19337.82 | 19709.86 | 101923.88 | 9.2864076 | 9.2946836  |
| 10      | 19366.36 | 19740.08 | 101929.73 | 9.2870480 | 9.2953489  |
| 11      | 19394.90 | 19770.30 | 101935.59 | 9.2876875 | 9.2960134  |
| 12      | 19424.44 | 19800.53 | 101941.46 | 9.2883260 | 9.2966769  |
| 13      | 19451.97 | 19830.76 | 101947.34 | 9.2889636 | 9.2973395  |
| 14      | 19480.50 | 19861.00 | 101953.23 | 9.2896001 | 9.2980011  |
| 15      | 19509.03 | 19891.24 | 101959.12 | 9.2902357 | 9.2986618  |
| 16      | 19537.56 | 19921.48 | 101965.02 | 9.2908704 | 9.2993216  |
| 17      | 19566.09 | 19951.72 | 101970.93 | 9.2915040 | 9.2999804  |
| 18      | 19594.61 | 19981.97 | 101976.85 | 9.2921367 | 9.3006383  |
| 19      | 19623.14 | 20012.22 | 101982.78 | 9.2927685 | 9.3012954  |
| 20      | 19651.66 | 20042.48 | 101988.72 | 9.2933993 | 9.3019514  |
| 21      | 19680.18 | 20072.74 | 101994.67 | 9.2940291 | 9.3026066  |
| 22      | 19708.70 | 20103.00 | 102000.63 | 9.2946580 | 9.3032609  |
| 23      | 19737.22 | 20133.27 | 102006.60 | 9.2952859 | 9.3039143  |
| 24      | 19765.73 | 20163.54 | 102012.58 | 9.2959129 | 9.3045667  |
| 25      | 19794.25 | 20193.81 | 102018.57 | 9.2965390 | 9.3052183  |
| 26      | 19822.76 | 20224.09 | 102024.57 | 9.2971641 | 9.3058689  |
| 27      | 19851.27 | 20254.37 | 102030.58 | 9.2977883 | 9.3065187  |
| 28      | 19879.78 | 20284.65 | 102036.60 | 9.2984116 | 9.3071675  |
| 29      | 19908.29 | 20314.94 | 102042.63 | 9.2990339 | 9.3078155  |
| 30      | 19936.79 | 20345.23 | 102048.67 | 9.2996553 | 9.3084626  |

# 78 Grad.

| Minute. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|---------|----------|-----------|-----------|-----------|------------|
| 60      | 98162.71 | 514455.40 | 524084.31 | 9.9919466 | 10.7113477 |
| 59      | 98157.16 | 513657.63 | 523301.21 | 9.9919220 | 10.7106737 |
| 58      | 98151.60 | 512862.24 | 522520.50 | 9.9918974 | 10.7100007 |
| 57      | 98146.03 | 512069.21 | 521742.16 | 9.9918727 | 10.7093287 |
| 56      | 98140.45 | 511278.55 | 520966.18 | 9.9918480 | 10.7086576 |
| 55      | 98134.86 | 510490.24 | 520192.54 | 9.9918233 | 10.7079874 |
| 54      | 98129.26 | 509704.26 | 519421.25 | 9.9917986 | 10.7073183 |
| 53      | 98123.69 | 508920.61 | 518652.28 | 9.9917737 | 10.7066500 |
| 52      | 98118.05 | 508139.28 | 517885.63 | 9.9917489 | 10.7059828 |
| 51      | 98112.43 | 507360.25 | 517121.28 | 9.9917240 | 10.7053164 |
| 50      | 98106.80 | 506583.52 | 516359.24 | 9.9916991 | 10.7046511 |
| 49      | 98101.16 | 505809.07 | 515599.48 | 9.9916741 | 10.7039866 |
| 48      | 98095.51 | 505036.90 | 514841.99 | 9.9916492 | 10.7033231 |
| 47      | 98089.86 | 504267.00 | 514086.77 | 9.9916241 | 10.7026605 |
| 46      | 98084.20 | 503499.35 | 513333.81 | 9.9915990 | 10.7019989 |
| 45      | 98078.53 | 502733.95 | 512583.09 | 9.9915739 | 10.7013382 |
| 44      | 98072.85 | 501970.78 | 511834.61 | 9.9915488 | 10.7006784 |
| 43      | 98067.16 | 501209.84 | 511088.35 | 9.9915236 | 10.7000196 |
| 42      | 98061.46 | 500451.11 | 510344.31 | 9.9914984 | 10.6993617 |
| 41      | 98055.76 | 499694.59 | 509602.48 | 9.9914731 | 10.6987046 |
| 40      | 98050.05 | 498940.27 | 508862.84 | 9.9914478 | 10.6980486 |
| 39      | 98044.33 | 498188.13 | 508125.39 | 9.9914225 | 10.6973934 |
| 38      | 98038.60 | 497438.17 | 507390.12 | 9.9913971 | 10.6967391 |
| 37      | 98032.86 | 496690.37 | 506657.01 | 9.9913717 | 10.6960857 |
| 36      | 98027.11 | 495944.74 | 505926.06 | 9.9913462 | 10.6954333 |
| 35      | 98021.36 | 495201.25 | 505197.26 | 9.9913207 | 10.6947817 |
| 34      | 98015.60 | 494459.90 | 504470.60 | 9.9912952 | 10.6941311 |
| 33      | 98009.83 | 493720.68 | 503746.07 | 9.9912696 | 10.6934813 |
| 32      | 98004.05 | 492983.58 | 503023.67 | 9.9912440 | 10.6928329 |
| 31      | 97998.26 | 492248.59 | 502303.37 | 9.9912184 | 10.6921845 |
| 30      | 97992.47 | 491515.70 | 501585.17 | 9.9911927 | 10.6915374 |

## II Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 19936.79 | 20345.23 | 102048.67 | 9.2996553 | 9.3084626  |
| 31     | 19965.30 | 20375.52 | 102054.71 | 9.3002758 | 9.3091088  |
| 32     | 19993.80 | 20405.82 | 102060.76 | 9.3008953 | 9.3097541  |
| 33     | 20022.30 | 20436.12 | 102066.82 | 9.3015140 | 9.3103985  |
| 34     | 20050.80 | 20466.43 | 102072.89 | 9.3021317 | 9.3110421  |
| 35     | 20079.30 | 20496.74 | 102078.97 | 9.3027485 | 9.3116848  |
| 36     | 20107.79 | 20527.05 | 102085.06 | 9.3033644 | 9.3123266  |
| 37     | 20136.29 | 20557.37 | 102091.16 | 9.3039794 | 9.3129675  |
| 38     | 20164.78 | 20587.69 | 102097.27 | 9.3045934 | 9.3136076  |
| 39     | 20193.27 | 20618.01 | 102103.39 | 9.3052066 | 9.3142468  |
| 40     | 20221.76 | 20634.34 | 102109.52 | 9.3058189 | 9.3148851  |
| 41     | 20250.24 | 20678.67 | 102115.66 | 9.3064303 | 9.3155226  |
| 42     | 20278.73 | 20709.00 | 102121.81 | 9.3070407 | 9.3161592  |
| 43     | 20307.21 | 20739.34 | 102127.97 | 9.3076503 | 9.3167950  |
| 44     | 20335.69 | 20769.68 | 102134.14 | 9.3082590 | 9.3174299  |
| 45     | 20364.17 | 20800.03 | 102140.32 | 9.3088668 | 9.3180640  |
| 46     | 20392.65 | 20830.38 | 102146.50 | 9.3094737 | 9.3186972  |
| 47     | 20421.13 | 20860.73 | 102152.69 | 9.3100798 | 9.3193295  |
| 48     | 20449.61 | 20891.09 | 102158.89 | 9.3106849 | 9.3199611  |
| 49     | 20478.08 | 20921.45 | 102165.10 | 9.3112892 | 9.3205918  |
| 50     | 20406.55 | 20951.81 | 102171.32 | 9.3118926 | 9.3212216  |
| 51     | 20535.02 | 20982.18 | 102177.55 | 9.3124951 | 9.3218506  |
| 52     | 20563.49 | 21012.55 | 102183.79 | 9.3130968 | 9.3224788  |
| 53     | 20591.95 | 21042.93 | 102190.04 | 9.3136976 | 9.3231061  |
| 54     | 20620.42 | 21073.31 | 102196.30 | 9.3142975 | 9.3237327  |
| 55     | 20648.88 | 21103.69 | 102202.57 | 9.3148965 | 9.3243584  |
| 56     | 20677.34 | 21134.07 | 102208.85 | 9.3154947 | 9.3249832  |
| 57     | 20705.80 | 21164.46 | 102215.14 | 9.3160921 | 9.3256073  |
| 58     | 20734.26 | 21194.85 | 102221.44 | 9.3166885 | 9.3262305  |
| 59     | 20762.71 | 21225.25 | 102227.75 | 9.3172841 | 9.3268529  |
| 60     | 20791.17 | 21255.65 | 102234.07 | 9.3178789 | 9.3274745  |

# 78 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 97992.47 | 491515.70 | 501585.17 | 9.9911927 | 10.6915374 |
| 29     | 97986.67 | 490784.91 | 500869.07 | 9.9911670 | 10.6908912 |
| 28     | 97980.86 | 490056.20 | 500155.05 | 9.9911412 | 10.6902459 |
| 27     | 97975.04 | 489329.56 | 499443.11 | 9.9911154 | 10.6896015 |
| 26     | 97969.21 | 488604.99 | 498733.23 | 9.9910896 | 10.6889579 |
| 25     | 97963.37 | 487882.48 | 498025.41 | 9.9910637 | 10.6883152 |
| 24     | 97957.52 | 487162.01 | 497319.64 | 9.9910378 | 10.6876734 |
| 23     | 97951.67 | 486443.59 | 496615.91 | 9.9910119 | 10.6870325 |
| 22     | 97945.81 | 485727.19 | 495914.21 | 9.9909859 | 10.6863924 |
| 21     | 97939.94 | 485012.82 | 495214.53 | 9.9909598 | 10.6857532 |
| 20     | 97934.06 | 484300.45 | 494516.87 | 9.9909338 | 10.6851149 |
| 19     | 97928.17 | 483590.10 | 493821.20 | 9.9909077 | 10.6844774 |
| 18     | 97922.28 | 482881.74 | 493127.54 | 9.9908815 | 10.6838408 |
| 17     | 97916.38 | 482157.36 | 492435.86 | 9.9908553 | 10.6832050 |
| 16     | 97910.47 | 481470.96 | 491746.16 | 9.9908291 | 10.6825701 |
| 15     | 97904.55 | 480768.54 | 491058.44 | 9.9908029 | 10.6819360 |
| 14     | 97898.62 | 480068.08 | 490372.67 | 9.9907766 | 10.6813028 |
| 13     | 97892.68 | 479369.57 | 489688.86 | 9.9907502 | 10.6806705 |
| 12     | 97886.74 | 478673.00 | 489007.00 | 9.9907239 | 10.6800389 |
| 11     | 97880.79 | 477978.37 | 488327.07 | 9.9906974 | 10.6794082 |
| 10     | 97874.83 | 477285.67 | 487649.07 | 9.9906710 | 10.6787784 |
| 9      | 97868.86 | 476594.90 | 486972.99 | 9.9906445 | 10.6781494 |
| 8      | 97862.88 | 475906.03 | 486298.83 | 9.9906180 | 10.6775212 |
| 7      | 97856.89 | 475219.07 | 485626.57 | 9.9905914 | 10.6768939 |
| 6      | 97850.90 | 474534.01 | 484956.21 | 9.9905648 | 10.6762673 |
| 5      | 97844.90 | 473850.83 | 484287.74 | 9.9905382 | 10.6756416 |
| 4      | 97838.89 | 473169.54 | 483621.14 | 9.9905115 | 10.6750168 |
| 3      | 97832.87 | 472490.12 | 482956.43 | 9.9904848 | 10.6743927 |
| 2      | 97826.84 | 471812.56 | 482293.57 | 9.9904580 | 10.6737695 |
| 1      | 97820.80 | 471136.86 | 481632.58 | 9.9904312 | 10.6731471 |
| 0      | 97814.76 | 470463.01 | 480973.13 | 9.9904044 | 10.6725255 |

## 12 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 20791.17 | 21255.65 | 102234.07 | 9.3178789 | 9.3274745  |
| 1      | 20819.62 | 21286.06 | 102240.40 | 9.3184728 | 9.3280953  |
| 2      | 20848.07 | 21316.47 | 102246.73 | 9.3190659 | 9.3287153  |
| 3      | 20876.52 | 21346.88 | 102253.07 | 9.3196581 | 9.3293345  |
| 4      | 20904.97 | 21377.30 | 102259.42 | 9.3202495 | 9.3299528  |
| 5      | 20933.41 | 21407.72 | 102265.78 | 9.3208400 | 9.3305704  |
| 6      | 20961.86 | 21438.14 | 102272.15 | 9.3214297 | 9.3311872  |
| 7      | 20990.30 | 21468.57 | 102278.53 | 9.3220186 | 9.3318031  |
| 8      | 21018.74 | 21499.00 | 102284.92 | 9.3226066 | 9.3324183  |
| 9      | 21047.18 | 21529.44 | 102291.32 | 9.3231938 | 9.3330327  |
| 10     | 21075.61 | 21559.88 | 102297.73 | 9.3237802 | 9.3336463  |
| 11     | 21104.05 | 21590.32 | 102304.15 | 9.3243657 | 9.3342591  |
| 12     | 21132.48 | 21620.77 | 102310.58 | 9.3249505 | 9.3348711  |
| 13     | 21160.91 | 21651.22 | 102317.02 | 9.3255344 | 9.3354823  |
| 14     | 21189.34 | 21681.67 | 102323.47 | 9.3261174 | 9.3360927  |
| 15     | 21217.77 | 21712.13 | 102329.93 | 9.3266997 | 9.3367024  |
| 16     | 21246.19 | 21742.59 | 102336.40 | 9.3272811 | 9.3373113  |
| 17     | 21274.62 | 21773.06 | 102342.88 | 9.3278617 | 9.3379194  |
| 18     | 21303.04 | 21803.53 | 102349.37 | 9.3284416 | 9.3385267  |
| 19     | 21331.46 | 21834.00 | 102355.87 | 9.3290206 | 9.3391333  |
| 20     | 21359.88 | 21864.48 | 102362.38 | 9.3295988 | 9.3397391  |
| 21     | 21388.29 | 21894.96 | 102368.90 | 9.3301761 | 9.3403441  |
| 22     | 21416.71 | 21925.44 | 102375.43 | 9.3307527 | 9.3409484  |
| 23     | 21445.12 | 21955.93 | 102381.96 | 9.3313285 | 9.3415519  |
| 24     | 21473.53 | 21986.42 | 102388.50 | 9.3319035 | 9.3421546  |
| 25     | 21501.94 | 22016.92 | 102395.05 | 9.3324777 | 9.3427566  |
| 26     | 21530.35 | 22047.42 | 102401.61 | 9.3330511 | 9.3433578  |
| 27     | 21558.76 | 22077.93 | 102408.18 | 9.3336237 | 9.3439583  |
| 28     | 21587.16 | 22108.44 | 102414.76 | 9.3341955 | 9.3445580  |
| 29     | 21615.56 | 22138.95 | 102421.35 | 9.3347665 | 9.3451570  |
| 30     | 21643.96 | 22169.47 | 102427.95 | 9.3353368 | 9.3457552  |

## 77 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 97814.76 | 470463.01 | 480973.43 | 9.9904044 | 10.6725254 |
| 59     | 97808.71 | 469791.00 | 480316.13 | 9.9903775 | 10.6719047 |
| 58     | 97802.65 | 469120.83 | 479660.66 | 9.9903506 | 10.6712847 |
| 57     | 97796.58 | 468452.48 | 479007.02 | 9.9903237 | 10.6706654 |
| 56     | 97790.50 | 467785.95 | 478355.20 | 9.9902967 | 10.6700470 |
| 55     | 97784.41 | 467121.24 | 477705.19 | 9.9902697 | 10.6694290 |
| 54     | 97778.32 | 466458.32 | 477056.99 | 9.9902426 | 10.6688128 |
| 53     | 97772.22 | 465797.21 | 476410.58 | 9.9902155 | 10.6681966 |
| 52     | 97766.11 | 465137.88 | 475765.96 | 9.9901883 | 10.6675817 |
| 51     | 97759.99 | 464480.34 | 475123.12 | 9.9901612 | 10.6669672 |
| 50     | 97753.86 | 463824.57 | 474482.06 | 9.9901339 | 10.6663537 |
| 49     | 97747.73 | 463170.56 | 473842.77 | 9.9901067 | 10.6657409 |
| 48     | 97741.59 | 462518.32 | 473205.23 | 9.9900794 | 10.6651289 |
| 47     | 97735.44 | 461867.83 | 472569.45 | 9.9900521 | 10.6645177 |
| 46     | 97729.28 | 461219.08 | 471935.42 | 9.9900247 | 10.6639073 |
| 45     | 97723.11 | 460572.07 | 471303.13 | 9.9899973 | 10.6632976 |
| 44     | 97716.93 | 459926.80 | 470672.56 | 9.9899698 | 10.6626887 |
| 43     | 97710.75 | 459283.25 | 470043.72 | 9.9899423 | 10.6620806 |
| 42     | 97704.56 | 458641.41 | 469416.60 | 9.9899148 | 10.6614733 |
| 41     | 97698.36 | 458001.29 | 468791.19 | 9.9898873 | 10.6608667 |
| 40     | 97692.15 | 457362.87 | 468167.48 | 9.9898597 | 10.6602609 |
| 39     | 97685.93 | 456726.14 | 467545.48 | 9.9898320 | 10.6596559 |
| 38     | 97679.70 | 456091.11 | 466925.16 | 9.9898043 | 10.6590516 |
| 37     | 97673.47 | 455457.76 | 466306.52 | 9.9897766 | 10.6584481 |
| 36     | 97667.23 | 454826.08 | 465689.56 | 9.9897489 | 10.6578452 |
| 35     | 97660.98 | 454196.08 | 465074.27 | 9.9897211 | 10.6572434 |
| 34     | 97654.72 | 453567.73 | 464460.64 | 9.9896932 | 10.6566422 |
| 33     | 97648.45 | 452941.05 | 463848.67 | 9.9896654 | 10.6560417 |
| 32     | 97642.17 | 452316.01 | 463238.35 | 9.9896374 | 10.6554420 |
| 31     | 97635.89 | 451692.61 | 462629.67 | 9.9896095 | 10.6548430 |
| 30     | 97629.60 | 451070.85 | 462022.63 | 9.9895815 | 10.6542448 |



## 12 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 21643.96 | 22169.47 | 102427.95 | 9.3353368 | 9.3457552  |
| 31     | 21672.36 | 22199.99 | 102434.56 | 9.3359062 | 9.3463527  |
| 32     | 21700.76 | 22230.51 | 102441.18 | 9.3364749 | 9.3469494  |
| 33     | 21729.15 | 22261.04 | 102447.81 | 9.3370428 | 9.3475454  |
| 34     | 21757.54 | 22291.57 | 102454.45 | 9.3376099 | 9.3481407  |
| 35     | 21785.93 | 22322.11 | 102461.10 | 9.3381762 | 9.3487352  |
| 36     | 21814.32 | 22352.65 | 102467.76 | 9.3387418 | 9.3493290  |
| 37     | 21842.71 | 22383.19 | 102474.43 | 9.3393065 | 9.3499220  |
| 38     | 21871.10 | 22413.74 | 102481.11 | 9.3398706 | 9.3505143  |
| 39     | 21899.48 | 22444.29 | 102487.80 | 9.3404338 | 9.3511059  |
| 40     | 21927.86 | 22474.85 | 102494.49 | 9.3409963 | 9.3516968  |
| 41     | 21956.24 | 22505.41 | 102501.19 | 9.3415580 | 9.3522869  |
| 42     | 21984.62 | 22535.97 | 102507.90 | 9.3421190 | 9.3528763  |
| 43     | 22013.00 | 22566.54 | 102514.62 | 9.3426792 | 9.3534650  |
| 44     | 22041.37 | 22597.11 | 102521.35 | 9.3432386 | 9.3540530  |
| 45     | 22069.74 | 22627.69 | 102528.09 | 9.3437973 | 9.3546402  |
| 46     | 22098.11 | 22658.27 | 102534.84 | 9.3443552 | 9.3552267  |
| 47     | 22126.48 | 22688.85 | 102541.60 | 9.3449124 | 9.3558126  |
| 48     | 22154.85 | 22719.44 | 102548.37 | 9.3454688 | 9.3563977  |
| 49     | 22183.21 | 22750.03 | 102555.15 | 9.3460245 | 9.3569821  |
| 50     | 22212.58 | 22780.63 | 102561.94 | 9.3465794 | 9.3575658  |
| 51     | 22239.94 | 22811.23 | 102568.74 | 9.3471336 | 9.3581487  |
| 52     | 22268.30 | 22841.83 | 102575.55 | 9.3476870 | 9.3587310  |
| 53     | 22296.66 | 22872.44 | 102582.37 | 9.3482397 | 9.3593126  |
| 54     | 22325.01 | 22903.05 | 102589.20 | 9.3487917 | 9.3598935  |
| 55     | 22353.37 | 22933.67 | 102596.04 | 9.3493429 | 9.3604736  |
| 56     | 22381.72 | 22964.29 | 102602.89 | 9.3498934 | 9.3610531  |
| 57     | 22410.07 | 22994.92 | 102609.75 | 9.3504432 | 9.3616319  |
| 58     | 22438.41 | 23025.55 | 102616.62 | 9.3509922 | 9.3622100  |
| 59     | 22466.76 | 23056.18 | 102623.50 | 9.3515405 | 9.3627874  |
| 60     | 22495.11 | 23086.82 | 102630.39 | 9.3520880 | 9.3633641  |

## 77 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 97629.60 | 451070.85 | 462022.63 | 9.9895815 | 10.6542448 |
| 29     | 97623.30 | 450450.72 | 461417.22 | 9.9895535 | 10.6536473 |
| 28     | 97616.99 | 449832.21 | 460813.43 | 9.9895254 | 10.6530506 |
| 27     | 97610.67 | 449215.32 | 460211.26 | 9.9894973 | 10.6524546 |
| 26     | 97604.35 | 448600.04 | 459610.70 | 9.9894692 | 10.6518593 |
| 25     | 97598.02 | 447986.36 | 459011.74 | 9.9894410 | 10.6512648 |
| 24     | 97591.68 | 447374.28 | 458414.39 | 9.9894128 | 10.6506710 |
| 23     | 97585.33 | 446763.79 | 457818.62 | 9.9893845 | 10.6500780 |
| 22     | 97578.97 | 446154.89 | 457224.44 | 9.9893562 | 10.6494857 |
| 21     | 97572.60 | 445547.56 | 456631.83 | 9.9893279 | 10.6488941 |
| 20     | 97566.23 | 444941.81 | 456040.80 | 9.9892995 | 10.6483032 |
| 19     | 97559.85 | 444337.62 | 455451.34 | 9.9892711 | 10.6477131 |
| 18     | 97553.46 | 443734.99 | 454863.44 | 9.9892427 | 10.6471237 |
| 17     | 97547.06 | 443133.92 | 454277.09 | 9.9892142 | 10.6465350 |
| 16     | 97540.65 | 442534.39 | 453692.29 | 9.9891856 | 10.6459470 |
| 15     | 97534.23 | 441936.41 | 453109.03 | 9.9891571 | 10.6453598 |
| 14     | 97527.81 | 441339.96 | 452527.30 | 9.9891285 | 10.6447733 |
| 13     | 97521.38 | 440745.04 | 451947.11 | 9.9890998 | 10.6441874 |
| 12     | 97514.94 | 440151.64 | 451368.44 | 9.9890711 | 10.6436023 |
| 11     | 97508.49 | 439559.76 | 450791.29 | 9.9890424 | 10.6430179 |
| 10     | 97502.03 | 438969.40 | 450215.65 | 9.9890137 | 10.6424342 |
| 9      | 97495.56 | 438380.54 | 449641.52 | 9.9889849 | 10.6418513 |
| 8      | 97489.09 | 437793.17 | 449068.89 | 9.9889560 | 10.6412690 |
| 7      | 97482.61 | 437207.31 | 448497.75 | 9.9889271 | 10.6406874 |
| 6      | 97476.12 | 436622.93 | 447928.10 | 9.9888982 | 10.6401065 |
| 5      | 97469.62 | 436040.03 | 447359.93 | 9.9888693 | 10.6395264 |
| 4      | 97463.11 | 435458.61 | 446793.24 | 9.9888403 | 10.6389469 |
| 3      | 97456.60 | 434878.66 | 446228.03 | 9.9888113 | 10.6383681 |
| 2      | 97450.08 | 434300.18 | 445664.28 | 9.9887822 | 10.6377900 |
| 1      | 97443.55 | 433723.16 | 445101.98 | 9.9887531 | 10.6372126 |
| 0      | 97437.01 | 433147.59 | 444541.15 | 9.9887239 | 10.6366359 |

# 13 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 22495.11 | 23086.62 | 102630.39 | 9.3520880 | 9.3633641  |
| 1      | 22523.45 | 23117.46 | 102637.29 | 9.3526349 | 9.3639401  |
| 2      | 22551.79 | 23148.11 | 102644.20 | 9.3531810 | 9.3645155  |
| 3      | 22580.13 | 23178.76 | 102651.12 | 9.3537264 | 9.3650901  |
| 4      | 22608.46 | 23209.41 | 102658.05 | 9.3542710 | 9.3656641  |
| 5      | 22636.80 | 23240.07 | 102664.99 | 9.3548150 | 9.3662374  |
| 6      | 22665.13 | 23270.73 | 102671.94 | 9.3553582 | 9.3668100  |
| 7      | 22693.46 | 23301.40 | 102678.90 | 9.3559007 | 9.3673819  |
| 8      | 22721.79 | 23332.07 | 102685.87 | 9.3564426 | 9.3679532  |
| 9      | 22750.12 | 23362.74 | 102692.84 | 9.3569836 | 9.3685238  |
| 10     | 22778.44 | 23393.42 | 102699.82 | 9.3575240 | 9.3690937  |
| 11     | 22806.77 | 23424.10 | 102706.81 | 9.3580637 | 9.3696629  |
| 12     | 22835.09 | 23454.79 | 102713.81 | 9.3586027 | 9.3702315  |
| 13     | 22863.41 | 23485.48 | 102720.82 | 9.3591409 | 9.3707994  |
| 14     | 22891.72 | 23516.17 | 102727.84 | 9.3596785 | 9.3713667  |
| 15     | 22920.04 | 23546.87 | 102734.87 | 9.3602154 | 9.3719333  |
| 16     | 22948.35 | 23577.58 | 102741.91 | 9.3607515 | 9.3724992  |
| 17     | 22976.66 | 23608.29 | 102748.96 | 9.3612870 | 9.3730645  |
| 18     | 23004.97 | 23639.00 | 102756.02 | 9.3618217 | 9.3736291  |
| 19     | 23033.28 | 23669.72 | 102763.09 | 9.3623558 | 9.3741930  |
| 20     | 23061.59 | 23700.44 | 102770.17 | 9.3628892 | 9.3747563  |
| 21     | 23089.89 | 23731.16 | 102777.26 | 9.3634219 | 9.3753190  |
| 22     | 23118.19 | 23761.89 | 102784.36 | 9.3639539 | 9.3758810  |
| 23     | 23146.49 | 23792.62 | 102791.47 | 9.3644852 | 9.3764423  |
| 24     | 23174.79 | 23823.36 | 102798.59 | 9.3650158 | 9.3770030  |
| 25     | 23203.09 | 23854.10 | 102805.72 | 9.3655458 | 9.3775631  |
| 26     | 23231.38 | 23884.85 | 102812.86 | 9.3660750 | 9.3781225  |
| 27     | 23259.67 | 23915.60 | 102820.01 | 9.3666036 | 9.3786813  |
| 28     | 23287.96 | 23946.35 | 102827.10 | 9.3671315 | 9.3792394  |
| 29     | 23316.25 | 23977.11 | 102834.34 | 9.3676587 | 9.3797969  |
| 30     | 23344.54 | 24007.87 | 102841.52 | 9.3681853 | 9.3803537  |

## 76 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 97437.01 | 433147.59 | 444541.15 | 9.9887239 | 10.6366359 |
| 59     | 97430.46 | 432573.47 | 443981.76 | 9.9886947 | 10.6360599 |
| 58     | 97423.90 | 432000.79 | 443423.82 | 9.9886655 | 10.6354845 |
| 57     | 97417.34 | 431429.55 | 442867.31 | 9.9886363 | 10.6349099 |
| 56     | 97410.77 | 430859.74 | 442312.24 | 9.9886070 | 10.6343359 |
| 55     | 97404.19 | 430291.36 | 441758.59 | 9.9885776 | 10.6337626 |
| 54     | 97397.60 | 429724.40 | 441206.37 | 9.9885482 | 10.6331900 |
| 53     | 97391.00 | 429158.85 | 440655.56 | 9.9885188 | 10.6326181 |
| 52     | 97384.39 | 428594.72 | 440106.16 | 9.9884894 | 10.6320468 |
| 51     | 97377.78 | 428031.99 | 439558.17 | 9.9884599 | 10.6314762 |
| 50     | 97371.16 | 427470.66 | 439011.58 | 9.9884303 | 10.6309063 |
| 49     | 97364.53 | 426910.72 | 438466.38 | 9.9884008 | 10.6303371 |
| 48     | 97357.89 | 426352.18 | 437922.57 | 9.9883712 | 10.6297685 |
| 47     | 97351.24 | 425795.01 | 437380.15 | 9.9883415 | 10.6292006 |
| 46     | 97344.58 | 425239.23 | 436839.10 | 9.9883118 | 10.6286333 |
| 45     | 97337.92 | 424684.82 | 436299.43 | 9.9882821 | 10.6280667 |
| 44     | 97331.25 | 424131.77 | 435761.13 | 9.9882523 | 10.6275008 |
| 43     | 97324.57 | 423580.09 | 435224.19 | 9.9882225 | 10.6269355 |
| 42     | 97317.88 | 423029.77 | 434688.61 | 9.9881927 | 10.6263709 |
| 41     | 97311.18 | 422480.80 | 434154.38 | 9.9881628 | 10.6258070 |
| 40     | 97304.48 | 421933.18 | 433621.50 | 9.9881329 | 10.6252437 |
| 39     | 97297.77 | 421386.90 | 433089.96 | 9.9881029 | 10.6246810 |
| 38     | 97291.05 | 420841.96 | 432559.77 | 9.9880729 | 10.6241190 |
| 37     | 97284.32 | 420298.35 | 432030.90 | 9.9880429 | 10.6235577 |
| 36     | 97277.58 | 419756.06 | 431503.36 | 9.9880128 | 10.6229970 |
| 35     | 97270.84 | 419215.10 | 430977.15 | 9.9879827 | 10.6224369 |
| 34     | 97264.09 | 418675.46 | 430452.25 | 9.9879525 | 10.6218775 |
| 33     | 97257.33 | 418137.13 | 429928.67 | 9.9879223 | 10.6213187 |
| 32     | 97250.56 | 417600.11 | 429406.40 | 9.9878921 | 10.6207606 |
| 31     | 97243.78 | 417064.40 | 428885.43 | 9.9878618 | 10.6202031 |
| 30     | 97236.99 | 416529.98 | 428365.76 | 9.9878315 | 10.6196463 |

Minute.

# 13 Grad.

|    | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|----|----------|----------|-----------|-----------|------------|
| 10 | 23344.54 | 24007.87 | 102841.52 | 9.3681853 | 9.3803537  |
| 11 | 23372.82 | 24038.64 | 102848.71 | 9.3687111 | 9.3809100  |
| 12 | 23401.10 | 24069.41 | 102855.91 | 9.3692363 | 9.3814655  |
| 13 | 23429.38 | 24100.19 | 102863.12 | 9.3697608 | 9.3820205  |
| 14 | 23457.66 | 24130.97 | 102870.34 | 9.3702847 | 9.3825748  |
| 15 | 23485.94 | 24161.76 | 102877.57 | 9.3708079 | 9.3831285  |
| 16 | 23514.21 | 24192.55 | 102884.81 | 9.3713304 | 9.3836816  |
| 17 | 23542.48 | 24223.34 | 102892.06 | 9.3718523 | 9.3842340  |
| 18 | 23570.75 | 24254.14 | 102899.32 | 9.3723735 | 9.3847858  |
| 19 | 23699.02 | 24284.94 | 102906.58 | 9.3728940 | 9.3853370  |
| 20 | 23627.29 | 24315.75 | 102913.85 | 9.3734139 | 9.3858876  |
| 21 | 23655.55 | 24346.56 | 102921.13 | 9.3739331 | 9.3864376  |
| 22 | 23683.81 | 24377.37 | 102928.42 | 9.3744517 | 9.3869869  |
| 23 | 23712.07 | 24408.19 | 102935.72 | 9.3749696 | 9.3875356  |
| 24 | 23740.33 | 24439.01 | 102943.03 | 9.3754868 | 9.3880837  |
| 25 | 23768.59 | 24469.84 | 102950.35 | 9.3760034 | 9.3886312  |
| 26 | 23796.84 | 24500.67 | 102957.68 | 9.3765194 | 9.3891781  |
| 27 | 23825.10 | 24531.51 | 102965.02 | 9.3770347 | 9.3897244  |
| 28 | 23853.35 | 24562.35 | 102972.37 | 9.3775493 | 9.3902700  |
| 29 | 23881.59 | 24593.20 | 102979.73 | 9.3780633 | 9.3908151  |
| 30 | 23909.84 | 24624.05 | 102987.10 | 9.3785767 | 9.3913595  |
| 31 | 23938.08 | 24654.91 | 102994.48 | 9.3790894 | 9.3919034  |
| 32 | 23966.33 | 24685.77 | 103001.87 | 9.3796015 | 9.3924466  |
| 33 | 23994.57 | 24716.63 | 103009.27 | 9.3801129 | 9.3929893  |
| 34 | 24022.80 | 24747.50 | 103016.68 | 9.3806237 | 9.3935313  |
| 35 | 24051.04 | 24778.37 | 103024.10 | 9.3811339 | 9.3940727  |
| 36 | 24079.27 | 24809.25 | 103031.53 | 9.3816434 | 9.3946136  |
| 37 | 24107.51 | 24840.13 | 103038.97 | 9.3821523 | 9.3951538  |
| 38 | 24135.74 | 24871.02 | 103046.42 | 9.3826605 | 9.3956935  |
| 39 | 24163.96 | 24901.91 | 103053.88 | 9.3831682 | 9.3962326  |
| 40 | 24192.19 | 24932.80 | 103061.35 | 9.3836752 | 9.3967711  |

# 76 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 97236.99 | 416529.98 | 428365.76 | 9.9878315 | 10.6196463 |
| 29     | 97230.19 | 415996.85 | 427847.38 | 9.9878012 | 10.6190900 |
| 28     | 97223.39 | 415465.01 | 427330.29 | 9.9877708 | 10.6185345 |
| 27     | 97216.58 | 414934.46 | 426814.49 | 9.9877404 | 10.6179795 |
| 26     | 97209.76 | 414405.19 | 426299.96 | 9.9877099 | 10.6174252 |
| 25     | 97202.93 | 413877.19 | 425786.71 | 9.9876794 | 10.6168715 |
| 24     | 97196.09 | 413350.46 | 425274.74 | 9.9876488 | 10.6163184 |
| 23     | 97189.25 | 412824.99 | 424764.02 | 9.9876183 | 10.6157660 |
| 22     | 97182.40 | 412300.79 | 424254.57 | 9.9875876 | 10.6152142 |
| 21     | 97175.54 | 411777.84 | 423746.37 | 9.9875570 | 10.6146630 |
| 20     | 97168.67 | 411256.14 | 423239.43 | 9.9875263 | 10.6141124 |
| 19     | 97161.79 | 410735.69 | 422733.73 | 9.9874955 | 10.6135624 |
| 18     | 97154.91 | 410216.49 | 422229.28 | 9.9874648 | 10.6130131 |
| 17     | 97148.02 | 409698.52 | 421726.06 | 9.9874339 | 10.6124664 |
| 16     | 97141.12 | 409181.78 | 421224.08 | 9.9874031 | 10.6119163 |
| 15     | 97134.21 | 408666.27 | 420723.33 | 9.9873722 | 10.6113688 |
| 14     | 97127.29 | 408151.99 | 420223.80 | 9.9873413 | 10.6108219 |
| 13     | 97120.36 | 407638.92 | 419725.49 | 9.9873103 | 10.6102756 |
| 12     | 97113.43 | 407127.07 | 419228.40 | 9.9872793 | 10.6097300 |
| 11     | 97106.49 | 406616.43 | 418732.52 | 9.9872482 | 10.6091849 |
| 10     | 97099.54 | 406107.00 | 418237.85 | 9.9872171 | 10.6086405 |
| 9      | 97092.58 | 405598.77 | 417744.38 | 9.9871860 | 10.6080966 |
| 8      | 97085.61 | 405091.74 | 417252.10 | 9.9871549 | 10.6075534 |
| 7      | 97078.63 | 404585.90 | 416761.02 | 9.9871236 | 10.6070107 |
| 6      | 97071.65 | 404081.25 | 416271.14 | 9.9870924 | 10.6064687 |
| 5      | 97064.66 | 403577.79 | 415782.43 | 9.9870611 | 10.6059273 |
| 4      | 97057.66 | 403075.50 | 415294.91 | 9.9870298 | 10.6053864 |
| 3      | 97050.65 | 402574.40 | 414808.56 | 9.9869984 | 10.6048462 |
| 2      | 97043.63 | 402074.46 | 414323.39 | 9.9869670 | 10.6043065 |
| 1      | 97036.60 | 401575.70 | 413839.39 | 9.9869356 | 10.6037674 |
| 0      | 97029.57 | 401078.09 | 413356.55 | 9.9869041 | 10.6032289 |

# 14 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log Tang. |
|--------|----------|----------|-----------|-----------|-----------|
| 0      | 24192.19 | 24932.80 | 103061.35 | 9.3836752 | 9.3967711 |
| 1      | 24220.41 | 24963.70 | 103068.83 | 9.3841815 | 9.3973089 |
| 2      | 24248.63 | 24994.60 | 103076.32 | 9.3846873 | 9.3978463 |
| 3      | 24276.85 | 25025.51 | 103083.82 | 9.3851924 | 9.3983830 |
| 4      | 24305.07 | 25056.42 | 103091.33 | 9.3856969 | 9.3989191 |
| 5      | 24333.29 | 25087.34 | 103098.85 | 9.3862008 | 9.3994547 |
| 6      | 24361.50 | 25118.26 | 103106.38 | 9.3867040 | 9.3999896 |
| 7      | 24389.71 | 25149.19 | 103113.92 | 9.3872067 | 9.4005240 |
| 8      | 24417.92 | 25180.12 | 103121.47 | 9.3877087 | 9.4010578 |
| 9      | 24446.13 | 25211.06 | 103129.03 | 9.3882101 | 9.4015910 |
| 10     | 24474.33 | 25242.00 | 103136.60 | 9.3887109 | 9.4021237 |
| 11     | 24502.54 | 25272.94 | 103144.18 | 9.3892111 | 9.4026558 |
| 12     | 24530.74 | 25303.89 | 103151.77 | 9.3897106 | 9.4031873 |
| 13     | 24558.94 | 25334.84 | 103159.36 | 9.3902096 | 9.4037182 |
| 14     | 24587.13 | 25365.80 | 103166.97 | 9.3907079 | 9.4042486 |
| 15     | 24615.33 | 25396.76 | 103174.59 | 9.3912057 | 9.4047784 |
| 16     | 24643.52 | 25427.73 | 103182.22 | 9.3917028 | 9.4053076 |
| 17     | 24671.71 | 25458.70 | 103189.85 | 9.3921993 | 9.4058363 |
| 18     | 24699.90 | 25489.68 | 103197.50 | 9.3926952 | 9.4063644 |
| 19     | 24728.09 | 25520.66 | 103205.16 | 9.3931905 | 9.4068919 |
| 20     | 24756.27 | 25551.65 | 103212.82 | 9.3936852 | 9.4074189 |
| 21     | 24784.45 | 25582.64 | 103220.50 | 9.3941794 | 9.4079453 |
| 22     | 24812.63 | 25613.63 | 103228.18 | 9.3946729 | 9.4084712 |
| 23     | 24840.81 | 25644.63 | 103235.88 | 9.3951658 | 9.4089965 |
| 24     | 24868.99 | 25675.63 | 103243.59 | 9.3956581 | 9.4095212 |
| 25     | 24897.16 | 25706.64 | 103251.30 | 9.3961499 | 9.4100454 |
| 26     | 24925.33 | 25737.66 | 103259.03 | 9.3966410 | 9.4105690 |
| 27     | 24953.50 | 25768.68 | 103266.76 | 9.3971315 | 9.4110921 |
| 28     | 24981.67 | 25799.70 | 103274.51 | 9.3976215 | 9.4116146 |
| 29     | 25009.84 | 25830.73 | 103282.27 | 9.3981109 | 9.4121366 |
| 30     | 25038.00 | 25861.76 | 103290.03 | 9.3985996 | 9.4126581 |

## 75 Grad.

| Minut | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|-------|----------|-----------|-----------|-----------|------------|
| 60    | 97029.57 | 401078.09 | 413356.55 | 9.9869041 | 10.6032289 |
| 59    | 97022.53 | 400581.65 | 412874.87 | 9.9868726 | 10.6026911 |
| 58    | 97015.48 | 400080.36 | 412394.35 | 9.9868410 | 10.6021537 |
| 57    | 97008.42 | 399592.23 | 411914.98 | 9.9868094 | 10.6016170 |
| 56    | 97001.35 | 399099.24 | 411436.75 | 9.9867778 | 10.6010809 |
| 55    | 96994.28 | 398607.39 | 410959.67 | 9.9867461 | 10.6005453 |
| 54    | 96987.20 | 398116.69 | 410483.74 | 9.9867144 | 10.6000104 |
| 53    | 96980.11 | 397627.12 | 410008.93 | 9.9866827 | 10.5994760 |
| 52    | 96973.01 | 397138.68 | 409535.26 | 9.9866509 | 10.5989422 |
| 51    | 96965.90 | 396651.37 | 409062.72 | 9.9866191 | 10.5984090 |
| 50    | 96958.79 | 396165.18 | 408591.30 | 9.9865872 | 10.5978763 |
| 49    | 96951.67 | 395680.11 | 408121.00 | 9.9865553 | 10.5973442 |
| 48    | 96944.54 | 395196.15 | 407651.81 | 9.9865233 | 10.5968127 |
| 47    | 96937.40 | 394713.31 | 407183.74 | 9.9864913 | 10.5962818 |
| 46    | 96930.25 | 394231.57 | 406716.77 | 9.9864593 | 10.5957514 |
| 45    | 96923.09 | 393750.94 | 406250.91 | 9.9864273 | 10.5952216 |
| 44    | 96915.92 | 393271.41 | 405786.15 | 9.9863952 | 10.5946924 |
| 43    | 96908.75 | 392792.97 | 405322.49 | 9.9863630 | 10.5941637 |
| 42    | 96901.57 | 392315.63 | 404859.92 | 9.9863308 | 10.5936356 |
| 41    | 96894.38 | 391839.37 | 404398.44 | 9.9862986 | 10.5931081 |
| 40    | 96887.18 | 391364.20 | 403938.04 | 9.9862663 | 10.5925811 |
| 39    | 96879.98 | 390890.11 | 403478.72 | 9.9862340 | 10.5920547 |
| 38    | 96872.77 | 390417.10 | 403020.48 | 9.9862017 | 10.5915288 |
| 37    | 96865.55 | 389945.16 | 402563.32 | 9.9861693 | 10.5910035 |
| 36    | 96858.32 | 389474.29 | 402107.22 | 9.9861369 | 10.5904788 |
| 35    | 96851.08 | 389004.48 | 401652.19 | 9.9861045 | 10.5899546 |
| 34    | 96843.83 | 388535.74 | 401198.23 | 9.9860720 | 10.5894310 |
| 33    | 96836.57 | 388068.05 | 400745.32 | 9.9860394 | 10.5889079 |
| 32    | 96829.31 | 387601.42 | 400293.47 | 9.9860069 | 10.5883854 |
| 31    | 96822.04 | 387135.84 | 399842.67 | 9.9859742 | 10.5878634 |
| 30    | 96814.76 | 386671.31 | 399392.92 | 9.9859416 | 10.5873419 |



# 14 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 25038.00 | 25861.76 | 103290.03 | 9.3985996 | 9.4126581  |
| 31     | 25066.16 | 25892.80 | 103297.81 | 9.3990878 | 9.4131789  |
| 32     | 25094.32 | 25923.84 | 103305.59 | 9.3995754 | 9.4136993  |
| 33     | 25122.48 | 25954.88 | 103313.39 | 9.4000625 | 9.4142191  |
| 34     | 25150.63 | 25985.93 | 103321.19 | 9.4005489 | 9.4147383  |
| 35     | 25178.79 | 26016.99 | 103329.01 | 9.4010348 | 9.4152570  |
| 36     | 25206.94 | 26048.05 | 103336.83 | 9.4015201 | 9.4157752  |
| 37     | 25235.08 | 26079.11 | 103344.97 | 9.4020048 | 9.4162928  |
| 38     | 25263.23 | 26110.18 | 103352.51 | 9.4024889 | 9.4168099  |
| 39     | 25291.37 | 26141.26 | 103360.37 | 9.4029734 | 9.4173265  |
| 40     | 25319.52 | 26172.34 | 103368.23 | 9.4034554 | 9.4178425  |
| 41     | 25347.66 | 26203.42 | 103376.11 | 9.4039378 | 9.4183580  |
| 42     | 25375.79 | 26234.51 | 103383.99 | 9.4044196 | 9.4188729  |
| 43     | 25403.93 | 26265.60 | 103391.88 | 9.4049009 | 9.4193874  |
| 44     | 25432.06 | 26296.70 | 103399.79 | 9.4053816 | 9.4199013  |
| 45     | 25460.19 | 26327.80 | 103407.70 | 9.4058617 | 9.4204146  |
| 46     | 25488.32 | 26358.91 | 103415.63 | 9.4063413 | 9.4209275  |
| 47     | 25516.45 | 26390.02 | 103423.56 | 9.4068203 | 9.4214398  |
| 48     | 25544.58 | 26421.14 | 103431.51 | 9.4072987 | 9.4219515  |
| 49     | 25572.70 | 26452.26 | 103439.46 | 9.4077766 | 9.4224628  |
| 50     | 25600.82 | 26483.39 | 103447.43 | 9.4082539 | 9.4229735  |
| 51     | 25628.94 | 26514.52 | 103455.40 | 9.4087306 | 9.4234838  |
| 52     | 25657.05 | 26545.66 | 103463.38 | 9.4092068 | 9.4239935  |
| 53     | 25685.17 | 26576.80 | 103471.38 | 9.4096824 | 9.4245026  |
| 54     | 25713.28 | 26607.94 | 103479.38 | 9.4101575 | 9.4250113  |
| 55     | 25741.39 | 26639.09 | 103487.40 | 9.4106320 | 9.4255194  |
| 56     | 25769.50 | 26670.25 | 103495.42 | 9.4111059 | 9.4260271  |
| 57     | 25797.60 | 26701.41 | 103503.46 | 9.4115793 | 9.4265342  |
| 58     | 25825.70 | 26732.57 | 103511.50 | 9.4120522 | 9.4270408  |
| 59     | 25853.81 | 26763.74 | 103519.55 | 9.4125245 | 9.4275469  |
| 60     | 25881.90 | 26794.92 | 103527.62 | 9.4129962 | 9.4280525  |

# 75 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 96814.76 | 386671.31 | 399392.92 | 9.9859416 | 10.5873419 |
| 29     | 96807.47 | 386207.82 | 398944.21 | 9.9859089 | 10.5868211 |
| 28     | 96800.18 | 385745.37 | 398496.54 | 9.9858762 | 10.5863007 |
| 27     | 96792.88 | 385283.96 | 398049.91 | 9.9858434 | 10.5857809 |
| 26     | 96785.57 | 384823.58 | 397604.31 | 9.9858106 | 10.5852617 |
| 25     | 96778.25 | 384364.24 | 397159.75 | 9.9857777 | 10.5847430 |
| 24     | 96770.92 | 383905.91 | 396716.21 | 9.9857449 | 10.5842248 |
| 23     | 96763.58 | 383448.61 | 396273.69 | 9.9857119 | 10.5837072 |
| 22     | 96756.23 | 382992.33 | 395832.19 | 9.9856790 | 10.5831901 |
| 21     | 96748.88 | 382537.07 | 395391.71 | 9.9856460 | 10.5826735 |
| 20     | 96741.52 | 382082.81 | 394952.24 | 9.9856129 | 10.5821575 |
| 19     | 96734.15 | 381629.57 | 394513.79 | 9.9855798 | 10.5816420 |
| 18     | 96726.77 | 381177.33 | 394076.33 | 9.9855467 | 10.5811271 |
| 17     | 96719.38 | 380726.06 | 393639.88 | 9.9855135 | 10.5806126 |
| 16     | 96711.99 | 380275.85 | 393204.43 | 9.9854803 | 10.5800987 |
| 15     | 96704.59 | 379826.61 | 392769.97 | 9.9854471 | 10.5795854 |
| 14     | 96697.18 | 379378.35 | 392336.51 | 9.9854138 | 10.5790725 |
| 13     | 96689.76 | 378931.09 | 391904.03 | 9.9853805 | 10.5785602 |
| 12     | 96682.33 | 378484.81 | 391472.54 | 9.9853471 | 10.5780485 |
| 11     | 96674.90 | 378039.51 | 391042.03 | 9.9853138 | 10.5775372 |
| 10     | 96667.46 | 377595.19 | 390612.50 | 9.9852803 | 10.5770265 |
| 9      | 96660.01 | 377151.85 | 390183.95 | 9.9852468 | 10.5765162 |
| 8      | 96652.55 | 376709.47 | 389756.37 | 9.9852133 | 10.5760065 |
| 7      | 96645.08 | 376268.07 | 389329.76 | 9.9851798 | 10.5754974 |
| 6      | 96637.60 | 375827.63 | 388904.11 | 9.9851462 | 10.5749887 |
| 5      | 96630.12 | 375388.15 | 388479.43 | 9.9851125 | 10.5744806 |
| 4      | 96622.63 | 374949.63 | 388055.70 | 9.9850789 | 10.5739729 |
| 3      | 96615.13 | 374512.07 | 387632.93 | 9.9850452 | 10.5734658 |
| 2      | 96607.62 | 374075.46 | 387211.12 | 9.9850114 | 10.5729592 |
| 1      | 96600.10 | 373639.80 | 386790.25 | 9.9849776 | 10.5724531 |
| 0      | 96592.58 | 373205.08 | 386370.33 | 9.9849438 | 10.5719475 |

# 15 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 25881.90 | 26794.92 | 103527.62 | 9.4129962 | 9.4280525  |
| 1      | 25910.00 | 26826.10 | 103535.69 | 9.4134674 | 9.4285575  |
| 2      | 25938.10 | 26857.28 | 103543.78 | 9.4139381 | 9.4290621  |
| 3      | 25966.19 | 26888.47 | 103551.87 | 9.4144082 | 9.4295661  |
| 4      | 25994.28 | 26919.67 | 103559.98 | 9.4148778 | 9.4300697  |
| 5      | 26022.37 | 26950.87 | 103568.09 | 9.4153468 | 9.4305727  |
| 6      | 26050.45 | 26982.07 | 103576.21 | 9.4158152 | 9.4310753  |
| 7      | 26078.53 | 27013.28 | 103584.35 | 9.4162832 | 9.4315773  |
| 8      | 26106.61 | 27044.49 | 103592.49 | 9.4167506 | 9.4320789  |
| 9      | 26134.66 | 27075.71 | 103600.65 | 9.4172174 | 9.4325799  |
| 10     | 26162.77 | 27106.93 | 103608.81 | 9.4176837 | 9.4330804  |
| 11     | 26190.85 | 27138.16 | 103616.99 | 9.4181495 | 9.4335805  |
| 12     | 26218.92 | 27169.40 | 103625.17 | 9.4186148 | 9.4340800  |
| 13     | 26246.99 | 27200.64 | 103633.37 | 9.4190795 | 9.4345791  |
| 14     | 26275.06 | 27231.88 | 103641.57 | 9.4195436 | 9.4350776  |
| 15     | 26303.12 | 27263.13 | 103649.79 | 9.4200073 | 9.4355757  |
| 16     | 26331.18 | 27294.38 | 103658.01 | 9.4204704 | 9.4360733  |
| 17     | 26359.24 | 27325.64 | 103666.25 | 9.4209330 | 9.4365704  |
| 18     | 26387.30 | 27356.90 | 103674.49 | 9.4213950 | 9.4370670  |
| 19     | 26415.36 | 27388.17 | 103682.75 | 9.4218566 | 9.4375631  |
| 20     | 26443.42 | 27419.44 | 103691.01 | 9.4223176 | 9.4380587  |
| 21     | 26471.47 | 27450.72 | 103699.29 | 9.4227780 | 9.4385538  |
| 22     | 26499.52 | 27482.01 | 103707.57 | 9.4232380 | 9.4390485  |
| 23     | 26527.57 | 27513.30 | 103715.87 | 9.4236974 | 9.4395426  |
| 24     | 26555.61 | 27544.59 | 103724.17 | 9.4241563 | 9.4400363  |
| 25     | 26583.65 | 27575.89 | 103732.49 | 9.4246147 | 9.4405295  |
| 26     | 26611.69 | 27607.19 | 103740.82 | 9.4250726 | 9.4410222  |
| 27     | 26639.73 | 27638.50 | 103749.15 | 9.4255299 | 9.4415145  |
| 28     | 26667.77 | 27669.81 | 103757.50 | 9.4259867 | 9.4420062  |
| 29     | 26695.81 | 27701.13 | 103765.85 | 9.4264430 | 9.4424975  |
| 30     | 26723.84 | 27732.45 | 103774.22 | 9.4268988 | 9.4429883  |

## 74 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 96592.58 | 373205.08 | 386370.33 | 9.9849438 | 10.5719475 |
| 59     | 96585.05 | 372771.31 | 385951.35 | 9.9849099 | 10.5714425 |
| 58     | 96577.51 | 372338.47 | 385533.32 | 9.9848760 | 10.5709379 |
| 57     | 96569.96 | 371906.58 | 385116.22 | 9.9848420 | 10.5704339 |
| 56     | 96562.40 | 371475.61 | 384700.05 | 9.9848081 | 10.5699303 |
| 55     | 96554.83 | 371045.58 | 384284.82 | 9.9847740 | 10.5694273 |
| 54     | 96547.26 | 370616.48 | 383870.51 | 9.9847400 | 10.5689247 |
| 53     | 96539.68 | 370188.30 | 383457.13 | 9.9847059 | 10.5684227 |
| 52     | 96532.09 | 369761.03 | 383044.67 | 9.9846717 | 10.5679211 |
| 51     | 96524.49 | 369334.69 | 382633.13 | 9.9846375 | 10.5674201 |
| 50     | 96516.88 | 368909.27 | 382222.51 | 9.9846033 | 10.5669196 |
| 49     | 96509.27 | 368484.75 | 381812.80 | 9.9845690 | 10.5664195 |
| 48     | 96501.65 | 368061.15 | 381403.99 | 9.9845347 | 10.5659200 |
| 47     | 96494.02 | 367638.45 | 380996.10 | 9.9845004 | 10.5654209 |
| 46     | 96486.38 | 367216.65 | 380589.11 | 9.9844660 | 10.5649224 |
| 45     | 96478.73 | 366795.75 | 380183.01 | 9.9844316 | 10.5644243 |
| 44     | 96471.07 | 366375.75 | 379777.82 | 9.9843971 | 10.5639267 |
| 43     | 96463.41 | 365956.65 | 379373.52 | 9.9843626 | 10.5634296 |
| 42     | 96455.74 | 365538.44 | 378970.11 | 9.9843281 | 10.5629330 |
| 41     | 96448.06 | 365121.11 | 378567.60 | 9.9842935 | 10.5624369 |
| 40     | 96440.37 | 364704.67 | 378165.96 | 9.9842589 | 10.5619413 |
| 39     | 96432.67 | 364289.11 | 377765.22 | 9.9842242 | 10.5614462 |
| 38     | 96424.97 | 363874.44 | 377365.35 | 9.9841895 | 10.5609515 |
| 37     | 96417.26 | 363460.64 | 376966.36 | 9.9841548 | 10.5604574 |
| 36     | 96409.54 | 363047.71 | 376568.24 | 9.9841200 | 10.5599637 |
| 35     | 96401.81 | 362635.66 | 376171.00 | 9.9840852 | 10.5594705 |
| 34     | 96394.07 | 362224.47 | 375774.62 | 9.9840503 | 10.5589778 |
| 33     | 96386.33 | 361814.15 | 375379.11 | 9.9840154 | 10.5584855 |
| 32     | 96378.58 | 361404.69 | 374984.47 | 9.9839805 | 10.5579938 |
| 31     | 96370.82 | 360996.09 | 374590.68 | 9.9839455 | 10.5575025 |
| 30     | 96363.05 | 360588.35 | 374197.75 | 9.9839105 | 10.5570117 |

# 15 Grad.

| Minur. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 26723.84 | 27732.45 | 103774.22 | 9.4268988 | 9.4429883  |
| 31     | 26751.87 | 27763.78 | 103782.60 | 9.4273541 | 9.4434786  |
| 32     | 26779.89 | 27795.12 | 103790.98 | 9.4278089 | 9.4439685  |
| 33     | 26807.92 | 27826.46 | 103799.38 | 9.4282631 | 9.4444579  |
| 34     | 26835.94 | 27857.80 | 103807.79 | 9.4287169 | 9.4449468  |
| 35     | 26863.96 | 27889.15 | 103816.21 | 9.4291701 | 9.4454352  |
| 36     | 26891.98 | 27920.50 | 103824.63 | 9.4296228 | 9.4459232  |
| 37     | 26920.00 | 27951.86 | 103833.07 | 9.4300750 | 9.4464107  |
| 38     | 26948.01 | 27983.22 | 103841.52 | 9.4305267 | 9.4468978  |
| 39     | 26976.02 | 28014.59 | 103849.98 | 9.4309779 | 9.4473843  |
| 40     | 27004.03 | 28045.97 | 103858.44 | 9.4314286 | 9.4478704  |
| 41     | 27032.02 | 28077.35 | 103866.92 | 9.4318788 | 9.4483561  |
| 42     | 27060.04 | 28108.73 | 103875.41 | 9.4323285 | 9.4488413  |
| 43     | 27088.05 | 28140.12 | 103883.91 | 9.4327777 | 9.4493260  |
| 44     | 27116.05 | 28171.52 | 103892.42 | 9.4332264 | 9.4498102  |
| 45     | 27144.04 | 28202.92 | 103900.94 | 9.4336746 | 9.4502940  |
| 46     | 27172.04 | 28234.32 | 103909.47 | 9.4341223 | 9.4507774  |
| 47     | 27200.03 | 28265.73 | 103918.00 | 9.4345694 | 9.4512602  |
| 48     | 27228.02 | 28297.15 | 103926.55 | 9.4350161 | 9.4517427  |
| 49     | 27256.01 | 28328.57 | 103935.11 | 9.4354623 | 9.4522246  |
| 50     | 27284.00 | 28359.99 | 103943.68 | 9.4359080 | 9.4527061  |
| 51     | 27311.98 | 28391.42 | 103952.26 | 9.4363532 | 9.4531872  |
| 52     | 27339.96 | 28422.86 | 103960.85 | 9.4367980 | 9.4536678  |
| 53     | 27367.94 | 28454.30 | 103969.45 | 9.4372422 | 9.4541479  |
| 54     | 27395.92 | 28485.75 | 103978.06 | 9.4376859 | 9.4546276  |
| 55     | 27423.90 | 28517.20 | 103986.69 | 9.4381292 | 9.4551069  |
| 56     | 27451.87 | 28548.66 | 103995.32 | 9.4385719 | 9.4555857  |
| 57     | 27479.84 | 28580.12 | 104003.96 | 9.4390142 | 9.4560641  |
| 58     | 27507.81 | 28611.59 | 104012.61 | 9.4394560 | 9.4565420  |
| 59     | 27535.78 | 28643.06 | 104021.27 | 9.4398973 | 9.4570194  |
| 60     | 27563.74 | 28674.54 | 104029.94 | 9.4403381 | 9.4574964  |

## 74 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 96363.05 | 360588.35 | 374197.75 | 9.9839105 | 10.5570117 |
| 29     | 96355.27 | 360181.46 | 373805.68 | 9.9838755 | 10.5565214 |
| 28     | 96347.48 | 359775.43 | 373414.46 | 9.9838404 | 10.5560315 |
| 27     | 96339.69 | 359370.24 | 373024.09 | 9.9838052 | 10.5555421 |
| 26     | 96331.89 | 358965.90 | 372634.57 | 9.9837701 | 10.5550532 |
| 25     | 96324.08 | 358562.41 | 372245.89 | 9.9837348 | 10.5545648 |
| 24     | 96316.26 | 358159.75 | 371858.05 | 9.9836996 | 10.5540768 |
| 23     | 96308.43 | 357757.94 | 371471.05 | 9.9836643 | 10.5535893 |
| 22     | 96300.59 | 357356.96 | 371084.89 | 9.9836290 | 10.5531022 |
| 21     | 96292.75 | 356956.81 | 370699.56 | 9.9835936 | 10.5526157 |
| 20     | 96284.90 | 356557.49 | 370315.06 | 9.9835582 | 10.5521296 |
| 19     | 96277.04 | 356159.00 | 369931.39 | 9.9835227 | 10.5516439 |
| 18     | 96269.17 | 355761.33 | 369548.54 | 9.9834872 | 10.5511587 |
| 17     | 96261.30 | 355364.49 | 369166.52 | 9.9834517 | 10.5506740 |
| 16     | 96253.42 | 354968.46 | 368785.32 | 9.9834161 | 10.5501898 |
| 15     | 96245.53 | 354573.25 | 368404.93 | 9.9833805 | 10.5497060 |
| 14     | 96237.63 | 354178.86 | 368025.36 | 9.9833449 | 10.5492226 |
| 13     | 96229.72 | 353785.28 | 367646.60 | 9.9833092 | 10.5487398 |
| 12     | 96221.80 | 353392.51 | 367268.65 | 9.9832735 | 10.5482573 |
| 11     | 96213.87 | 353000.54 | 366891.51 | 9.9832377 | 10.5477754 |
| 10     | 96205.94 | 352609.38 | 366515.18 | 9.9832019 | 10.5472939 |
| 9      | 96198.00 | 352219.02 | 366139.64 | 9.9831661 | 10.5468128 |
| 8      | 96190.05 | 351829.46 | 365764.91 | 9.9831302 | 10.5463322 |
| 7      | 96182.09 | 351440.70 | 365390.97 | 9.9830942 | 10.5458521 |
| 6      | 96174.13 | 351052.73 | 365017.83 | 9.9830583 | 10.5453724 |
| 5      | 96166.16 | 350665.55 | 364645.48 | 9.9830223 | 10.5448931 |
| 4      | 96158.18 | 350279.16 | 364273.92 | 9.9829862 | 10.5444143 |
| 3      | 96150.19 | 349893.56 | 363903.15 | 9.9829501 | 10.5439359 |
| 2      | 96142.19 | 349508.74 | 363533.16 | 9.9829140 | 10.5434580 |
| 1      | 96134.18 | 349124.70 | 363163.95 | 9.9828778 | 10.5429806 |
| 0      | 96126.17 | 348741.44 | 362795.53 | 9.9828416 | 10.5425036 |

## 16 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 27563.74 | 28674.54 | 104029.94 | 9.4403381 | 9.4574964  |
| 1      | 27591.70 | 28706.02 | 104038.63 | 9.4407784 | 9.4579730  |
| 2      | 27619.65 | 28737.51 | 104047.32 | 9.4412182 | 9.4584491  |
| 3      | 27647.61 | 28769.00 | 104056.02 | 9.4416576 | 9.4589248  |
| 4      | 27675.56 | 28800.50 | 104064.73 | 9.4420965 | 9.4594001  |
| 5      | 27703.52 | 28832.01 | 104073.46 | 9.4425349 | 9.4598749  |
| 6      | 27731.47 | 28863.52 | 104082.19 | 9.4429728 | 9.4603492  |
| 7      | 27759.41 | 28895.03 | 104090.94 | 9.4434103 | 9.4608232  |
| 8      | 27787.36 | 28926.55 | 104099.69 | 9.4438472 | 9.4612967  |
| 9      | 27815.30 | 28958.08 | 104108.45 | 9.4442837 | 9.4617697  |
| 10     | 27843.24 | 28989.61 | 104117.23 | 9.4447197 | 9.4622423  |
| 11     | 27871.18 | 29021.14 | 104126.01 | 9.4451553 | 9.4627145  |
| 12     | 27899.11 | 29052.68 | 104134.81 | 9.4455904 | 9.4631863  |
| 13     | 27927.04 | 29084.23 | 104143.62 | 9.4460250 | 9.4636576  |
| 14     | 27954.97 | 29115.78 | 104152.43 | 9.4464591 | 9.4641285  |
| 15     | 27982.90 | 29147.34 | 104161.26 | 9.4468927 | 9.4645990  |
| 16     | 28010.83 | 29178.90 | 104170.09 | 9.4473259 | 9.4650690  |
| 17     | 28038.75 | 29210.47 | 104178.94 | 9.4477586 | 9.4655386  |
| 18     | 28066.67 | 29242.05 | 104187.80 | 9.4481909 | 9.4660078  |
| 19     | 28094.59 | 29273.63 | 104196.67 | 9.4486227 | 9.4664765  |
| 20     | 28122.51 | 29305.21 | 104205.54 | 9.4490540 | 9.4669448  |
| 21     | 28150.42 | 29336.80 | 104214.43 | 9.4494849 | 9.4674127  |
| 22     | 28178.33 | 29368.39 | 104223.33 | 9.4499153 | 9.4678802  |
| 23     | 28206.24 | 29399.99 | 104232.24 | 9.4503452 | 9.4683473  |
| 24     | 28234.15 | 29431.60 | 104241.16 | 9.4507747 | 9.4688139  |
| 25     | 28262.05 | 29463.21 | 104250.09 | 9.4512037 | 9.4692801  |
| 26     | 28289.95 | 29494.83 | 104259.03 | 9.4516322 | 9.4697459  |
| 27     | 28317.85 | 29526.45 | 104267.98 | 9.4520603 | 9.4702112  |
| 28     | 28345.75 | 29558.08 | 104276.94 | 9.4524879 | 9.4706762  |
| 29     | 28373.64 | 29589.71 | 104285.91 | 9.4529151 | 9.4711407  |
| 30     | 28401.53 | 29621.35 | 104294.89 | 9.4533418 | 9.4716048  |

# 73 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 96126.17 | 348741.44 | 362795.53 | 9.9828416 | 10.5425036 |
| 59     | 96118.15 | 348358.96 | 362427.88 | 9.9828054 | 10.5420270 |
| 58     | 96110.12 | 347977.26 | 362061.01 | 9.9827691 | 10.5415509 |
| 57     | 96102.08 | 347596.32 | 361694.90 | 9.9827328 | 10.5410752 |
| 56     | 96094.03 | 347216.16 | 361329.57 | 9.9826964 | 10.5405999 |
| 55     | 96085.98 | 346836.76 | 360965.01 | 9.9826600 | 10.5401251 |
| 54     | 96077.92 | 346458.13 | 360601.21 | 9.9826236 | 10.5396508 |
| 53     | 96069.86 | 346080.26 | 360238.18 | 9.9825871 | 10.5391768 |
| 52     | 96061.77 | 345703.15 | 359875.90 | 9.9825506 | 10.5387033 |
| 51     | 96053.68 | 345326.79 | 359514.39 | 9.9825140 | 10.5382303 |
| 50     | 96045.58 | 344951.20 | 359153.63 | 9.9824774 | 10.5377577 |
| 49     | 96037.48 | 344576.35 | 358793.62 | 9.9824408 | 10.5372855 |
| 48     | 96029.37 | 344202.26 | 358434.37 | 9.9824041 | 10.5368137 |
| 47     | 96021.25 | 343828.91 | 358075.86 | 9.9823674 | 10.5363424 |
| 46     | 96013.12 | 343456.31 | 357718.10 | 9.9823306 | 10.5358715 |
| 45     | 96004.98 | 343084.46 | 357361.08 | 9.9822938 | 10.5354010 |
| 44     | 95996.84 | 342713.34 | 357004.81 | 9.9822569 | 10.5349310 |
| 43     | 95988.69 | 342342.97 | 356649.28 | 9.9822201 | 10.5344614 |
| 42     | 95980.53 | 341973.33 | 356294.48 | 9.9821831 | 10.5339922 |
| 41     | 95972.36 | 341604.43 | 355940.42 | 9.9821462 | 10.5335235 |
| 40     | 95964.18 | 341236.26 | 355587.10 | 9.9821092 | 10.5330552 |
| 39     | 95956.00 | 340868.82 | 355234.50 | 9.9820721 | 10.5325873 |
| 38     | 95947.81 | 340502.10 | 354882.63 | 9.9820351 | 10.5321198 |
| 37     | 95939.61 | 340136.12 | 354531.49 | 9.9819979 | 10.5316527 |
| 36     | 95931.40 | 339770.85 | 354181.07 | 9.9819608 | 10.5311861 |
| 35     | 95923.18 | 339406.31 | 353831.38 | 9.9819236 | 10.5307199 |
| 34     | 95914.95 | 339042.49 | 353482.40 | 9.9818863 | 10.5302541 |
| 33     | 95906.72 | 338679.38 | 353134.14 | 9.9818490 | 10.5297888 |
| 32     | 95898.48 | 338316.99 | 352786.60 | 9.9818117 | 10.5293238 |
| 31     | 95890.23 | 337955.31 | 352439.77 | 9.9817744 | 10.5288593 |
| 30     | 95881.97 | 337594.34 | 352093.65 | 9.9817370 | 10.5283951 |



# 16 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 28401.53 | 29621.35 | 104294.89 | 9.4533418 | 9.4716048  |
| 31     | 28429.42 | 29652.99 | 104303.88 | 9.4537681 | 9.4720685  |
| 32     | 28457.31 | 29684.64 | 104312.89 | 9.4541939 | 9.4725318  |
| 33     | 28485.20 | 29716.30 | 104321.90 | 9.4546192 | 9.4729947  |
| 34     | 28513.08 | 29747.96 | 104330.92 | 9.4550441 | 9.4734571  |
| 35     | 28540.96 | 29779.62 | 104339.95 | 9.4554686 | 9.4739192  |
| 36     | 28568.84 | 29811.29 | 104349.00 | 9.4558926 | 9.4743808  |
| 37     | 28596.71 | 29842.97 | 104358.05 | 9.4563161 | 9.4748421  |
| 38     | 28624.58 | 29874.65 | 104367.12 | 9.4567392 | 9.4753029  |
| 39     | 28652.45 | 29906.34 | 104376.19 | 9.4571618 | 9.4757633  |
| 40     | 28680.32 | 29938.03 | 104385.28 | 9.4575840 | 9.4762233  |
| 41     | 28708.19 | 29969.73 | 104394.37 | 9.4580058 | 9.4766829  |
| 42     | 28736.05 | 30001.44 | 104403.48 | 9.4584271 | 9.4771421  |
| 43     | 28763.91 | 30033.15 | 104412.59 | 9.4588480 | 9.4776009  |
| 44     | 28791.77 | 30064.86 | 104421.72 | 9.4592684 | 9.4780592  |
| 45     | 28819.63 | 30096.58 | 104430.86 | 9.4596884 | 9.4785172  |
| 46     | 28847.48 | 30128.31 | 104440.01 | 9.4601079 | 9.4789748  |
| 47     | 28875.33 | 30160.04 | 104449.17 | 9.4605270 | 9.4794319  |
| 48     | 28903.18 | 30191.78 | 104458.33 | 9.4609456 | 9.4798887  |
| 49     | 28931.03 | 30223.52 | 104467.51 | 9.4613638 | 9.4803451  |
| 50     | 28958.87 | 30255.27 | 104476.70 | 9.4617816 | 9.4808011  |
| 51     | 28986.71 | 30287.03 | 104485.90 | 9.4621989 | 9.4812566  |
| 52     | 29014.55 | 30318.79 | 104495.11 | 9.4626158 | 9.4817118  |
| 53     | 29042.39 | 30350.55 | 104504.33 | 9.4630323 | 9.4821666  |
| 54     | 29070.22 | 30382.32 | 104513.57 | 9.4634483 | 9.4826210  |
| 55     | 29098.05 | 30414.10 | 104522.81 | 9.4638639 | 9.4830750  |
| 56     | 29125.88 | 30445.88 | 104532.06 | 9.4642790 | 9.4835286  |
| 57     | 29153.71 | 30477.67 | 104541.32 | 9.4646938 | 9.4839818  |
| 58     | 29181.53 | 30509.46 | 104550.60 | 9.4651081 | 9.4844346  |
| 59     | 29209.35 | 30541.26 | 104559.88 | 9.4655219 | 9.4848870  |
| 60     | 29237.17 | 30573.07 | 104569.18 | 9.4659353 | 9.4853390  |

# 73 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 95881.97 | 337594.34 | 352093.65 | 9.9817370 | 10.5283952 |
| 29     | 95873.70 | 337234.08 | 351748.24 | 9.9816995 | 10.5279315 |
| 28     | 95865.43 | 336874.53 | 351403.54 | 9.9816620 | 10.5274682 |
| 27     | 95857.15 | 336515.68 | 351059.54 | 9.9816245 | 10.5270053 |
| 26     | 95848.86 | 336157.53 | 350716.25 | 9.9815870 | 10.5265428 |
| 25     | 95840.56 | 335800.08 | 350373.65 | 9.9815494 | 10.5260808 |
| 24     | 95832.25 | 335443.33 | 350031.75 | 9.9815117 | 10.5256192 |
| 23     | 95823.94 | 335087.28 | 349690.55 | 9.9814740 | 10.5251579 |
| 22     | 95815.62 | 334731.91 | 349350.04 | 9.9814363 | 10.5246971 |
| 21     | 95807.29 | 334377.24 | 349010.23 | 9.9813986 | 10.5242367 |
| 20     | 95798.95 | 334023.26 | 348671.10 | 9.9813608 | 10.5237767 |
| 19     | 95790.60 | 333669.97 | 348332.67 | 9.9813229 | 10.5233171 |
| 18     | 95782.25 | 333317.36 | 347994.92 | 9.9812850 | 10.5228579 |
| 17     | 95773.89 | 332965.43 | 347657.85 | 9.9812471 | 10.5223991 |
| 16     | 95765.52 | 332614.19 | 347321.46 | 9.9812091 | 10.5219408 |
| 15     | 95757.14 | 332263.62 | 346985.76 | 9.9811711 | 10.5214828 |
| 14     | 95748.75 | 331913.73 | 346650.73 | 9.9811331 | 10.5210252 |
| 13     | 95740.35 | 331564.52 | 346316.37 | 9.9810950 | 10.5205681 |
| 12     | 95731.95 | 331215.98 | 345982.69 | 9.9810569 | 10.5201113 |
| 11     | 95723.54 | 330868.11 | 345649.69 | 9.9810187 | 10.5196549 |
| 10     | 95715.12 | 330520.91 | 345317.35 | 9.9809805 | 10.5191989 |
| 9      | 95706.69 | 330174.38 | 344985.68 | 9.9809423 | 10.5187434 |
| 8      | 95698.25 | 329828.51 | 344654.67 | 9.9809040 | 10.5182882 |
| 7      | 95689.81 | 329483.30 | 344324.33 | 9.9808657 | 10.5178334 |
| 6      | 95681.36 | 329138.76 | 343994.65 | 9.9808273 | 10.5173790 |
| 5      | 95672.90 | 328794.87 | 343665.63 | 9.9807889 | 10.5169250 |
| 4      | 95664.43 | 328451.64 | 343337.27 | 9.9807505 | 10.5164714 |
| 3      | 95655.95 | 328109.07 | 343009.56 | 9.9807120 | 10.5160182 |
| 2      | 95647.47 | 327767.15 | 342682.51 | 9.9806735 | 10.5155654 |
| 1      | 95638.98 | 327425.88 | 342356.11 | 9.9806349 | 10.5151130 |
| 0      | 95630.48 | 327085.26 | 342030.36 | 9.9805963 | 10.5146610 |

# 17 Grad.

| Minute. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|---------|----------|----------|-----------|-----------|------------|
| 0       | 29237.17 | 30573.07 | 104569.18 | 9.4659353 | 9.4853390  |
| 1       | 29264.99 | 30604.88 | 104578.48 | 9.4663483 | 9.4857907  |
| 2       | 29292.80 | 30636.69 | 104587.80 | 9.4667609 | 9.4862419  |
| 3       | 29320.61 | 30668.51 | 104597.12 | 9.4671730 | 9.4866928  |
| 4       | 29348.42 | 30700.34 | 104606.46 | 9.4675848 | 9.4871433  |
| 5       | 29376.23 | 30732.18 | 104615.81 | 9.4679960 | 9.4875933  |
| 6       | 29404.03 | 30764.02 | 104625.16 | 9.4684069 | 9.4880430  |
| 7       | 29431.83 | 30795.86 | 104634.53 | 9.4688173 | 9.4884924  |
| 8       | 29459.63 | 30827.71 | 104643.91 | 9.4692273 | 9.4889413  |
| 9       | 29487.43 | 30859.57 | 104653.30 | 9.4696369 | 9.4893898  |
| 10      | 29515.22 | 30891.43 | 104662.70 | 9.4700461 | 9.4898380  |
| 11      | 29543.01 | 30923.30 | 104672.11 | 9.4704548 | 9.4902858  |
| 12      | 29570.80 | 30955.17 | 104681.53 | 9.4708631 | 9.4907332  |
| 13      | 29598.59 | 30987.05 | 104690.96 | 9.4712710 | 9.4911802  |
| 14      | 29626.38 | 31018.93 | 104700.40 | 9.4716785 | 9.4916269  |
| 15      | 29654.16 | 31050.82 | 104709.86 | 9.4720856 | 9.4920731  |
| 16      | 29681.94 | 31082.72 | 104719.32 | 9.4724922 | 9.4925190  |
| 17      | 29709.71 | 31114.62 | 104728.79 | 9.4728985 | 9.4929646  |
| 18      | 29737.49 | 31146.53 | 104738.28 | 9.4733043 | 9.4934097  |
| 19      | 29765.26 | 31178.47 | 104747.77 | 9.4737097 | 9.4938545  |
| 20      | 29793.03 | 31210.36 | 104757.28 | 9.4741146 | 9.4942988  |
| 21      | 29820.79 | 31242.29 | 104766.79 | 9.4745192 | 9.4947429  |
| 22      | 29848.56 | 31274.22 | 104776.32 | 9.4749234 | 9.4951865  |
| 23      | 29876.32 | 31306.16 | 104785.86 | 9.4753271 | 9.4956298  |
| 24      | 29904.08 | 31338.10 | 104795.40 | 9.4757304 | 9.4960727  |
| 25      | 29931.84 | 31370.05 | 104804.96 | 9.4761334 | 9.4965152  |
| 26      | 29959.59 | 31402.00 | 104814.53 | 9.4765359 | 9.4969574  |
| 27      | 29987.34 | 31433.96 | 104824.11 | 9.4769380 | 9.4973991  |
| 28      | 30015.09 | 31465.93 | 104833.70 | 9.4773396 | 9.4978406  |
| 29      | 30042.84 | 31497.90 | 104843.30 | 9.4777409 | 9.4982816  |
| 30      | 30070.58 | 31529.88 | 104852.91 | 9.4781418 | 9.4987223  |

# 72 Grad.

| Minuta | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 95630.48 | 327085.26 | 342030.36 | 9.9805963 | 10.5146610 |
| 59     | 95621.97 | 326745.29 | 341705.26 | 9.9805577 | 10.5142093 |
| 58     | 95613.45 | 326405.96 | 341380.80 | 9.9805190 | 10.5137581 |
| 57     | 95604.92 | 326067.28 | 341056.99 | 9.9804803 | 10.5133072 |
| 56     | 95596.39 | 325729.24 | 340733.82 | 9.9804415 | 10.5128567 |
| 55     | 95587.85 | 325391.84 | 340411.30 | 9.9804027 | 10.5124067 |
| 54     | 95579.30 | 325055.08 | 340089.41 | 9.9803639 | 10.5119570 |
| 53     | 95570.74 | 324718.95 | 339768.16 | 9.9803250 | 10.5115076 |
| 52     | 95562.17 | 324383.46 | 339447.54 | 9.9802860 | 10.5110587 |
| 51     | 95553.60 | 324048.60 | 339127.55 | 9.9802471 | 10.5106102 |
| 50     | 95545.02 | 323714.38 | 338808.20 | 9.9802081 | 10.5101620 |
| 49     | 95536.43 | 323380.78 | 338489.48 | 9.9801690 | 10.5097142 |
| 48     | 95527.83 | 323047.80 | 338171.38 | 9.9801299 | 10.5092668 |
| 47     | 95519.22 | 322714.46 | 337853.91 | 9.9800908 | 10.5088198 |
| 46     | 95510.61 | 322383.73 | 337537.07 | 9.9800516 | 10.5083731 |
| 45     | 95501.99 | 322052.63 | 337220.84 | 9.9800124 | 10.5079269 |
| 44     | 95493.36 | 321722.15 | 336905.24 | 9.9799732 | 10.5074810 |
| 43     | 95484.72 | 321392.28 | 336590.26 | 9.9799339 | 10.5070354 |
| 42     | 95476.07 | 321063.04 | 336275.89 | 9.9798946 | 10.5065903 |
| 41     | 95467.42 | 320734.40 | 335962.14 | 9.9798552 | 10.5061455 |
| 40     | 95458.76 | 320406.38 | 335649.00 | 9.9798158 | 10.5057012 |
| 39     | 95450.09 | 320078.97 | 335336.47 | 9.9797764 | 10.5052571 |
| 38     | 95441.41 | 319752.17 | 335024.55 | 9.9797369 | 10.5048135 |
| 37     | 95432.72 | 319425.98 | 334713.24 | 9.9796973 | 10.5043702 |
| 36     | 95424.03 | 319100.39 | 334402.54 | 9.9796578 | 10.5039273 |
| 35     | 95415.33 | 318775.40 | 334092.44 | 9.9796182 | 10.5034848 |
| 34     | 95406.62 | 318451.02 | 333782.94 | 9.9795785 | 10.5030426 |
| 33     | 95397.90 | 318127.24 | 333474.05 | 9.9795388 | 10.5026009 |
| 32     | 95389.17 | 317804.06 | 333165.75 | 9.9794991 | 10.5021594 |
| 31     | 95380.43 | 317481.47 | 332858.05 | 9.9794593 | 10.5017184 |
| 30     | 95371.69 | 317159.48 | 332550.95 | 9.9794195 | 10.5012777 |

# 17 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 30070.58 | 31529.88 | 104852.91 | 9.4781418 | 9.4987223  |
| 31     | 30098.32 | 31561.86 | 104862.53 | 9.4785423 | 9.4991626  |
| 32     | 30126.06 | 31593.85 | 104872.17 | 9.4789423 | 9.4996026  |
| 33     | 30153.80 | 31625.85 | 104881.81 | 9.4793420 | 9.5000422  |
| 34     | 30181.53 | 31657.85 | 104891.46 | 9.4797412 | 9.5004814  |
| 35     | 30209.26 | 31689.86 | 104901.13 | 9.4801401 | 9.5009203  |
| 36     | 30236.99 | 31721.87 | 104910.80 | 9.4805385 | 9.5013588  |
| 37     | 30264.71 | 31753.89 | 104920.49 | 9.4809366 | 9.5017969  |
| 38     | 30292.44 | 31785.91 | 104930.19 | 9.4813342 | 9.5022347  |
| 39     | 30320.16 | 31817.94 | 104939.89 | 9.4817315 | 9.5026721  |
| 40     | 30347.88 | 31849.98 | 104949.61 | 9.4821283 | 9.5031092  |
| 41     | 30375.59 | 31882.02 | 104959.34 | 9.4825248 | 9.5035459  |
| 42     | 30403.31 | 31914.07 | 104969.08 | 9.4829208 | 9.5039822  |
| 43     | 30431.02 | 31946.13 | 104978.83 | 9.4833165 | 9.5044182  |
| 44     | 30458.72 | 31978.19 | 104988.59 | 9.4837117 | 9.5048538  |
| 45     | 30486.43 | 32010.25 | 104998.36 | 9.4841066 | 9.5052891  |
| 46     | 30514.13 | 32042.32 | 105004.15 | 9.4845010 | 9.5057240  |
| 47     | 30541.83 | 32074.40 | 105017.94 | 9.4848951 | 9.5061586  |
| 48     | 30569.53 | 32106.49 | 105027.74 | 9.4852888 | 9.5065928  |
| 49     | 30597.23 | 32138.58 | 105037.56 | 9.4856820 | 9.5070267  |
| 50     | 30624.92 | 32170.67 | 105047.38 | 9.4860749 | 9.5074602  |
| 51     | 30652.61 | 32202.77 | 105057.22 | 9.4864674 | 9.5078933  |
| 52     | 30680.29 | 32234.88 | 105067.06 | 9.4868595 | 9.5083261  |
| 53     | 30707.98 | 32267.00 | 105076.92 | 9.4872512 | 9.5087586  |
| 54     | 30735.66 | 32299.12 | 105086.79 | 9.4876426 | 9.5091907  |
| 55     | 30763.34 | 32331.25 | 105096.67 | 9.4880335 | 9.5096224  |
| 56     | 30791.02 | 32363.38 | 105106.56 | 9.4884240 | 9.5100539  |
| 57     | 30818.69 | 32395.52 | 105116.46 | 9.4888142 | 9.5104849  |
| 58     | 30846.36 | 32427.66 | 105126.37 | 9.4892040 | 9.5109156  |
| 59     | 30874.03 | 32459.81 | 105136.29 | 9.4895934 | 9.5113460  |
| 60     | 70901.70 | 32491.97 | 105146.22 | 9.4899824 | 9.5117760  |

# 72 Grad.

| Minur. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 95371.69 | 317159.48 | 332550.95 | 9.9794195 | 10.5012777 |
| 29     | 95362.94 | 316838.08 | 332244.44 | 9.9793796 | 10.5008374 |
| 28     | 95354.18 | 316517.28 | 331938.53 | 9.9793398 | 10.5003974 |
| 27     | 95345.41 | 316197.06 | 331633.20 | 9.9792998 | 10.4999578 |
| 26     | 95336.64 | 315877.44 | 331328.47 | 9.9792599 | 10.4995186 |
| 25     | 95327.86 | 315558.40 | 331024.32 | 9.9792198 | 10.4990797 |
| 24     | 95319.07 | 315239.94 | 330720.76 | 9.9791798 | 10.4986412 |
| 23     | 95310.27 | 314922.07 | 330417.78 | 9.9791397 | 10.4982031 |
| 22     | 95301.46 | 314604.78 | 330115.39 | 9.9790996 | 10.4977653 |
| 21     | 95292.64 | 314288.07 | 329813.57 | 9.9790594 | 10.4973279 |
| 20     | 95283.82 | 313971.94 | 329512.34 | 9.9790192 | 10.4968908 |
| 19     | 95274.99 | 313656.39 | 329211.68 | 9.9789789 | 10.4964541 |
| 18     | 95266.15 | 313341.41 | 328911.60 | 9.9789386 | 10.4960178 |
| 17     | 95257.30 | 313027.01 | 328612.09 | 9.9788983 | 10.4955818 |
| 16     | 95248.44 | 312713.17 | 328313.16 | 9.9788579 | 10.4951462 |
| 15     | 95239.58 | 312399.91 | 328014.79 | 9.9788175 | 10.4947109 |
| 14     | 95230.71 | 312087.22 | 327717.00 | 9.9787770 | 10.4942760 |
| 13     | 95221.83 | 311775.09 | 327419.77 | 9.9787365 | 10.4938414 |
| 12     | 95212.94 | 311463.53 | 327123.11 | 9.9786960 | 10.4934072 |
| 11     | 95204.04 | 311152.54 | 326827.02 | 9.9786554 | 10.4929733 |
| 10     | 95195.14 | 310842.10 | 326531.49 | 9.9786148 | 10.4925398 |
| 9      | 95186.23 | 310532.23 | 326236.52 | 9.9785741 | 10.4921067 |
| 8      | 95177.31 | 310222.91 | 325942.11 | 9.9785334 | 10.4916739 |
| 7      | 95168.38 | 309914.16 | 325648.25 | 9.9784927 | 10.4912414 |
| 6      | 95159.44 | 309605.96 | 325354.96 | 9.9784519 | 10.4908093 |
| 5      | 95150.49 | 309298.31 | 325062.22 | 9.9784111 | 10.4903776 |
| 4      | 95141.54 | 308991.22 | 324770.03 | 9.9783702 | 10.4899461 |
| 3      | 95132.58 | 308684.68 | 324478.40 | 9.9783293 | 10.4895151 |
| 2      | 95123.61 | 308378.69 | 324187.32 | 9.9782883 | 10.4890844 |
| 1      | 95114.63 | 308073.25 | 323896.78 | 9.9782474 | 10.4886540 |
| 0      | 95105.65 | 307768.35 | 323606.80 | 9.9782063 | 10.4882240 |

# 18 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 30901.70 | 32491.97 | 105146.22 | 9.4899824 | 9.5117760  |
| 1      | 30929.36 | 32514.13 | 105156.17 | 9.4903710 | 9.5126057  |
| 2      | 30957.02 | 32556.30 | 105166.12 | 9.4907592 | 9.5126351  |
| 3      | 30984.68 | 32588.48 | 105176.08 | 9.4911471 | 9.5126641  |
| 4      | 31012.34 | 32620.66 | 105186.06 | 9.4915345 | 9.5134927  |
| 5      | 31039.99 | 32652.85 | 105196.05 | 9.4919216 | 9.5139210  |
| 6      | 31067.64 | 32685.04 | 105206.04 | 9.4923083 | 9.5143490  |
| 7      | 31095.29 | 32717.24 | 105216.05 | 9.4926946 | 9.5147766  |
| 8      | 31122.94 | 32749.44 | 105226.07 | 9.4930806 | 9.5152039  |
| 9      | 31150.58 | 32781.65 | 105236.10 | 9.4934661 | 9.5156309  |
| 10     | 31178.22 | 32813.87 | 105246.14 | 9.4938513 | 9.5160575  |
| 11     | 31205.86 | 32846.10 | 105256.19 | 9.4942361 | 9.5164838  |
| 12     | 31233.49 | 32878.33 | 105266.25 | 9.4946205 | 9.5169097  |
| 13     | 31261.12 | 32910.56 | 105276.33 | 9.4950046 | 9.5173353  |
| 14     | 31288.75 | 32942.80 | 105286.41 | 9.4953883 | 9.5177606  |
| 15     | 31316.38 | 32975.05 | 105296.51 | 9.4957716 | 9.5181855  |
| 16     | 31344.00 | 33007.31 | 105306.61 | 9.4961545 | 9.5186101  |
| 17     | 31371.63 | 33039.57 | 105316.73 | 9.4965370 | 9.5190344  |
| 18     | 31399.25 | 33071.84 | 105326.86 | 9.4969192 | 9.5194583  |
| 19     | 31426.86 | 33104.11 | 105336.99 | 9.4973010 | 9.5198819  |
| 20     | 31454.48 | 33136.39 | 105347.14 | 9.4976824 | 9.5203052  |
| 21     | 31482.09 | 33168.68 | 105357.30 | 9.4980635 | 9.5207082  |
| 22     | 31509.69 | 33200.97 | 105367.47 | 9.4984442 | 9.5211508  |
| 23     | 31537.30 | 33233.27 | 105377.65 | 9.4988245 | 9.5215730  |
| 24     | 31564.90 | 33265.57 | 105387.85 | 9.4992045 | 9.5219950  |
| 25     | 31592.50 | 33297.88 | 105398.05 | 9.4995840 | 9.5224166  |
| 26     | 31620.10 | 33330.20 | 105408.26 | 9.4999633 | 9.5228379  |
| 27     | 31647.70 | 33362.52 | 105418.49 | 9.5003421 | 9.5232589  |
| 28     | 31675.29 | 33394.85 | 105428.73 | 9.5007206 | 9.5236795  |
| 29     | 31702.88 | 33427.19 | 105438.97 | 9.5010987 | 9.5240999  |
| 30     | 31730.47 | 33459.53 | 105449.23 | 9.5014764 | 9.5245199  |

## 71 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 95105.65 | 307768.35 | 323606.80 | 9.9782063 | 10.4882240 |
| 59     | 95096.66 | 307464.00 | 323317.36 | 9.9781653 | 10.4877943 |
| 58     | 95087.66 | 307160.20 | 323028.46 | 9.9781241 | 10.4873649 |
| 57     | 95078.65 | 306856.93 | 322740.11 | 9.9780830 | 10.4869359 |
| 56     | 95069.63 | 306554.21 | 322452.30 | 9.9780418 | 10.4865073 |
| 55     | 95060.60 | 306252.03 | 322165.03 | 9.9780006 | 10.4860790 |
| 54     | 95051.57 | 305950.38 | 321878.30 | 9.9779593 | 10.4856510 |
| 53     | 95042.53 | 305649.28 | 321592.10 | 9.9779180 | 10.4852234 |
| 52     | 95033.48 | 305348.70 | 321306.44 | 9.9778766 | 10.4847961 |
| 51     | 95024.42 | 305048.66 | 321021.32 | 9.9778353 | 10.4843691 |
| 50     | 95015.36 | 304749.15 | 320736.73 | 9.9777938 | 10.4839425 |
| 49     | 95006.29 | 304450.18 | 320452.66 | 9.9777523 | 10.4835162 |
| 48     | 94997.21 | 304151.73 | 320169.13 | 9.9777108 | 10.4830903 |
| 47     | 94988.12 | 303853.81 | 319886.13 | 9.9776693 | 10.4826647 |
| 46     | 94979.02 | 303556.41 | 319603.65 | 9.9776277 | 10.4822394 |
| 45     | 94969.91 | 303259.54 | 319321.70 | 9.9775860 | 10.4818145 |
| 44     | 94960.80 | 302963.20 | 319040.28 | 9.9775444 | 10.4813899 |
| 43     | 94951.68 | 302667.37 | 318759.37 | 9.9775026 | 10.4809656 |
| 42     | 94942.55 | 302372.07 | 318478.99 | 9.9774609 | 10.4805417 |
| 41     | 94933.41 | 302077.28 | 318199.13 | 9.9774191 | 10.4801181 |
| 40     | 94924.26 | 301783.01 | 317919.78 | 9.9773772 | 10.4796948 |
| 39     | 94915.11 | 301489.26 | 317640.95 | 9.9773354 | 10.4792718 |
| 38     | 94905.95 | 301196.02 | 317362.64 | 9.9772934 | 10.4788492 |
| 37     | 94896.78 | 300903.30 | 317084.84 | 9.9772515 | 10.4784270 |
| 36     | 94887.60 | 300611.09 | 316807.56 | 9.9772095 | 10.4780050 |
| 35     | 94878.41 | 300319.39 | 316530.78 | 9.9771674 | 10.4775834 |
| 34     | 94869.22 | 300028.20 | 316254.52 | 9.9771253 | 10.4771621 |
| 33     | 94860.02 | 299737.51 | 315978.76 | 9.9770832 | 10.4767411 |
| 32     | 94850.81 | 299447.34 | 315703.51 | 9.9770410 | 10.4763205 |
| 31     | 94841.59 | 299157.66 | 315428.77 | 9.9769988 | 10.4759001 |
| 30     | 94832.36 | 298868.50 | 315154.53 | 9.9769566 | 10.4754801 |



# 18 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log Tang. |
|--------|----------|----------|-----------|-----------|-----------|
| 30     | 31730.47 | 33459.53 | 105449.23 | 9.5014764 | 9.5245199 |
| 31     | 31758.05 | 33491.88 | 105459.50 | 9.5018538 | 9.5249395 |
| 32     | 31785.63 | 33524.24 | 105469.78 | 9.5022308 | 9.5253589 |
| 33     | 31813.21 | 33556.60 | 105480.07 | 9.5026075 | 9.5257779 |
| 34     | 31840.79 | 33588.97 | 105490.37 | 9.5029838 | 9.5261966 |
| 35     | 31868.36 | 33621.34 | 105500.68 | 9.5033597 | 9.5266150 |
| 36     | 31895.93 | 33653.72 | 105511.01 | 9.5037353 | 9.5270331 |
| 37     | 31923.50 | 33686.11 | 105521.34 | 9.5041105 | 9.5274508 |
| 38     | 31951.06 | 33718.50 | 105531.69 | 9.5044853 | 9.5278682 |
| 39     | 31978.63 | 33750.90 | 105542.04 | 9.5048598 | 9.5282853 |
| 40     | 32006.19 | 33783.30 | 105552.41 | 9.5052339 | 9.5287021 |
| 41     | 32033.74 | 33815.71 | 105562.79 | 9.5056077 | 9.5291186 |
| 42     | 32061.30 | 33848.13 | 105573.18 | 9.5059811 | 9.5295347 |
| 43     | 32088.85 | 33880.56 | 105583.58 | 9.5063542 | 9.5299505 |
| 44     | 32116.40 | 33912.99 | 105593.99 | 9.5067268 | 9.5303661 |
| 45     | 32143.95 | 33945.43 | 105604.41 | 9.5070992 | 9.5307813 |
| 46     | 32171.49 | 33977.87 | 105614.85 | 9.5074712 | 9.5311961 |
| 47     | 32199.03 | 34010.32 | 105625.29 | 9.5078428 | 9.5316107 |
| 48     | 32226.57 | 34042.78 | 105635.75 | 9.5082141 | 9.5320250 |
| 49     | 32254.10 | 34075.24 | 105646.21 | 9.5085850 | 9.5324389 |
| 50     | 32281.64 | 34107.71 | 105656.69 | 9.5089556 | 9.5328526 |
| 51     | 32309.17 | 34140.19 | 105667.18 | 9.5093258 | 9.5332659 |
| 52     | 32336.70 | 34172.67 | 105677.68 | 9.5096956 | 9.5336789 |
| 53     | 32364.22 | 34205.16 | 105688.19 | 9.5100651 | 9.5340916 |
| 54     | 32391.74 | 34237.65 | 105698.71 | 9.5104343 | 9.5345040 |
| 55     | 32419.26 | 34270.15 | 105709.24 | 9.5108031 | 9.5349161 |
| 56     | 32446.78 | 34302.66 | 105719.78 | 9.5111716 | 9.5353278 |
| 57     | 32474.29 | 34335.18 | 105730.34 | 9.5115397 | 9.5357393 |
| 58     | 32501.80 | 34367.70 | 105740.90 | 9.5119074 | 9.5361505 |
| 59     | 32529.31 | 34400.23 | 105751.48 | 9.5122749 | 9.5365613 |
| 60     | 32556.82 | 34432.76 | 105762.07 | 9.5126419 | 9.5369719 |

## 71 Grad.

| Minute. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|---------|----------|-----------|-----------|-----------|------------|
| 30      | 94832.36 | 298868.50 | 315154.53 | 9.9769566 | 10.4754801 |
| 29      | 94823.13 | 298579.83 | 314880.79 | 9.9769143 | 10.4750605 |
| 28      | 94813.89 | 298291.66 | 314607.56 | 9.9768720 | 10.4746411 |
| 27      | 94804.64 | 298004.00 | 314334.83 | 9.9768296 | 10.4742221 |
| 26      | 94795.38 | 297716.83 | 314062.59 | 9.9767872 | 10.4738034 |
| 25      | 94786.11 | 297430.16 | 313790.86 | 9.9767447 | 10.4733850 |
| 24      | 94776.84 | 297143.99 | 313519.62 | 9.9767022 | 10.4729669 |
| 23      | 94767.56 | 296858.31 | 313248.87 | 9.9766597 | 10.4725492 |
| 22      | 94758.27 | 296573.12 | 312978.62 | 9.9766171 | 10.4721318 |
| 21      | 94748.97 | 296288.42 | 312708.86 | 9.9765745 | 10.4717147 |
| 20      | 94739.66 | 296004.22 | 312439.59 | 9.9765318 | 10.4712979 |
| 19      | 94730.35 | 295720.50 | 312170.81 | 9.9764891 | 10.4708814 |
| 18      | 94721.03 | 295437.27 | 311902.52 | 9.9764464 | 10.4704653 |
| 17      | 94711.70 | 295154.53 | 311634.72 | 9.9764036 | 10.4700495 |
| 16      | 94702.36 | 294872.27 | 311367.40 | 9.9763608 | 10.4696339 |
| 15      | 94693.01 | 294590.50 | 311100.57 | 9.9763179 | 10.4692187 |
| 14      | 94683.66 | 294309.21 | 310834.22 | 9.9762750 | 10.4688039 |
| 13      | 94674.30 | 294028.40 | 310568.35 | 9.9762321 | 10.4683893 |
| 12      | 94664.93 | 293748.07 | 310302.96 | 9.9761891 | 10.4679750 |
| 11      | 94655.55 | 293468.22 | 310038.05 | 9.9761461 | 10.4675611 |
| 10      | 94646.16 | 293188.85 | 309773.63 | 9.9761030 | 10.4671474 |
| 9       | 94636.76 | 292909.95 | 309509.67 | 9.9760599 | 10.4667341 |
| 8       | 94627.36 | 292631.52 | 309246.20 | 9.9760167 | 10.4663211 |
| 7       | 94617.95 | 292353.58 | 308983.19 | 9.9759736 | 10.4659084 |
| 6       | 94608.53 | 292076.10 | 308720.66 | 9.9759303 | 10.4654960 |
| 5       | 94599.10 | 291799.09 | 308458.60 | 9.9758870 | 10.4650838 |
| 4       | 94589.67 | 291522.56 | 308197.02 | 9.9758437 | 10.4646722 |
| 3       | 94580.23 | 291246.49 | 307935.00 | 9.9758004 | 10.4642607 |
| 2       | 94570.78 | 290970.89 | 307675.25 | 9.9757570 | 10.4638495 |
| 1       | 94561.32 | 290695.76 | 307415.07 | 9.9757135 | 10.4634387 |
| 0       | 94551.85 | 290421.09 | 307155.35 | 9.9756701 | 10.4630281 |

# 19 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 32556.82 | 34432.76 | 105762.07 | 9.5126419 | 9.5369718  |
| 1      | 32584.32 | 34465.30 | 105772.67 | 9.5130086 | 9.5373821  |
| 2      | 32611.82 | 34497.85 | 105783.28 | 9.5133750 | 9.5377920  |
| 3      | 32639.31 | 34530.40 | 105793.90 | 9.5137410 | 9.5382017  |
| 4      | 32666.81 | 34562.96 | 105804.53 | 9.5141067 | 9.5386110  |
| 5      | 32694.30 | 34595.53 | 105815.17 | 9.5144721 | 9.5390200  |
| 6      | 32721.79 | 34628.10 | 105825.83 | 9.5148371 | 9.5394287  |
| 7      | 32749.28 | 34660.68 | 105836.49 | 9.5152017 | 9.5398371  |
| 8      | 32776.76 | 34693.27 | 105847.17 | 9.5155660 | 9.5402453  |
| 9      | 32804.24 | 34725.86 | 105857.86 | 9.5159300 | 9.5406531  |
| 10     | 32831.72 | 34758.46 | 105868.55 | 9.5162936 | 9.5410606  |
| 11     | 32859.19 | 34791.07 | 105879.26 | 9.5166569 | 9.5414678  |
| 12     | 32886.66 | 34823.68 | 105889.99 | 9.5170198 | 9.5418747  |
| 13     | 32914.13 | 34856.30 | 105900.72 | 9.5173824 | 9.5422813  |
| 14     | 32941.60 | 34888.93 | 105911.46 | 9.5177447 | 9.5426877  |
| 15     | 32969.06 | 34921.56 | 105922.21 | 9.5181066 | 9.5430937  |
| 16     | 32996.52 | 34954.20 | 105932.98 | 9.5184682 | 9.5434994  |
| 17     | 33023.98 | 34986.85 | 105943.76 | 9.5188295 | 9.5439048  |
| 18     | 33051.44 | 35019.50 | 105954.54 | 9.5191904 | 9.5443100  |
| 19     | 33078.89 | 35052.16 | 105965.34 | 9.5195510 | 9.5447148  |
| 20     | 33106.34 | 35084.83 | 105976.15 | 9.5199112 | 9.5451193  |
| 21     | 33133.79 | 35117.50 | 105986.97 | 9.5202711 | 9.5455236  |
| 22     | 33161.23 | 35150.18 | 105997.81 | 9.5206307 | 9.5459276  |
| 23     | 33188.67 | 35182.87 | 106008.65 | 9.5209899 | 9.5463312  |
| 24     | 33216.11 | 35215.56 | 106019.51 | 9.5213488 | 9.5467346  |
| 25     | 33243.55 | 35248.26 | 106030.37 | 9.5217074 | 9.5471377  |
| 26     | 33270.98 | 35280.97 | 106041.25 | 9.5220656 | 9.5475405  |
| 27     | 33298.41 | 35313.68 | 106052.14 | 9.5224235 | 9.5479430  |
| 28     | 33325.84 | 35346.40 | 106063.04 | 9.5227811 | 9.5483452  |
| 29     | 33353.27 | 35379.13 | 106073.95 | 9.5231383 | 9.5487471  |
| 30     | 33380.69 | 35411.86 | 106084.87 | 9.5234953 | 9.5491487  |

# 70 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 94551.85 | 290421.09 | 307155.35 | 9.9756701 | 10.4630281 |
| 59     | 94542.38 | 290146.88 | 306896.10 | 9.9756265 | 10.4626179 |
| 58     | 94532.90 | 289873.14 | 306637.31 | 9.9755830 | 10.4622080 |
| 57     | 94523.41 | 289599.86 | 306378.98 | 9.9755394 | 10.4617983 |
| 56     | 94513.91 | 289327.04 | 306121.11 | 9.9754957 | 10.4613890 |
| 55     | 94504.40 | 289054.67 | 305863.70 | 9.9754521 | 10.4609800 |
| 54     | 94494.89 | 288782.77 | 305606.75 | 9.9754083 | 10.4605713 |
| 53     | 94485.37 | 288511.32 | 305350.26 | 9.9753646 | 10.4601629 |
| 52     | 94475.84 | 288240.33 | 305094.23 | 9.9753208 | 10.4597547 |
| 51     | 94466.30 | 287969.79 | 304838.64 | 9.9752769 | 10.4593469 |
| 50     | 94456.75 | 287699.70 | 304583.52 | 9.9752330 | 10.4589394 |
| 49     | 94447.20 | 287430.07 | 304328.84 | 9.9751891 | 10.4585322 |
| 48     | 94437.64 | 287160.88 | 304074.62 | 9.9751451 | 10.4581253 |
| 47     | 94428.07 | 286892.15 | 303820.84 | 9.9751011 | 10.4577187 |
| 46     | 94418.49 | 286623.86 | 303567.52 | 9.9750570 | 10.4573123 |
| 45     | 94408.90 | 286356.02 | 303314.64 | 9.9750129 | 10.4569063 |
| 44     | 94399.31 | 286088.63 | 303062.21 | 9.9749688 | 10.4565006 |
| 43     | 94389.71 | 285821.68 | 302810.23 | 9.9749246 | 10.4560952 |
| 42     | 94380.10 | 285555.17 | 302558.68 | 9.9748804 | 10.4556900 |
| 41     | 94370.48 | 285289.11 | 302307.59 | 9.9748361 | 10.4552852 |
| 40     | 94360.85 | 285023.49 | 302056.93 | 9.9747918 | 10.4548807 |
| 39     | 94351.21 | 284758.31 | 301806.72 | 9.9747475 | 10.4544764 |
| 38     | 94341.57 | 284493.56 | 301556.94 | 9.9747031 | 10.4540724 |
| 37     | 94331.92 | 284229.26 | 301307.60 | 9.9746587 | 10.4536688 |
| 36     | 94322.26 | 283965.39 | 301058.70 | 9.9746142 | 10.4532654 |
| 35     | 94312.60 | 283701.96 | 300810.24 | 9.9745697 | 10.4528623 |
| 34     | 94302.93 | 283438.96 | 300562.21 | 9.9745252 | 10.4524595 |
| 33     | 94293.25 | 283176.39 | 300314.62 | 9.9744806 | 10.4520570 |
| 32     | 94283.56 | 282914.26 | 300067.46 | 9.9744359 | 10.4516548 |
| 31     | 94273.86 | 282652.56 | 299820.73 | 9.9743913 | 10.4512529 |
| 30     | 94264.15 | 282391.29 | 299574.43 | 9.9743466 | 10.4508513 |

# 19 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 33380.69 | 35411.86 | 106084.87 | 9.5234953 | 9.5491487  |
| 31     | 33408.10 | 35444.60 | 106095.80 | 9.5238518 | 9.5495500  |
| 32     | 33435.52 | 35477.35 | 106106.75 | 9.5242081 | 9.5499511  |
| 33     | 33462.93 | 35510.10 | 106117.70 | 9.5245640 | 9.5503519  |
| 34     | 33490.34 | 35542.86 | 106128.67 | 9.5249196 | 9.5507523  |
| 35     | 33517.75 | 35575.63 | 106139.65 | 9.5252749 | 9.5511525  |
| 36     | 33545.16 | 35608.40 | 106150.64 | 9.5256298 | 9.5515524  |
| 37     | 33572.56 | 35641.18 | 106161.64 | 9.5259844 | 9.5519521  |
| 38     | 33599.96 | 35673.97 | 106172.65 | 9.5263387 | 9.5523514  |
| 39     | 33627.35 | 35706.76 | 106183.67 | 9.5266927 | 9.5527504  |
| 40     | 33654.75 | 35739.56 | 106194.71 | 9.5270463 | 9.5531492  |
| 41     | 33682.14 | 35772.37 | 106205.75 | 9.5273997 | 9.5535477  |
| 42     | 33709.53 | 35805.18 | 106216.81 | 9.5277526 | 9.5539459  |
| 43     | 33736.91 | 35838.00 | 106227.88 | 9.5281053 | 9.5543438  |
| 44     | 33764.29 | 35870.83 | 106238.96 | 9.5284577 | 9.5547415  |
| 45     | 33791.67 | 35903.67 | 106250.05 | 9.5288097 | 9.5551388  |
| 46     | 33819.05 | 35936.51 | 106261.15 | 9.5291614 | 9.5555359  |
| 47     | 33846.42 | 35969.36 | 106272.27 | 9.5295128 | 9.5559327  |
| 48     | 33873.79 | 36002.22 | 106283.39 | 9.5298638 | 9.5563292  |
| 49     | 33901.16 | 36035.08 | 106294.53 | 9.5302146 | 9.5567255  |
| 50     | 33928.53 | 36067.95 | 106305.68 | 9.5305650 | 9.5571214  |
| 51     | 33955.89 | 36100.83 | 106316.84 | 9.5309151 | 9.5575171  |
| 52     | 33983.25 | 36133.71 | 106328.01 | 9.5312649 | 9.5579125  |
| 53     | 34010.60 | 36166.60 | 106339.19 | 9.5316143 | 9.5583077  |
| 54     | 34037.95 | 36199.50 | 106350.38 | 9.5319635 | 9.5587025  |
| 55     | 34065.30 | 36232.40 | 106361.58 | 9.5323123 | 9.5590971  |
| 56     | 34092.65 | 36265.31 | 106372.80 | 9.5326608 | 9.5594914  |
| 57     | 34120.00 | 36298.23 | 106384.03 | 9.5330090 | 9.5598854  |
| 58     | 34147.34 | 36331.15 | 106395.27 | 9.5333569 | 9.5602792  |
| 59     | 34174.68 | 36364.08 | 106406.52 | 9.5337044 | 9.5606727  |
| 60     | 34202.02 | 36397.02 | 106417.78 | 9.5340517 | 9.5610659  |

## 70 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 94264.15 | 282391.29 | 299574.43 | 9.9743466 | 10.4508513 |
| 29     | 94254.43 | 282130.45 | 299328.56 | 9.9743018 | 10.4504500 |
| 28     | 94244.71 | 281870.03 | 299083.12 | 9.9742570 | 10.4500489 |
| 27     | 94234.98 | 281610.04 | 298838.11 | 9.9742122 | 10.4496481 |
| 26     | 94225.24 | 281350.48 | 298593.52 | 9.9741673 | 10.4492477 |
| 25     | 94215.50 | 281091.34 | 298349.36 | 9.9741224 | 10.4488475 |
| 24     | 94205.75 | 280832.63 | 298105.63 | 9.9740774 | 10.4484476 |
| 23     | 94195.99 | 280574.33 | 297862.31 | 9.9740324 | 10.4480479 |
| 22     | 94186.22 | 280316.46 | 297619.42 | 9.9739873 | 10.4476486 |
| 21     | 94176.44 | 280059.01 | 297376.95 | 9.9739422 | 10.4472496 |
| 20     | 94166.65 | 279801.98 | 297134.90 | 9.9738971 | 10.4468508 |
| 19     | 94156.85 | 279545.37 | 296893.27 | 9.9738519 | 10.4464523 |
| 18     | 94147.05 | 279289.17 | 296652.05 | 9.9738067 | 10.4460541 |
| 17     | 94137.24 | 279033.39 | 296411.25 | 9.9737615 | 10.4456562 |
| 16     | 94127.42 | 278778.02 | 296170.87 | 9.9737162 | 10.4452585 |
| 15     | 94117.60 | 278523.07 | 295930.90 | 9.9736709 | 10.4448612 |
| 14     | 94107.77 | 278268.53 | 295691.35 | 9.9736255 | 10.4444641 |
| 13     | 94097.93 | 278014.40 | 295452.21 | 9.9735801 | 10.4440673 |
| 12     | 94088.08 | 277760.69 | 295213.48 | 9.9735346 | 10.4436708 |
| 11     | 94078.22 | 277507.38 | 294975.16 | 9.9734891 | 10.4432745 |
| 10     | 94068.35 | 277254.48 | 294737.25 | 9.9734435 | 10.4428786 |
| 9      | 94058.48 | 277001.99 | 294499.75 | 9.9733980 | 10.4424829 |
| 8      | 94048.60 | 276749.90 | 294262.65 | 9.9733523 | 10.4420875 |
| 7      | 94038.71 | 276498.22 | 294025.97 | 9.9733067 | 10.4416923 |
| 6      | 94028.81 | 276246.95 | 293789.68 | 9.9732610 | 10.4412975 |
| 5      | 94018.90 | 275996.08 | 293553.80 | 9.9732152 | 10.4409029 |
| 4      | 94008.99 | 275745.61 | 293318.33 | 9.9731694 | 10.4405086 |
| 3      | 93999.07 | 275495.54 | 293083.26 | 9.9731236 | 10.4401146 |
| 2      | 93989.14 | 275245.88 | 292848.58 | 9.9730777 | 10.4397208 |
| 1      | 93979.20 | 274996.61 | 292614.31 | 9.9730318 | 10.4393273 |
| 0      | 93969.26 | 274747.74 | 292380.44 | 9.9729858 | 10.4389341 |

## 20 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 34202.02 | 36397.02 | 106417.78 | 9.5340517 | 9.5610658  |
| 1      | 34229.35 | 36429.97 | 106429.05 | 9.5343986 | 9.5614588  |
| 2      | 34256.68 | 36462.92 | 106440.33 | 9.5347452 | 9.5618515  |
| 3      | 34284.01 | 36495.88 | 106451.63 | 9.5350915 | 9.5622439  |
| 4      | 34311.33 | 36528.85 | 106462.94 | 9.5354375 | 9.5626360  |
| 5      | 34338.65 | 36561.82 | 106474.26 | 9.5357832 | 9.5630278  |
| 6      | 34365.97 | 36594.80 | 106485.59 | 9.5361286 | 9.5634194  |
| 7      | 34393.29 | 36627.79 | 106496.93 | 9.5364737 | 9.5638107  |
| 8      | 34420.60 | 36660.79 | 106508.28 | 9.5368184 | 9.5642018  |
| 9      | 34447.91 | 36693.79 | 106519.64 | 9.5371628 | 9.5645925  |
| 10     | 34475.22 | 36726.80 | 106531.01 | 9.5375069 | 9.5649831  |
| 11     | 34502.52 | 36759.82 | 106542.40 | 9.5378508 | 9.5653733  |
| 12     | 34529.82 | 36792.84 | 106553.80 | 9.5381943 | 9.5657633  |
| 13     | 34557.12 | 36825.87 | 106565.21 | 9.5385375 | 9.5661530  |
| 14     | 34584.42 | 36858.91 | 106576.63 | 9.5388804 | 9.5665424  |
| 15     | 34611.71 | 36891.95 | 106588.07 | 9.5392230 | 9.5669316  |
| 16     | 34639.00 | 36925.00 | 106599.51 | 9.5395653 | 9.5673205  |
| 17     | 34666.29 | 36958.06 | 106610.97 | 9.5399073 | 9.5677091  |
| 18     | 34693.57 | 36991.13 | 106622.43 | 9.5402489 | 9.5680975  |
| 19     | 34720.85 | 37024.20 | 106633.91 | 9.5405903 | 9.5684856  |
| 20     | 34748.13 | 37057.28 | 106645.40 | 9.5409314 | 9.5688735  |
| 21     | 34775.40 | 37090.37 | 106656.90 | 9.5412721 | 9.5692611  |
| 22     | 34802.67 | 37123.46 | 106668.42 | 9.5416126 | 9.5696484  |
| 23     | 34829.94 | 37156.56 | 106679.94 | 9.5419527 | 9.5700355  |
| 24     | 34857.21 | 37189.67 | 106691.48 | 9.5422926 | 9.5704223  |
| 25     | 34884.47 | 37222.78 | 106703.02 | 9.5426321 | 9.5708088  |
| 26     | 34911.73 | 37255.90 | 106714.58 | 9.5429713 | 9.5711951  |
| 27     | 34938.99 | 37289.03 | 106726.15 | 9.5433103 | 9.5715811  |
| 28     | 34966.24 | 37322.17 | 106737.74 | 9.5436489 | 9.5719669  |
| 29     | 34993.49 | 37355.32 | 106749.34 | 9.5439873 | 9.5723524  |
| 30     | 35020.74 | 37388.47 | 106760.94 | 9.5443253 | 9.5727377  |

# 69 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 93969.26 | 274747.74 | 292380.44 | 9.9729858 | 10.4389341 |
| 59     | 93959.31 | 274499.27 | 292146.97 | 9.9729398 | 10.4385412 |
| 58     | 93949.35 | 274251.20 | 291913.89 | 9.9728938 | 10.4381485 |
| 57     | 93939.38 | 274003.52 | 291681.21 | 9.9728477 | 10.4377561 |
| 56     | 93929.40 | 273756.23 | 291448.92 | 9.9728016 | 10.4373640 |
| 55     | 93919.42 | 273509.34 | 291217.03 | 9.9727554 | 10.4369722 |
| 54     | 93909.43 | 273262.84 | 290985.53 | 9.9727092 | 10.4365806 |
| 53     | 93899.43 | 273016.74 | 290754.43 | 9.9726629 | 10.4361893 |
| 52     | 93889.42 | 272771.02 | 290523.72 | 9.9726166 | 10.4357982 |
| 51     | 93879.40 | 272525.69 | 290293.39 | 9.9725703 | 10.4354075 |
| 50     | 93869.37 | 272280.75 | 290063.46 | 9.9725239 | 10.4350169 |
| 49     | 93859.34 | 272036.20 | 289833.91 | 9.9724775 | 10.4346267 |
| 48     | 93849.30 | 271792.04 | 289604.75 | 9.9724310 | 10.4342367 |
| 47     | 93839.25 | 271548.26 | 289375.98 | 9.9723845 | 10.4338470 |
| 46     | 93829.19 | 271304.87 | 289147.60 | 9.9723380 | 10.4334576 |
| 45     | 93819.13 | 271061.86 | 288919.59 | 9.9722914 | 10.4330684 |
| 44     | 93809.06 | 270819.23 | 288691.98 | 9.9722448 | 10.4326795 |
| 43     | 93798.98 | 270576.99 | 288464.74 | 9.9721981 | 10.4322909 |
| 42     | 93788.89 | 270335.13 | 288237.89 | 9.9721514 | 10.4319025 |
| 41     | 93778.79 | 270093.64 | 288011.42 | 9.9721047 | 10.4315144 |
| 40     | 93768.69 | 269852.54 | 287785.32 | 9.9720579 | 10.4311265 |
| 39     | 93758.58 | 269611.81 | 287559.61 | 9.9720110 | 10.4307389 |
| 38     | 93748.46 | 269371.47 | 287334.28 | 9.9719642 | 10.4303516 |
| 37     | 93738.33 | 269131.49 | 287109.32 | 9.9719172 | 10.4299645 |
| 36     | 93728.19 | 268891.90 | 286884.74 | 9.9718703 | 10.4295777 |
| 35     | 93718.05 | 268652.67 | 286660.53 | 9.9718233 | 10.4291912 |
| 34     | 93707.90 | 268413.83 | 286436.70 | 9.9717762 | 10.4288049 |
| 33     | 93697.74 | 268175.35 | 286213.24 | 9.9717291 | 10.4284189 |
| 32     | 93687.57 | 267937.25 | 285990.15 | 9.9716820 | 10.4280331 |
| 31     | 93677.40 | 267699.51 | 285767.44 | 9.9716348 | 10.4276476 |
| 30     | 93667.22 | 267462.15 | 285545.09 | 9.9715876 | 10.4272623 |



| Minut. | 20 Grad. |          |           |  |           |           |
|--------|----------|----------|-----------|--|-----------|-----------|
|        | Sinus.   | Tang.    | Secant.   |  | Log. Sin. | Log. Tang |
| 30     | 35020.74 | 37388.47 | 106760.94 |  | 9.5443253 | 9.5727377 |
| 31     | 35047.99 | 37421.63 | 106772.55 |  | 9.5446630 | 9.5731227 |
| 32     | 35075.23 | 37454.79 | 106784.18 |  | 9.5450005 | 9.5735074 |
| 33     | 35102.47 | 37487.97 | 106795.82 |  | 9.5453376 | 9.5738919 |
| 34     | 35129.70 | 37521.15 | 106807.47 |  | 9.5456745 | 9.5742761 |
| 35     | 35156.93 | 37554.34 | 106819.14 |  | 9.5460110 | 9.5746601 |
| 36     | 35184.16 | 37587.53 | 106830.81 |  | 9.5463472 | 9.5750438 |
| 37     | 35211.39 | 37620.73 | 106842.50 |  | 9.5466832 | 9.5754272 |
| 38     | 35238.62 | 37653.94 | 106854.20 |  | 9.5470189 | 9.5758104 |
| 39     | 35265.84 | 37687.16 | 106865.91 |  | 9.5473542 | 9.5761934 |
| 40     | 35293.06 | 37720.38 | 106877.63 |  | 9.5476893 | 9.5765761 |
| 41     | 35320.27 | 37753.61 | 106889.36 |  | 9.5480240 | 9.5769585 |
| 42     | 35347.48 | 37786.85 | 106901.10 |  | 9.5483585 | 9.5773407 |
| 43     | 35374.69 | 37820.10 | 106912.86 |  | 9.5486927 | 9.5777226 |
| 44     | 35401.90 | 37853.35 | 106924.63 |  | 9.5490266 | 9.5781043 |
| 45     | 35429.10 | 37886.61 | 106936.41 |  | 9.5493602 | 9.5784858 |
| 46     | 35456.30 | 37919.88 | 106948.20 |  | 9.5496935 | 9.5788669 |
| 47     | 35483.50 | 37953.16 | 106960.00 |  | 9.5500265 | 9.5792479 |
| 48     | 35510.70 | 37986.44 | 106971.82 |  | 9.5503592 | 9.5796286 |
| 49     | 35537.89 | 38019.73 | 106983.64 |  | 9.5506916 | 9.5800090 |
| 50     | 35565.08 | 38053.03 | 106995.48 |  | 9.5510237 | 9.5803892 |
| 51     | 35592.26 | 38086.33 | 107007.33 |  | 9.5513556 | 9.5807691 |
| 52     | 35619.44 | 38119.64 | 107019.19 |  | 9.5516871 | 9.5811488 |
| 53     | 35646.62 | 38152.96 | 107031.06 |  | 9.5520184 | 9.5815282 |
| 54     | 35673.80 | 38186.29 | 107042.95 |  | 9.5523494 | 9.5819074 |
| 55     | 35700.97 | 38219.62 | 107054.84 |  | 9.5526801 | 9.5822864 |
| 56     | 35728.14 | 38252.96 | 107066.75 |  | 9.5530105 | 9.5826651 |
| 57     | 35755.31 | 38286.31 | 107078.67 |  | 9.5533406 | 9.5830435 |
| 58     | 35782.48 | 38319.67 | 107090.60 |  | 9.5536704 | 9.5834217 |
| 59     | 35809.64 | 38353.03 | 107102.54 |  | 9.5539999 | 9.5837997 |
| 60     | 35836.79 | 38386.40 | 107114.50 |  | 9.5543292 | 9.5841774 |

# 69 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 93667.22 | 267462.15 | 285545.09 | 9.9715876 | 10.4272623 |
| 29     | 93657.03 | 267225.16 | 285323.12 | 9.9715404 | 10.4268773 |
| 28     | 93646.83 | 266988.53 | 285101.52 | 9.9714931 | 10.4264926 |
| 27     | 93636.62 | 266752.27 | 284880.28 | 9.9714457 | 10.4261081 |
| 26     | 93626.40 | 266516.38 | 284659.41 | 9.9713984 | 10.4257239 |
| 25     | 93616.18 | 266280.85 | 284438.91 | 9.9713509 | 10.4253399 |
| 24     | 93605.95 | 266045.69 | 284218.77 | 9.9713035 | 10.8249562 |
| 23     | 93595.71 | 265810.89 | 283998.99 | 9.9712560 | 10.4245728 |
| 22     | 93585.46 | 265576.45 | 283779.58 | 9.9712084 | 10.4241896 |
| 21     | 93575.21 | 265342.38 | 283560.54 | 9.9711608 | 10.4238066 |
| 20     | 93564.95 | 265108.67 | 283341.85 | 9.9711132 | 10.4234239 |
| 19     | 93554.68 | 264875.31 | 283123.53 | 9.9710655 | 10.4230415 |
| 18     | 93544.40 | 264642.32 | 282905.56 | 9.9710178 | 10.4226593 |
| 17     | 93534.11 | 264409.69 | 282687.96 | 9.9709701 | 10.4222774 |
| 16     | 93523.82 | 264177.41 | 282470.71 | 9.9709223 | 10.4218957 |
| 15     | 93513.52 | 263945.49 | 282253.82 | 9.9708744 | 10.4215142 |
| 14     | 93503.21 | 263713.92 | 282037.29 | 9.9708265 | 10.4211331 |
| 13     | 93492.89 | 263482.71 | 281821.11 | 9.9707786 | 10.4207521 |
| 12     | 93482.56 | 263251.86 | 281605.29 | 9.9707306 | 10.4203714 |
| 11     | 93472.23 | 263021.36 | 281389.82 | 9.9706826 | 10.4199910 |
| 10     | 93461.89 | 262791.21 | 281174.71 | 9.9706346 | 10.4196108 |
| 9      | 93451.54 | 262561.41 | 280959.95 | 9.9705865 | 10.4192309 |
| 8      | 93441.18 | 262331.96 | 280745.54 | 9.9705383 | 10.4188512 |
| 7      | 93430.82 | 262102.86 | 280531.48 | 9.9704902 | 10.4184718 |
| 6      | 93420.45 | 261874.11 | 280317.77 | 9.9704419 | 10.4180926 |
| 5      | 93410.07 | 261645.71 | 280104.41 | 9.9703937 | 10.4177136 |
| 4      | 93399.68 | 261417.66 | 279891.40 | 9.9703454 | 10.4173349 |
| 3      | 93389.28 | 261189.95 | 279678.73 | 9.9702970 | 10.4169565 |
| 2      | 93378.87 | 260962.59 | 279466.41 | 9.9702486 | 10.4165783 |
| 1      | 93368.46 | 260735.58 | 279254.44 | 9.9702002 | 10.4162003 |
| 0      | 93358.04 | 260508.91 | 279042.81 | 9.9701517 | 10.4158226 |

## 21 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 35836.79 | 38386.40 | 107114.50 | 9.5543292 | 9.5841774  |
| 1      | 35863.95 | 38419.78 | 107126.47 | 9.5546581 | 9.5845549  |
| 2      | 35891.10 | 38453.17 | 107138.44 | 9.5549868 | 9.5849321  |
| 3      | 35918.25 | 38486.56 | 107150.43 | 9.5553152 | 9.5853091  |
| 4      | 35945.40 | 38519.96 | 107162.44 | 9.5556433 | 9.5856859  |
| 5      | 35972.54 | 38553.37 | 107174.45 | 9.5559711 | 9.5860624  |
| 6      | 35999.68 | 38586.79 | 107186.47 | 9.5562987 | 9.5864386  |
| 7      | 36026.82 | 38620.21 | 107198.51 | 9.5566259 | 9.5868147  |
| 8      | 36053.95 | 38653.64 | 107210.56 | 9.5569529 | 9.5871904  |
| 9      | 36081.08 | 38687.08 | 107222.62 | 9.5572796 | 9.5875660  |
| 10     | 36108.21 | 38720.53 | 107234.69 | 9.5576060 | 9.5879413  |
| 11     | 36135.33 | 38753.98 | 107246.78 | 9.5579321 | 9.5883163  |
| 12     | 36162.46 | 38787.44 | 107258.87 | 9.5582579 | 9.5886912  |
| 13     | 36189.58 | 38820.91 | 107270.98 | 9.5585835 | 9.5890657  |
| 14     | 36216.69 | 38854.39 | 107283.10 | 9.5589088 | 9.5894401  |
| 15     | 36243.80 | 38887.87 | 107295.23 | 9.5592338 | 9.5898142  |
| 16     | 36270.91 | 38921.36 | 107307.37 | 9.5595585 | 9.5901881  |
| 17     | 36298.02 | 38954.86 | 107319.53 | 9.5598829 | 9.5905617  |
| 18     | 36325.12 | 38988.37 | 107331.70 | 9.5602071 | 9.5909351  |
| 19     | 36352.22 | 39021.89 | 107343.88 | 9.5605310 | 9.5913082  |
| 20     | 36379.32 | 39055.41 | 107356.07 | 9.5608546 | 9.5916812  |
| 21     | 36406.41 | 39088.94 | 107368.27 | 9.5611779 | 9.5920539  |
| 22     | 36433.50 | 39122.48 | 107380.48 | 9.5615010 | 9.5924263  |
| 23     | 36460.59 | 39156.02 | 107392.71 | 9.5618237 | 9.5927985  |
| 24     | 36487.68 | 39189.57 | 107404.95 | 9.5621462 | 9.5931705  |
| 25     | 36514.76 | 39223.13 | 107417.20 | 9.5624685 | 9.5935422  |
| 26     | 36541.84 | 39256.70 | 107429.46 | 9.5627904 | 9.5939138  |
| 27     | 36568.92 | 39290.28 | 107441.73 | 9.5631121 | 9.5942851  |
| 28     | 36595.99 | 39323.86 | 107454.02 | 9.5634335 | 9.5946561  |
| 29     | 36623.06 | 39357.45 | 107466.31 | 9.5637546 | 9.5950269  |
| 30     | 36650.13 | 39391.05 | 107478.62 | 9.5640754 | 9.5953975  |

## 68 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 93358.04 | 260508.91 | 279042.81 | 9.9701517 | 10.4158226 |
| 59     | 93347.61 | 260282.58 | 278831.53 | 9.9701032 | 10.4154451 |
| 58     | 93337.17 | 260056.59 | 278620.59 | 9.9700547 | 10.4150679 |
| 57     | 93326.73 | 259830.95 | 278409.99 | 9.9700061 | 10.4146909 |
| 56     | 93316.28 | 259605.64 | 278199.73 | 9.9699574 | 10.4143141 |
| 55     | 93305.82 | 259380.68 | 277989.82 | 9.9699087 | 10.4139376 |
| 54     | 93295.35 | 259156.06 | 277780.24 | 9.9698600 | 10.4135614 |
| 53     | 93284.87 | 258931.77 | 277571.00 | 9.9698112 | 10.4131853 |
| 52     | 93274.39 | 258707.82 | 277362.11 | 9.9697624 | 10.4128096 |
| 51     | 93263.90 | 258484.21 | 277153.55 | 9.9697136 | 10.4124340 |
| 50     | 93253.40 | 258260.94 | 276945.32 | 9.9696647 | 10.4120587 |
| 49     | 93242.89 | 258038.90 | 276737.43 | 9.9696158 | 10.4116837 |
| 48     | 93232.38 | 257815.39 | 276529.88 | 9.9695668 | 10.4113088 |
| 47     | 93221.86 | 257593.12 | 276322.66 | 9.9695177 | 10.4109343 |
| 46     | 93211.33 | 257371.18 | 276115.78 | 9.9694687 | 10.4105599 |
| 45     | 93200.79 | 257149.57 | 275909.23 | 9.9694196 | 10.4101858 |
| 44     | 93190.24 | 256928.30 | 275703.01 | 9.9693704 | 10.4098119 |
| 43     | 93179.68 | 256707.35 | 275497.12 | 9.9693212 | 10.4094383 |
| 42     | 93169.12 | 256486.74 | 275291.57 | 9.9692720 | 10.4090649 |
| 41     | 93158.55 | 256266.45 | 275086.34 | 9.9692227 | 10.4086918 |
| 40     | 93147.97 | 256046.49 | 274881.44 | 9.9691734 | 10.4083188 |
| 39     | 93137.38 | 255826.86 | 274676.87 | 9.9691240 | 10.4079461 |
| 38     | 93126.79 | 255607.56 | 274472.63 | 9.9690746 | 10.4075737 |
| 37     | 93116.19 | 255388.58 | 274268.71 | 9.9690252 | 10.4072015 |
| 36     | 93105.58 | 255169.92 | 274065.12 | 9.9689757 | 10.4068295 |
| 35     | 93094.96 | 254951.60 | 273861.86 | 9.9689262 | 10.4064577 |
| 34     | 93084.33 | 254733.59 | 273658.92 | 9.9688766 | 10.4060862 |
| 33     | 93073.70 | 254515.91 | 273456.30 | 9.9688270 | 10.4057149 |
| 32     | 93063.06 | 254298.55 | 273254.00 | 9.9687773 | 10.4053439 |
| 31     | 93052.41 | 254081.51 | 273052.03 | 9.9687276 | 10.4049731 |
| 30     | 93041.75 | 253864.79 | 272850.38 | 9.9686779 | 10.4046025 |

## 21 Grad.

| Minur. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 36650.13 | 39391.05 | 107478.62 | 9.5640754 | 9.5953975  |
| 31     | 36677.19 | 39424.66 | 107490.95 | 9.5643960 | 9.5957679  |
| 32     | 36704.25 | 39458.27 | 107503.28 | 9.5647163 | 9.5961380  |
| 33     | 36731.31 | 39491.89 | 107515.62 | 9.5650363 | 9.5965079  |
| 34     | 36758.36 | 39525.52 | 107527.98 | 9.5653561 | 9.5968776  |
| 35     | 36785.41 | 39559.16 | 107540.35 | 9.5656756 | 9.5972470  |
| 36     | 36812.46 | 39592.80 | 107552.73 | 9.5659948 | 9.5976162  |
| 37     | 36839.50 | 39620.45 | 107565.12 | 9.5663137 | 9.5979852  |
| 38     | 36866.54 | 39660.11 | 107577.52 | 9.5666324 | 9.5983540  |
| 39     | 36893.58 | 39693.78 | 107589.95 | 9.5669508 | 9.5987225  |
| 40     | 36920.62 | 39727.46 | 107602.37 | 9.5672689 | 9.5990908  |
| 41     | 36947.65 | 39761.14 | 107614.81 | 9.5675868 | 9.5994588  |
| 42     | 36974.68 | 39794.83 | 107627.27 | 9.5679044 | 9.5998267  |
| 43     | 37001.70 | 39828.53 | 107639.73 | 9.5682217 | 9.6001943  |
| 44     | 37028.72 | 39862.24 | 107652.21 | 9.5685387 | 9.6005617  |
| 45     | 37055.74 | 39895.96 | 107664.70 | 9.5688555 | 9.6009289  |
| 46     | 37082.76 | 39929.68 | 107677.20 | 9.5691721 | 9.6012958  |
| 47     | 37109.77 | 39963.41 | 107689.71 | 9.5694883 | 9.6016625  |
| 48     | 37136.78 | 39997.15 | 107702.24 | 9.5698043 | 9.6020290  |
| 49     | 37163.79 | 40030.89 | 107714.77 | 9.5701200 | 9.6023953  |
| 50     | 37190.80 | 40064.65 | 107727.32 | 9.5704355 | 9.6027613  |
| 51     | 37217.80 | 40098.41 | 107739.88 | 9.5707506 | 9.6031271  |
| 52     | 37244.80 | 40132.18 | 107752.46 | 9.5710656 | 9.6034927  |
| 53     | 37271.79 | 40165.96 | 107765.04 | 9.5713802 | 9.6038581  |
| 54     | 37298.78 | 40199.75 | 107777.64 | 9.5716946 | 9.6042233  |
| 55     | 37325.77 | 40133.54 | 107790.25 | 9.5720087 | 9.6045882  |
| 56     | 37352.75 | 40267.34 | 107802.87 | 9.5723226 | 9.6049529  |
| 57     | 37379.73 | 40301.15 | 107815.50 | 9.5726362 | 9.6053174  |
| 58     | 37406.71 | 40334.97 | 107828.15 | 9.5729495 | 9.6056817  |
| 59     | 37433.69 | 40368.79 | 107840.80 | 9.5732626 | 9.6060457  |
| 60     | 37460.66 | 40402.62 | 107853.47 | 9.5735754 | 9.6064096  |

## 68 Grad.

| Minute. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|---------|----------|-----------|-----------|-----------|------------|
| 30      | 93041.75 | 253864.79 | 172850.38 | 9.9686779 | 10.4046025 |
| 29      | 93031.09 | 253648.39 | 272649.05 | 9.9686281 | 10.4042321 |
| 28      | 93020.42 | 253432.31 | 272448.04 | 9.9685783 | 10.4038620 |
| 27      | 93009.74 | 253216.55 | 272247.35 | 9.9685284 | 10.4034921 |
| 26      | 92999.05 | 253001.11 | 272046.98 | 9.9684785 | 10.4031224 |
| 25      | 92988.35 | 252785.98 | 271846.93 | 9.9684286 | 10.4027530 |
| 24      | 92977.65 | 252571.17 | 271647.19 | 9.9683786 | 10.4023838 |
| 23      | 92966.94 | 252356.67 | 271447.77 | 9.9683285 | 10.4020148 |
| 22      | 92956.22 | 252142.49 | 271248.66 | 9.9682784 | 10.4016460 |
| 21      | 92945.49 | 251928.63 | 271049.87 | 9.9682283 | 10.4012775 |
| 20      | 92934.75 | 251715.07 | 270851.39 | 9.9681781 | 10.4009092 |
| 19      | 92924.01 | 251501.83 | 270653.23 | 9.9681279 | 10.4005411 |
| 18      | 92913.26 | 251288.90 | 270455.38 | 9.9680777 | 10.4001733 |
| 17      | 92902.50 | 251076.29 | 270257.84 | 9.9680274 | 10.3998057 |
| 16      | 92891.73 | 250863.98 | 270060.61 | 9.9679771 | 10.3994383 |
| 15      | 92880.95 | 250651.98 | 269863.70 | 9.9679267 | 10.3990711 |
| 14      | 92870.17 | 250440.29 | 269667.09 | 9.9678763 | 10.3987042 |
| 13      | 92859.38 | 250228.91 | 269470.79 | 9.9678258 | 10.3983375 |
| 12      | 92848.58 | 250017.84 | 269274.80 | 9.9677753 | 10.3979710 |
| 11      | 92837.77 | 249807.07 | 269079.12 | 9.9677247 | 10.3976047 |
| 10      | 92826.96 | 249596.61 | 268883.74 | 9.9676741 | 10.3972387 |
| 9       | 92816.14 | 249386.45 | 268688.67 | 9.9676235 | 10.3968729 |
| 8       | 92805.31 | 249176.60 | 268493.91 | 9.9675728 | 10.3965073 |
| 7       | 92794.47 | 248967.06 | 268299.45 | 9.9675221 | 10.3961419 |
| 6       | 92783.62 | 248757.81 | 268105.30 | 9.9674713 | 10.3957767 |
| 5       | 92772.77 | 248548.87 | 267911.45 | 9.9674205 | 10.3954118 |
| 4       | 92761.91 | 248340.23 | 267717.90 | 9.9673697 | 10.3950471 |
| 3       | 92751.04 | 248131.90 | 267524.65 | 9.9673188 | 10.3946826 |
| 2       | 92740.16 | 247923.76 | 267331.70 | 9.9672679 | 10.3943183 |
| 1       | 92729.28 | 247716.12 | 267139.06 | 9.9672169 | 10.3939543 |
| 0       | 92718.39 | 247508.69 | 266946.72 | 9.9671659 | 10.3935904 |

## 22 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 37460.66 | 40402.62 | 107853.47 | 9.5735754 | 9.6064066  |
| 1      | 37487.63 | 40436.46 | 107866.16 | 9.5738880 | 9.6067732  |
| 2      | 37514.59 | 40470.31 | 107878.85 | 9.5742003 | 9.6071366  |
| 3      | 37541.56 | 40504.17 | 107891.56 | 9.5745123 | 9.6074997  |
| 4      | 37568.52 | 40538.04 | 107904.27 | 9.5748240 | 9.6078627  |
| 5      | 37595.47 | 40571.91 | 107917.00 | 9.5751356 | 9.6082254  |
| 6      | 37622.43 | 40605.79 | 107929.75 | 9.5754468 | 9.6085880  |
| 7      | 37649.38 | 40639.68 | 107942.50 | 9.5757578 | 9.6089503  |
| 8      | 37676.32 | 40673.58 | 107955.27 | 9.5760685 | 9.6093124  |
| 9      | 37703.27 | 40707.48 | 107968.05 | 9.5763790 | 9.6096742  |
| 10     | 37730.21 | 40741.39 | 107980.84 | 9.5766892 | 9.6100359  |
| 11     | 37757.14 | 40775.31 | 107993.64 | 9.5769991 | 9.6103973  |
| 12     | 37784.08 | 40809.24 | 108006.46 | 9.5773088 | 9.6107586  |
| 13     | 37811.01 | 40843.18 | 108019.28 | 9.5776183 | 9.6111196  |
| 14     | 37837.94 | 40877.13 | 108032.12 | 9.5779275 | 9.6114804  |
| 15     | 37864.86 | 40911.08 | 108044.97 | 9.5782364 | 9.6118409  |
| 16     | 37891.78 | 40945.04 | 108057.84 | 9.5785450 | 9.6122013  |
| 17     | 37918.70 | 40979.01 | 108070.71 | 9.5788535 | 9.6125615  |
| 18     | 37945.62 | 41012.99 | 108083.60 | 9.5791616 | 9.6129214  |
| 19     | 37972.53 | 41046.97 | 108096.50 | 9.5794695 | 9.6132812  |
| 20     | 37999.44 | 41080.97 | 108109.42 | 9.5797772 | 9.6136407  |
| 21     | 38026.34 | 41114.97 | 108122.34 | 9.5800845 | 9.6140000  |
| 22     | 38053.24 | 41148.98 | 108135.28 | 9.5803917 | 9.6143591  |
| 23     | 38080.14 | 41183.00 | 108148.23 | 9.5806986 | 9.6147180  |
| 24     | 38107.04 | 41217.03 | 108161.19 | 9.5810052 | 9.6150766  |
| 25     | 38133.93 | 41251.06 | 108174.17 | 9.5813116 | 9.6154351  |
| 26     | 38160.82 | 41285.10 | 108187.15 | 9.5816177 | 9.6157934  |
| 27     | 38187.70 | 41319.15 | 108200.15 | 9.5819236 | 9.6161514  |
| 28     | 38214.59 | 41353.21 | 108213.16 | 9.5822292 | 9.6165093  |
| 29     | 38241.47 | 41387.28 | 108226.18 | 9.5825345 | 9.6168669  |
| 30     | 38268.34 | 41321.36 | 108239.22 | 9.5828397 | 9.6172243  |

## 67 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 92718.39 | 247508.69 | 266946.72 | 9.9671659 | 10.3935904 |
| 59     | 92707.49 | 247301.55 | 266754.67 | 9.9671148 | 10.3932268 |
| 58     | 92696.58 | 247094.70 | 266562.92 | 9.9670637 | 10.3928634 |
| 57     | 92685.66 | 246888.16 | 266371.48 | 9.9670125 | 10.3925003 |
| 56     | 92674.73 | 246681.91 | 266180.33 | 9.9669614 | 10.3921373 |
| 55     | 92663.80 | 246475.96 | 265989.47 | 9.9669101 | 10.3917746 |
| 54     | 92652.86 | 246270.30 | 265798.91 | 9.9668588 | 10.3914120 |
| 53     | 92641.91 | 246064.94 | 265608.55 | 9.9668075 | 10.3910497 |
| 52     | 92630.96 | 245859.87 | 265418.68 | 9.9667562 | 10.3906876 |
| 51     | 92620.00 | 245655.09 | 265229.01 | 9.9667048 | 10.3903258 |
| 50     | 92609.03 | 245450.61 | 265039.62 | 9.9666533 | 10.3899641 |
| 49     | 92598.05 | 245246.42 | 264850.54 | 9.9666018 | 10.3896027 |
| 48     | 92587.06 | 245042.52 | 264661.74 | 9.9665503 | 10.3892414 |
| 47     | 92576.06 | 244838.91 | 264473.23 | 9.9664987 | 10.3888804 |
| 46     | 92565.06 | 244635.59 | 264285.02 | 9.9664471 | 10.3885196 |
| 45     | 92554.05 | 244432.56 | 264097.09 | 9.9663954 | 10.3881591 |
| 44     | 92543.03 | 244229.82 | 263909.46 | 9.9663437 | 10.3877987 |
| 43     | 92532.00 | 244027.36 | 263722.11 | 9.9662920 | 10.3874385 |
| 42     | 92520.97 | 243825.19 | 263535.05 | 9.9662402 | 10.3870786 |
| 41     | 92509.93 | 243623.31 | 263348.28 | 9.9661884 | 10.3867188 |
| 40     | 92498.88 | 243421.72 | 263161.80 | 9.9661365 | 10.3863593 |
| 39     | 92487.82 | 243220.41 | 262975.60 | 9.9660846 | 10.3860000 |
| 38     | 92476.75 | 243019.38 | 262789.69 | 9.9660326 | 10.3856409 |
| 37     | 92465.68 | 242818.64 | 262604.06 | 9.9659806 | 10.3852820 |
| 36     | 92454.60 | 242618.19 | 262418.72 | 9.9659285 | 10.3849234 |
| 35     | 92443.51 | 242418.01 | 262233.66 | 9.9658764 | 10.3845649 |
| 34     | 92432.41 | 242218.12 | 262048.88 | 9.9658243 | 10.3842066 |
| 33     | 92421.31 | 242018.51 | 261864.39 | 9.9657721 | 10.3838486 |
| 32     | 92410.20 | 241819.18 | 261680.18 | 9.9657199 | 10.3834907 |
| 31     | 92399.08 | 241620.13 | 261496.24 | 9.9656677 | 10.3831331 |
| 30     | 92387.95 | 241421.36 | 261312.59 | 9.9656153 | 10.3827757 |



## 22 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 38268.34 | 41421.36 | 108239.22 | 9.5828397 | 9.6172243  |
| 31     | 38295.22 | 41455.44 | 108252.27 | 9.5831445 | 9.6175815  |
| 32     | 38322.09 | 41489.53 | 108265.33 | 9.5834491 | 9.6179385  |
| 33     | 38348.95 | 41523.63 | 108278.40 | 9.5837535 | 9.6182953  |
| 34     | 38375.82 | 41557.74 | 108291.49 | 9.5840576 | 9.6186519  |
| 35     | 38402.68 | 41591.86 | 108304.58 | 9.5843615 | 9.6190083  |
| 36     | 38429.53 | 41625.99 | 108317.69 | 9.5846651 | 9.6193645  |
| 37     | 38456.39 | 41660.12 | 108330.81 | 9.5849685 | 9.6197205  |
| 38     | 38483.24 | 41694.26 | 108343.95 | 9.5852716 | 9.6200762  |
| 39     | 38510.08 | 41728.41 | 108357.09 | 9.5855745 | 9.6204318  |
| 40     | 38536.93 | 41762.57 | 108370.25 | 9.5858771 | 9.6207872  |
| 41     | 38563.77 | 41796.74 | 108383.42 | 9.5861795 | 9.6211423  |
| 42     | 38590.60 | 41830.91 | 108396.61 | 9.5864816 | 9.6214973  |
| 43     | 38617.44 | 41865.09 | 108409.80 | 9.5867835 | 9.6218520  |
| 44     | 38644.27 | 41899.28 | 108423.01 | 9.5870851 | 9.6222066  |
| 45     | 38671.10 | 41933.48 | 108436.23 | 9.5873865 | 9.6225609  |
| 46     | 38697.92 | 41967.69 | 108449.47 | 9.5876876 | 9.6229150  |
| 47     | 38724.74 | 42001.91 | 108462.71 | 9.5879885 | 9.6232690  |
| 48     | 38751.56 | 42036.13 | 108475.97 | 9.5882892 | 9.6236227  |
| 49     | 38778.37 | 42070.36 | 108489.24 | 9.5885896 | 9.6239763  |
| 50     | 38805.18 | 42104.60 | 108502.52 | 9.5888897 | 9.6243296  |
| 51     | 38831.99 | 42138.85 | 108515.82 | 9.5891897 | 9.6246827  |
| 52     | 38858.80 | 42173.11 | 108529.13 | 9.5894893 | 9.6250356  |
| 53     | 38885.60 | 42207.38 | 108542.45 | 9.5897888 | 9.6253884  |
| 54     | 38912.39 | 42241.66 | 108555.78 | 9.5900880 | 9.6257409  |
| 55     | 38939.19 | 42275.94 | 108569.12 | 9.5903869 | 9.6260932  |
| 56     | 38965.98 | 42310.23 | 108582.48 | 9.5906856 | 9.6264454  |
| 57     | 38992.77 | 42344.53 | 108595.85 | 9.5909841 | 9.6267973  |
| 58     | 39019.55 | 42378.84 | 108609.24 | 9.5912823 | 9.6271491  |
| 59     | 39046.33 | 42413.16 | 108622.63 | 9.5915803 | 9.6275006  |
| 60     | 39073.11 | 42447.49 | 108636.04 | 9.5918780 | 9.6278519  |

# 67 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 97387.95 | 241421.36 | 261312.59 | 9.9656153 | 10.3827757 |
| 29     | 92376.81 | 241222.86 | 261129.22 | 9.9655630 | 10.3824185 |
| 28     | 92365.67 | 241024.65 | 260946.13 | 9.9655106 | 10.3820615 |
| 27     | 92354.52 | 240826.72 | 260763.32 | 9.9654582 | 10.3817047 |
| 26     | 92343.36 | 240629.06 | 260580.78 | 9.9654057 | 10.3813481 |
| 25     | 92332.19 | 240431.68 | 260398.52 | 9.9653532 | 10.3809917 |
| 24     | 92321.02 | 240234.57 | 260216.54 | 9.9653006 | 10.3806355 |
| 23     | 92309.84 | 240037.74 | 260034.84 | 9.9652480 | 10.3802795 |
| 22     | 92298.65 | 239841.18 | 259853.41 | 9.9651953 | 10.3799238 |
| 21     | 92287.45 | 239644.90 | 259672.25 | 9.9651426 | 10.3795682 |
| 20     | 92276.24 | 239448.89 | 259491.37 | 9.9650899 | 10.3792128 |
| 19     | 92265.03 | 239253.16 | 259310.77 | 9.9650371 | 10.3788577 |
| 18     | 92253.81 | 239057.69 | 259130.43 | 9.9649843 | 10.3785027 |
| 17     | 92242.58 | 238862.50 | 258950.37 | 9.9649314 | 10.3781480 |
| 16     | 92231.34 | 238667.58 | 258770.58 | 9.9648785 | 10.3777934 |
| 15     | 92220.09 | 238472.93 | 258591.07 | 9.9648256 | 10.3774391 |
| 14     | 92208.84 | 238278.55 | 258411.82 | 9.9647726 | 10.3770850 |
| 13     | 92197.58 | 238084.44 | 258232.84 | 9.9647195 | 10.3767310 |
| 12     | 92186.31 | 237890.60 | 258054.14 | 9.9646665 | 10.3763773 |
| 11     | 92175.03 | 237697.03 | 257875.70 | 9.9646133 | 10.3760237 |
| 10     | 92163.75 | 237503.72 | 257697.53 | 9.9645602 | 10.3756704 |
| 9      | 92152.46 | 237310.68 | 257519.63 | 9.9645069 | 10.3753173 |
| 8      | 92141.16 | 237117.91 | 257341.99 | 9.9644537 | 10.3749644 |
| 7      | 92129.85 | 236925.40 | 257164.62 | 9.9644004 | 10.3746116 |
| 6      | 92118.54 | 236733.16 | 256987.52 | 9.9643470 | 10.3742591 |
| 5      | 92107.22 | 236541.18 | 256810.69 | 9.9642937 | 10.3739068 |
| 4      | 92095.89 | 236349.46 | 256634.12 | 9.9642402 | 10.3735546 |
| 3      | 92084.55 | 236158.01 | 256457.81 | 9.9641868 | 10.3732027 |
| 2      | 92073.20 | 235966.83 | 256281.76 | 9.9641332 | 10.3728509 |
| 1      | 92061.85 | 235775.90 | 256105.99 | 9.9640797 | 10.3724994 |
| 0      | 92050.49 | 235585.24 | 255930.47 | 9.9640261 | 10.3721481 |

## 23 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 39073.11 | 42447.49 | 108636.04 | 9.5918780 | 9.6278519  |
| 1      | 39099.89 | 42481.82 | 108649.46 | 9.5921755 | 9.6282031  |
| 2      | 39126.66 | 42516.16 | 108662.89 | 9.5924728 | 9.6285540  |
| 3      | 39153.43 | 42550.51 | 108676.34 | 9.5927698 | 9.6289048  |
| 4      | 39180.19 | 42584.87 | 108689.79 | 9.5930666 | 9.6292553  |
| 5      | 39206.95 | 42619.24 | 108703.26 | 9.5933631 | 9.6296057  |
| 6      | 39233.71 | 42653.62 | 108716.75 | 9.5936594 | 9.6299558  |
| 7      | 39260.47 | 42688.00 | 108730.24 | 9.5939555 | 9.6303058  |
| 8      | 39287.22 | 42722.39 | 108743.75 | 9.5942513 | 9.6306556  |
| 9      | 39313.97 | 42756.79 | 108757.27 | 9.5945469 | 9.6310052  |
| 10     | 39340.71 | 42791.20 | 108770.80 | 9.5948422 | 9.6313545  |
| 11     | 39367.45 | 42725.62 | 108784.35 | 9.5951373 | 9.6317037  |
| 12     | 39394.19 | 42860.05 | 108797.91 | 9.5954322 | 9.6320527  |
| 13     | 39420.93 | 42894.49 | 108811.48 | 9.5957268 | 9.6324015  |
| 14     | 39447.66 | 42928.94 | 108825.06 | 9.5960212 | 9.6327501  |
| 15     | 39474.39 | 42963.39 | 108838.66 | 9.5963154 | 9.6330985  |
| 16     | 39501.11 | 42997.85 | 108852.27 | 9.5966093 | 9.6334468  |
| 17     | 39527.83 | 43032.32 | 108865.89 | 9.5969030 | 9.6337948  |
| 18     | 39554.55 | 43066.80 | 108879.52 | 9.5971965 | 9.6341426  |
| 19     | 39581.27 | 43101.29 | 108893.17 | 9.5974897 | 9.6344903  |
| 20     | 39607.98 | 43135.79 | 108906.83 | 9.5977827 | 9.6348378  |
| 21     | 39634.69 | 43170.30 | 108920.50 | 9.5980754 | 9.6351850  |
| 22     | 39661.39 | 43204.81 | 108934.18 | 9.5983679 | 9.6355321  |
| 23     | 39688.09 | 43239.33 | 108947.88 | 9.5986602 | 9.6358790  |
| 24     | 39714.79 | 43273.86 | 108961.59 | 9.5989523 | 9.6362257  |
| 25     | 39741.48 | 43308.40 | 108975.31 | 9.5992441 | 9.6365722  |
| 26     | 39768.17 | 43342.95 | 108989.04 | 9.5995357 | 9.6369185  |
| 27     | 39794.86 | 43377.51 | 109002.79 | 9.5998271 | 9.6372646  |
| 28     | 39821.55 | 43412.08 | 109016.55 | 9.6001181 | 9.6376106  |
| 29     | 39848.23 | 43446.66 | 109030.32 | 9.6004090 | 9.6379563  |
| 30     | 39874.91 | 43481.24 | 109044.11 | 9.6006997 | 9.6383019  |

# 66 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 92050.49 | 235585.24 | 255930.47 | 9.9640261 | 10.3721481 |
| 59     | 92039.12 | 235394.83 | 255755.21 | 9.9639724 | 10.3717969 |
| 58     | 92027.74 | 235204.69 | 255580.22 | 9.9639187 | 10.3714460 |
| 57     | 92016.35 | 235014.81 | 255405.48 | 9.9638650 | 10.3710952 |
| 56     | 92004.96 | 234825.19 | 255231.01 | 9.9638112 | 10.3707447 |
| 55     | 91993.56 | 234635.82 | 255056.80 | 9.9637574 | 10.3703943 |
| 54     | 91982.15 | 234446.72 | 254882.84 | 9.9637036 | 10.3700442 |
| 53     | 91970.73 | 234257.87 | 254709.15 | 9.9636496 | 10.3696942 |
| 52     | 91959.31 | 234069.28 | 254535.71 | 9.9635957 | 10.3693444 |
| 51     | 91947.88 | 233880.95 | 254362.53 | 9.9635417 | 10.3689948 |
| 50     | 91936.44 | 233692.87 | 254189.61 | 9.9634877 | 10.3686455 |
| 49     | 91924.99 | 233505.05 | 254016.94 | 9.9634336 | 10.3682963 |
| 48     | 91913.53 | 233317.48 | 253844.53 | 9.9633795 | 10.3679473 |
| 47     | 91902.07 | 233130.17 | 253672.38 | 9.9633253 | 10.3675985 |
| 46     | 91890.60 | 232943.11 | 253500.48 | 9.9632711 | 10.3672499 |
| 45     | 91879.12 | 232756.30 | 253328.83 | 9.9632168 | 10.3669015 |
| 44     | 91867.63 | 232569.75 | 253157.44 | 9.9631625 | 10.3665532 |
| 43     | 91856.14 | 232383.45 | 252986.30 | 9.9631082 | 10.3662052 |
| 42     | 91844.64 | 232197.40 | 252815.41 | 9.9630538 | 10.3658574 |
| 41     | 91833.13 | 232011.60 | 252644.78 | 9.9629994 | 10.3655097 |
| 40     | 91821.61 | 231826.06 | 252474.40 | 9.9629449 | 10.3651622 |
| 39     | 91810.08 | 231640.76 | 252304.26 | 9.9628904 | 10.3648150 |
| 38     | 91798.55 | 231455.71 | 252134.38 | 9.9628358 | 10.3644679 |
| 37     | 91787.01 | 231270.91 | 251964.75 | 9.9627812 | 10.3641210 |
| 36     | 91775.46 | 231086.36 | 251795.37 | 9.9627266 | 10.3637743 |
| 35     | 91763.90 | 230902.06 | 251626.24 | 9.9626719 | 10.3634278 |
| 34     | 91752.34 | 230718.01 | 251457.35 | 9.9626172 | 10.3630815 |
| 33     | 91740.77 | 230534.20 | 251288.71 | 9.9625624 | 10.3627354 |
| 32     | 91729.19 | 230350.64 | 251120.32 | 9.9625076 | 10.3623894 |
| 31     | 91717.60 | 230167.32 | 250952.18 | 9.9624527 | 10.3620437 |
| 30     | 91706.01 | 229984.25 | 250784.28 | 9.9623978 | 10.3616981 |

## 23 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | L. g. Sin. | Log. Tang. |
|--------|----------|----------|-----------|------------|------------|
| 30     | 39874.91 | 43481.24 | 109044.11 | 9.6006997  | 9.6383019  |
| 31     | 39901.58 | 43515.83 | 109057.91 | 9.6009901  | 9.6386473  |
| 32     | 39928.25 | 43550.43 | 109071.72 | 9.6012803  | 9.6389925  |
| 33     | 39954.92 | 43585.04 | 109085.54 | 9.6015703  | 9.6393375  |
| 34     | 39981.58 | 43619.66 | 109099.38 | 9.6018600  | 9.6396823  |
| 35     | 40008.24 | 43654.29 | 109113.23 | 9.6021495  | 9.6400269  |
| 36     | 40034.90 | 43688.93 | 109127.09 | 9.6024388  | 9.6403714  |
| 37     | 40061.56 | 43723.58 | 109140.97 | 9.6027278  | 9.6407156  |
| 38     | 40088.21 | 43758.23 | 109154.86 | 9.6030166  | 9.6410597  |
| 39     | 40114.86 | 43792.89 | 109168.76 | 9.6033052  | 9.6414036  |
| 40     | 40141.50 | 43827.58 | 109182.67 | 9.6035936  | 9.6417473  |
| 41     | 40168.14 | 43862.24 | 109196.59 | 9.6038817  | 9.6420908  |
| 42     | 40194.78 | 43896.93 | 109210.53 | 9.6041696  | 9.6424342  |
| 43     | 40221.41 | 43931.63 | 109224.48 | 9.6044573  | 9.6427773  |
| 44     | 40248.04 | 43966.34 | 109238.45 | 9.6047448  | 9.6431203  |
| 45     | 40274.67 | 44001.06 | 109252.43 | 9.6050320  | 9.6434631  |
| 46     | 40301.29 | 44035.78 | 109266.42 | 9.6053190  | 9.6438057  |
| 47     | 40327.91 | 44070.51 | 109280.42 | 9.6056057  | 9.6441481  |
| 48     | 40354.53 | 44105.25 | 109294.44 | 9.6058923  | 9.6444903  |
| 49     | 40381.14 | 44140.00 | 109308.47 | 9.6061786  | 9.6448324  |
| 50     | 40407.75 | 44174.76 | 109322.51 | 9.6064647  | 9.6451743  |
| 51     | 40434.36 | 44209.53 | 109336.56 | 9.6067506  | 9.6455160  |
| 52     | 40460.96 | 44244.31 | 109350.63 | 9.6070362  | 9.6458575  |
| 53     | 40487.56 | 44279.10 | 109364.71 | 9.6073216  | 9.6461988  |
| 54     | 40514.16 | 44313.90 | 109378.80 | 9.6076068  | 9.6465400  |
| 55     | 40540.75 | 44348.71 | 109392.91 | 9.6078918  | 9.6468810  |
| 56     | 40567.34 | 44383.53 | 109407.03 | 9.6081765  | 9.6472217  |
| 57     | 40593.93 | 44418.35 | 109421.16 | 9.6084611  | 9.6475624  |
| 58     | 40620.51 | 44453.18 | 109435.30 | 9.6087454  | 9.6479028  |
| 59     | 40647.09 | 44488.02 | 109449.46 | 9.6090294  | 9.6482431  |
| 60     | 40673.66 | 44522.87 | 109463.63 | 9.6093133  | 9.6485831  |

# 66 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 91706.01 | 229984.25 | 250784.28 | 9.9623978 | 10.3616981 |
| 29     | 91694.41 | 229801.43 | 250616.63 | 9.9623428 | 10.3613527 |
| 28     | 91682.80 | 229618.85 | 250449.23 | 9.9622878 | 10.3610075 |
| 27     | 91671.18 | 229436.51 | 250282.07 | 9.9622328 | 10.3606625 |
| 26     | 91659.55 | 229254.42 | 250115.15 | 9.9621777 | 10.3603177 |
| 25     | 91647.91 | 229072.57 | 249948.47 | 9.9621226 | 10.3599731 |
| 24     | 91636.27 | 228890.96 | 249782.04 | 9.9620674 | 10.3596286 |
| 23     | 91624.62 | 228709.59 | 249615.86 | 9.9620122 | 10.3592844 |
| 22     | 91612.96 | 228528.46 | 249449.91 | 9.9619569 | 10.3589403 |
| 21     | 91601.30 | 228347.58 | 249284.21 | 9.9619016 | 10.3585964 |
| 20     | 91589.63 | 228166.93 | 249118.74 | 9.9618463 | 10.3582527 |
| 19     | 91577.95 | 227986.53 | 248953.52 | 9.9617909 | 10.3579092 |
| 18     | 91566.26 | 227806.36 | 248788.54 | 9.9617355 | 10.3575658 |
| 17     | 91554.56 | 227626.43 | 248623.80 | 9.9616800 | 10.3572227 |
| 16     | 91542.86 | 227446.74 | 248459.29 | 9.9616245 | 10.3568797 |
| 15     | 91531.15 | 227267.29 | 248295.03 | 9.9615689 | 10.3565369 |
| 14     | 91519.43 | 227088.07 | 248131.00 | 9.9615133 | 10.3561943 |
| 13     | 91507.70 | 226909.09 | 247967.21 | 9.9614576 | 10.3558519 |
| 12     | 91495.96 | 226730.35 | 247803.66 | 9.9614020 | 10.3555097 |
| 11     | 91484.22 | 226551.84 | 247640.34 | 9.9613463 | 10.3551676 |
| 10     | 91472.47 | 226373.57 | 247477.26 | 9.9612904 | 10.3548257 |
| 9      | 91460.71 | 226195.53 | 247314.42 | 9.9612346 | 10.3544840 |
| 8      | 91448.95 | 226017.73 | 247151.81 | 9.9611787 | 10.3541425 |
| 7      | 91437.18 | 225840.16 | 246989.43 | 9.9611228 | 10.3538012 |
| 6      | 91425.40 | 225662.83 | 246827.29 | 9.9610668 | 10.3534600 |
| 5      | 91413.61 | 225485.72 | 246665.38 | 9.9610108 | 10.3531190 |
| 4      | 91401.81 | 225308.85 | 246503.71 | 9.9609548 | 10.3527783 |
| 3      | 91390.00 | 225132.21 | 246342.27 | 9.9608987 | 10.3524376 |
| 2      | 91378.19 | 224955.80 | 246181.06 | 9.9608426 | 10.3520972 |
| 1      | 91366.37 | 224779.62 | 246020.08 | 9.9607864 | 10.3517569 |
| 0      | 91354.54 | 224603.68 | 245859.33 | 9.9607302 | 10.3514169 |

## 24 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 40673.66 | 44522.87 | 109463.63 | 9.6093133 | 9.6485831  |
| 1      | 40700.23 | 44557.73 | 109477.81 | 9.6095969 | 9.6489230  |
| 2      | 40726.80 | 44592.60 | 109492.01 | 9.6098803 | 9.6492628  |
| 3      | 40753.37 | 44627.48 | 109506.22 | 9.6101635 | 9.6496023  |
| 4      | 40779.93 | 44662.37 | 109520.44 | 9.6104465 | 9.6499417  |
| 5      | 40806.49 | 44697.27 | 109534.67 | 9.6107293 | 9.6502809  |
| 6      | 40833.05 | 44732.17 | 109548.92 | 9.6110118 | 9.6506199  |
| 7      | 40859.60 | 44767.08 | 109563.18 | 9.6112941 | 9.6509587  |
| 8      | 40886.15 | 44802.00 | 109577.46 | 9.6115762 | 9.6512974  |
| 9      | 40912.69 | 44836.93 | 109591.74 | 9.6118580 | 9.6516359  |
| 10     | 40939.23 | 44871.87 | 109606.04 | 9.6121397 | 9.6519742  |
| 11     | 40965.77 | 44906.82 | 109620.36 | 9.6124211 | 9.6523123  |
| 12     | 40992.30 | 44941.78 | 109634.68 | 9.6127023 | 9.6526503  |
| 13     | 41018.83 | 44976.75 | 109649.02 | 9.6129833 | 9.6529881  |
| 14     | 41045.36 | 45011.73 | 109663.37 | 9.6132641 | 9.6533257  |
| 15     | 41071.89 | 45046.72 | 109677.74 | 9.6135446 | 9.6536631  |
| 16     | 41098.41 | 45081.72 | 109692.12 | 9.6138250 | 9.6540004  |
| 17     | 41124.93 | 45116.73 | 109706.51 | 9.6141051 | 9.6543375  |
| 18     | 41151.44 | 45151.74 | 109720.91 | 9.6143850 | 9.6546744  |
| 19     | 41177.95 | 45186.76 | 109735.33 | 9.6146647 | 9.6550112  |
| 20     | 41204.46 | 45221.79 | 109749.76 | 9.6149441 | 9.6553477  |
| 21     | 41230.96 | 45256.83 | 109764.20 | 9.6152234 | 9.6556841  |
| 22     | 41257.46 | 45291.88 | 109778.66 | 9.6155024 | 9.6560204  |
| 23     | 41283.95 | 45326.94 | 109793.13 | 9.6157812 | 9.6563564  |
| 24     | 41310.44 | 45362.01 | 109807.61 | 9.6160598 | 9.6566923  |
| 25     | 41336.93 | 45397.09 | 109822.11 | 9.6163382 | 9.6570280  |
| 26     | 41363.42 | 45432.18 | 109836.62 | 9.6166164 | 9.6573636  |
| 27     | 41389.90 | 45467.28 | 109851.14 | 9.6168944 | 9.6576989  |
| 28     | 41416.38 | 45502.39 | 109865.68 | 9.6171721 | 9.6580341  |
| 29     | 41442.85 | 45537.51 | 109880.23 | 9.6174496 | 9.6583692  |
| 30     | 41469.32 | 45572.64 | 109894.79 | 9.6177270 | 9.6587041  |

# 65 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 91354.54 | 224603.68 | 245859.33 | 9.9607302 | 10.3514169 |
| 59     | 91342.71 | 224427.96 | 245698.82 | 9.9606739 | 10.3510770 |
| 58     | 91330.87 | 224252.47 | 245538.53 | 9.9606176 | 10.3507372 |
| 57     | 91519.02 | 224077.21 | 245378.48 | 9.9605612 | 10.3503977 |
| 56     | 91307.16 | 223902.18 | 245218.65 | 9.9605048 | 10.3500583 |
| 55     | 91295.29 | 223727.38 | 245059.05 | 9.9604484 | 10.3497191 |
| 54     | 91283.42 | 223552.80 | 244899.68 | 9.9603919 | 10.3493801 |
| 53     | 91271.54 | 223378.45 | 244740.54 | 9.9603354 | 10.3490413 |
| 52     | 91259.65 | 223204.33 | 244581.63 | 9.9602788 | 10.3487026 |
| 51     | 91247.75 | 223030.43 | 244422.94 | 9.9602222 | 10.3483641 |
| 50     | 91235.84 | 222856.76 | 244264.48 | 9.9601655 | 10.3480258 |
| 49     | 91223.93 | 222683.31 | 244106.24 | 9.9601088 | 10.3476877 |
| 48     | 91212.01 | 222510.09 | 243948.23 | 9.9600520 | 10.3473497 |
| 47     | 91200.08 | 222337.09 | 243790.45 | 9.9599952 | 10.3470119 |
| 46     | 91188.14 | 222164.32 | 243632.89 | 9.9599384 | 10.3466743 |
| 45     | 91176.20 | 221991.77 | 243475.55 | 9.9598815 | 10.3463369 |
| 44     | 91164.25 | 221819.44 | 243318.44 | 9.9598246 | 10.3459996 |
| 43     | 91152.29 | 221647.33 | 243161.55 | 9.9597676 | 10.3456625 |
| 42     | 91140.32 | 221475.45 | 243004.89 | 9.9597106 | 10.3453256 |
| 41     | 91128.35 | 221303.79 | 242848.44 | 9.9596535 | 10.3449888 |
| 40     | 91116.37 | 221132.34 | 242692.22 | 9.9595964 | 10.3446523 |
| 39     | 91104.38 | 220961.12 | 242536.22 | 9.9595393 | 10.3443159 |
| 38     | 91092.38 | 220790.12 | 242380.44 | 9.9594821 | 10.3439796 |
| 37     | 91080.38 | 220619.34 | 242224.88 | 9.9594248 | 10.3436436 |
| 36     | 91068.37 | 220448.78 | 242069.54 | 9.9593675 | 10.3433077 |
| 35     | 91056.35 | 220278.43 | 241914.42 | 9.9593102 | 10.3429720 |
| 34     | 91044.32 | 220108.31 | 241759.52 | 9.9592528 | 10.3426364 |
| 33     | 91032.28 | 219938.40 | 241604.84 | 9.9591954 | 10.3423011 |
| 32     | 91020.24 | 219768.71 | 241450.38 | 9.9591380 | 10.3419659 |
| 31     | 91008.19 | 219599.23 | 241296.13 | 9.9590805 | 10.3416308 |
| 30     | 90996.13 | 219429.97 | 241142.10 | 9.9590229 | 10.3412960 |



## 24 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 41469.32 | 45572.64 | 109894.79 | 9.6177270 | 9.6587041  |
| 31     | 41495.79 | 45607.77 | 109909.36 | 9.6180041 | 9.6590387  |
| 32     | 41522.26 | 45642.91 | 109923.95 | 9.6182809 | 9.6593733  |
| 33     | 41548.72 | 45678.06 | 109938.55 | 9.6185576 | 9.6597076  |
| 34     | 41575.18 | 45713.22 | 109953.17 | 9.6188341 | 9.6600418  |
| 35     | 41601.63 | 45748.39 | 109967.79 | 9.6191103 | 9.6603758  |
| 36     | 41628.08 | 45783.57 | 109982.43 | 9.6193864 | 9.6607097  |
| 37     | 41654.53 | 45818.76 | 109997.09 | 9.6196622 | 9.6610434  |
| 38     | 41680.97 | 45853.96 | 110011.76 | 9.6199378 | 9.6613769  |
| 39     | 41707.41 | 45889.17 | 110026.44 | 9.6202132 | 9.6617103  |
| 40     | 41733.85 | 45924.39 | 110041.13 | 9.6204884 | 9.6620434  |
| 41     | 41760.28 | 45959.62 | 110055.84 | 9.6207635 | 9.6623765  |
| 42     | 41786.71 | 45994.86 | 110070.56 | 9.6210382 | 9.6627093  |
| 43     | 41813.13 | 46030.11 | 110085.29 | 9.6213127 | 9.6630420  |
| 44     | 41839.55 | 46065.37 | 110100.04 | 9.6215871 | 9.6633745  |
| 45     | 41865.97 | 46100.64 | 110114.80 | 9.6218612 | 9.6637069  |
| 46     | 41892.39 | 46135.91 | 110129.57 | 9.6221351 | 9.6640391  |
| 47     | 41918.80 | 46171.19 | 110144.36 | 9.6224088 | 9.6643711  |
| 48     | 41945.21 | 46206.48 | 110159.16 | 9.6226824 | 9.6647030  |
| 49     | 41971.61 | 46241.78 | 110173.97 | 9.6229557 | 9.6650346  |
| 50     | 41998.01 | 46277.09 | 110188.79 | 9.6232287 | 9.6653662  |
| 51     | 42024.41 | 46312.42 | 110203.63 | 9.6235016 | 9.6656975  |
| 52     | 42050.80 | 46347.76 | 110218.49 | 9.6237743 | 9.6660288  |
| 53     | 42077.19 | 46383.11 | 110233.35 | 9.6240467 | 9.6663598  |
| 54     | 42103.58 | 46418.46 | 110248.23 | 9.6243190 | 9.6666907  |
| 55     | 42129.96 | 46453.82 | 110263.13 | 9.6245911 | 9.6670214  |
| 56     | 42156.34 | 46489.19 | 110278.03 | 9.6248629 | 9.6673519  |
| 57     | 42182.72 | 46524.57 | 110292.95 | 9.6251346 | 9.6676823  |
| 58     | 42209.09 | 46559.96 | 110307.89 | 9.6254060 | 9.6680126  |
| 59     | 42235.46 | 46595.36 | 110322.83 | 9.6256772 | 9.6683426  |
| 60     | 42261.83 | 46630.77 | 110337.79 | 9.6259483 | 9.6686725  |

# 65 Grad.

| Minur. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 90996.13 | 219429.97 | 241142.10 | 9.9590229 | 10.3412960 |
| 29     | 90984.06 | 219260.93 | 240988.29 | 9.9589653 | 10.3400613 |
| 28     | 90971.98 | 219092.10 | 240834.69 | 9.9589077 | 10.3400267 |
| 27     | 90959.90 | 218923.49 | 240681.32 | 9.9588500 | 10.3402924 |
| 26     | 90947.81 | 218755.10 | 240528.15 | 9.9587923 | 10.3399582 |
| 25     | 90935.71 | 218586.91 | 240375.20 | 9.9587345 | 10.3396242 |
| 24     | 90923.61 | 218418.94 | 240222.47 | 9.9586767 | 10.3392903 |
| 23     | 90911.50 | 218251.19 | 240069.95 | 9.9586188 | 10.3389566 |
| 22     | 90899.38 | 218083.64 | 239917.64 | 9.9585609 | 10.3386231 |
| 21     | 90887.25 | 217916.31 | 239765.55 | 9.9585030 | 10.3382897 |
| 20     | 90875.11 | 217749.20 | 239613.67 | 9.9584450 | 10.3379566 |
| 19     | 90862.97 | 217582.29 | 239462.01 | 9.9583869 | 10.3376235 |
| 18     | 90850.82 | 217415.59 | 239310.55 | 9.9583288 | 10.3372907 |
| 17     | 90838.66 | 217249.11 | 239159.31 | 9.9582707 | 10.3369580 |
| 16     | 90826.49 | 217082.83 | 239008.28 | 9.9582125 | 10.3366255 |
| 15     | 90814.32 | 216916.77 | 238857.46 | 9.9581543 | 10.3362931 |
| 14     | 90802.14 | 216750.91 | 238706.85 | 9.9580961 | 10.3359609 |
| 13     | 90789.95 | 216585.27 | 238556.45 | 9.9580378 | 10.3356289 |
| 12     | 90777.75 | 216419.83 | 238406.25 | 9.9579794 | 10.3352970 |
| 11     | 90765.54 | 216254.60 | 238256.27 | 9.9579210 | 10.3349654 |
| 10     | 90753.33 | 216089.58 | 238106.50 | 9.9578626 | 10.3346338 |
| 9      | 90741.11 | 215924.76 | 237956.93 | 9.9578041 | 10.3343025 |
| 8      | 90728.88 | 215760.15 | 237807.58 | 9.9577456 | 10.3339712 |
| 7      | 90716.64 | 215595.75 | 237658.43 | 9.9576870 | 10.3336402 |
| 6      | 90704.40 | 215431.56 | 237509.49 | 9.9576284 | 10.3333093 |
| 5      | 90692.15 | 215267.57 | 237360.75 | 9.9575697 | 10.3329786 |
| 4      | 90679.89 | 215103.78 | 237212.22 | 9.9575110 | 10.3326481 |
| 3      | 90667.62 | 214940.20 | 237063.90 | 9.9574522 | 10.3323177 |
| 2      | 90655.35 | 214776.83 | 236915.78 | 9.9573934 | 10.3319874 |
| 1      | 90643.07 | 214613.66 | 236767.87 | 9.9573346 | 10.3316574 |
| 0      | 90630.78 | 214450.69 | 236620.16 | 9.9572757 | 10.3313275 |

## 25 Grad.

| Munt. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|-------|----------|----------|-----------|-----------|------------|
| 0     | 42261.83 | 46630.77 | 110337.79 | 9.6259483 | 9.6686725  |
| 1     | 42288.19 | 46666.19 | 110352.77 | 9.6262191 | 9.6690023  |
| 2     | 42314.55 | 46701.62 | 110367.75 | 9.6264897 | 9.6693319  |
| 3     | 42340.90 | 46737.06 | 110382.75 | 9.6267601 | 9.6696613  |
| 4     | 42367.25 | 46772.51 | 110397.77 | 9.6270303 | 9.6699906  |
| 5     | 42393.60 | 46807.97 | 110412.79 | 9.6273003 | 9.6703197  |
| 6     | 42419.94 | 46843.43 | 110427.83 | 9.6275701 | 9.6706486  |
| 7     | 42446.28 | 46878.90 | 110442.89 | 9.6278397 | 9.6709774  |
| 8     | 42472.62 | 46914.38 | 110457.95 | 9.6281090 | 9.6713060  |
| 9     | 42498.95 | 46949.88 | 110473.03 | 9.6283782 | 9.6716345  |
| 10    | 42525.28 | 46985.39 | 110488.13 | 9.6286472 | 9.6719628  |
| 11    | 42551.61 | 47020.90 | 110503.24 | 9.6289160 | 9.6722910  |
| 12    | 42577.93 | 47056.43 | 110518.36 | 9.6291845 | 9.6726190  |
| 13    | 42604.25 | 47091.96 | 110533.49 | 9.6294529 | 9.6729468  |
| 14    | 42630.56 | 47127.51 | 110548.64 | 9.6297211 | 9.6732745  |
| 15    | 42656.87 | 47163.06 | 110563.80 | 9.6299890 | 9.6736020  |
| 16    | 42683.18 | 47198.63 | 110578.98 | 9.6302568 | 9.6739294  |
| 17    | 42709.49 | 47234.20 | 110594.17 | 9.6305243 | 9.6742566  |
| 18    | 42735.79 | 47269.78 | 110609.37 | 9.6307917 | 9.6745836  |
| 19    | 42762.09 | 47305.38 | 110624.58 | 9.6310589 | 9.6749105  |
| 20    | 42788.38 | 47340.98 | 110639.81 | 9.6313258 | 9.6752372  |
| 21    | 42814.67 | 47376.59 | 110655.06 | 9.6315926 | 9.6755638  |
| 22    | 42840.95 | 47412.22 | 110670.31 | 9.6318591 | 9.6758902  |
| 23    | 42867.23 | 47447.85 | 110685.58 | 9.6321255 | 9.6762165  |
| 24    | 42893.51 | 47483.49 | 110700.87 | 9.6323916 | 9.6765426  |
| 25    | 42919.79 | 47519.14 | 110716.16 | 9.6326576 | 9.6768686  |
| 26    | 42946.06 | 47554.81 | 110731.47 | 9.6329233 | 9.6771944  |
| 27    | 42972.33 | 47590.48 | 110746.80 | 9.6331889 | 9.6775201  |
| 28    | 42998.59 | 47626.16 | 110762.14 | 9.6334542 | 9.6778456  |
| 29    | 43024.85 | 47661.85 | 110777.49 | 9.6337194 | 9.6781709  |
| 30    | 43051.11 | 47697.55 | 110792.85 | 9.6339844 | 9.6784961  |

# 64 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 90630.78 | 214450.69 | 236620.16 | 9.9572757 | 10.3313675 |
| 59     | 90618.48 | 214287.93 | 236472.65 | 9.9572168 | 10.3309977 |
| 58     | 90606.17 | 214125.37 | 236325.35 | 9.9571578 | 10.3306681 |
| 57     | 90593.86 | 213963.01 | 236178.26 | 9.9570988 | 10.3303387 |
| 56     | 90581.54 | 213800.85 | 236031.36 | 9.9570397 | 10.3300094 |
| 55     | 90569.21 | 213638.89 | 235884.67 | 9.9569806 | 10.3296803 |
| 54     | 90556.88 | 213477.14 | 235738.18 | 9.9569215 | 10.3293514 |
| 53     | 90544.54 | 213315.59 | 235591.89 | 9.9568623 | 10.3290226 |
| 52     | 90532.19 | 213154.23 | 235445.81 | 9.9568030 | 10.3286940 |
| 51     | 90519.83 | 212993.08 | 235299.92 | 9.9567437 | 10.3283655 |
| 50     | 90507.46 | 212832.13 | 235154.24 | 9.9566844 | 10.3280372 |
| 49     | 90495.09 | 212671.37 | 235008.75 | 9.9566250 | 10.3277090 |
| 48     | 90482.71 | 212510.82 | 234863.47 | 9.9565656 | 10.3273810 |
| 47     | 90470.32 | 212350.46 | 234718.38 | 9.9565061 | 10.3270532 |
| 46     | 90457.92 | 212190.30 | 234573.49 | 9.9564466 | 10.3267255 |
| 45     | 90445.51 | 212030.34 | 234428.80 | 9.9563870 | 10.7263980 |
| 44     | 90433.10 | 211870.57 | 234284.31 | 9.9563274 | 10.3260706 |
| 43     | 90420.68 | 211711.01 | 234140.02 | 9.9562678 | 10.3257434 |
| 42     | 90408.25 | 211551.64 | 233995.93 | 9.9562081 | 10.3254164 |
| 41     | 90395.82 | 211392.46 | 233852.03 | 9.9561483 | 10.3250895 |
| 40     | 90383.38 | 211233.48 | 233708.33 | 9.9560886 | 10.3247628 |
| 39     | 90370.93 | 211074.70 | 233564.82 | 9.9560287 | 10.3244362 |
| 38     | 90358.47 | 210916.11 | 233421.52 | 9.9559689 | 10.3241097 |
| 37     | 90346.00 | 210757.71 | 233278.40 | 9.9559089 | 10.3237835 |
| 36     | 90333.53 | 210599.51 | 233135.48 | 9.9558490 | 10.3234574 |
| 35     | 90321.05 | 210441.50 | 232992.76 | 9.9557890 | 10.3231314 |
| 34     | 90308.56 | 210283.69 | 232850.23 | 9.9557289 | 10.3228056 |
| 33     | 90296.06 | 210126.07 | 232707.90 | 9.9556688 | 10.3224799 |
| 32     | 90283.56 | 209968.64 | 232565.75 | 9.9556087 | 10.3221544 |
| 31     | 90271.05 | 209811.40 | 232423.81 | 9.9555485 | 10.3218291 |
| 30     | 90258.53 | 209654.36 | 232282.05 | 9.9554882 | 10.3215039 |

## 25 Grad.

| Minut. | Sinus.   | Tang.    | secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 43051.11 | 47697.55 | 110792.85 | 9.6339844 | 9.6784961  |
| 31     | 43077.36 | 47733.26 | 110808.23 | 9.6342491 | 9.6788211  |
| 32     | 43103.61 | 47768.99 | 110823.63 | 9.6345137 | 9.6791460  |
| 33     | 43129.86 | 47804.72 | 110839.03 | 9.6347780 | 9.6794708  |
| 34     | 43156.10 | 47840.46 | 110854.45 | 9.6350422 | 9.6797953  |
| 35     | 43182.34 | 47876.21 | 110869.89 | 9.6353062 | 9.6801198  |
| 36     | 43208.57 | 47911.97 | 110885.33 | 9.6355699 | 9.6804440  |
| 37     | 43234.80 | 47947.74 | 110900.79 | 9.6358335 | 9.6807682  |
| 38     | 43261.03 | 47983.52 | 110916.27 | 9.6360969 | 9.6810921  |
| 39     | 43287.26 | 48019.32 | 110931.76 | 9.6363601 | 9.6814160  |
| 40     | 43313.48 | 48055.12 | 110947.26 | 9.6366231 | 9.6817396  |
| 41     | 43339.70 | 48090.93 | 110962.77 | 9.6368859 | 9.6820632  |
| 42     | 43365.91 | 48126.75 | 110978.30 | 9.6371484 | 9.6823865  |
| 43     | 43392.12 | 48162.58 | 110993.85 | 9.6374108 | 9.6827098  |
| 44     | 43418.33 | 48198.42 | 111009.41 | 9.6376731 | 9.6830328  |
| 45     | 43444.53 | 48234.27 | 111024.98 | 9.6379351 | 9.6833557  |
| 46     | 43470.73 | 48270.14 | 111040.56 | 9.6381969 | 9.6836785  |
| 47     | 43496.92 | 48306.01 | 111056.16 | 9.6384585 | 9.6840011  |
| 48     | 43523.11 | 48341.89 | 111071.77 | 9.6387199 | 9.6843236  |
| 49     | 43549.30 | 48377.78 | 111087.40 | 9.7389812 | 9.6846459  |
| 50     | 43575.48 | 48413.68 | 111103.04 | 9.6392422 | 9.6849681  |
| 51     | 43601.66 | 48449.59 | 111118.69 | 9.6395030 | 9.6852901  |
| 52     | 43627.84 | 48485.52 | 111134.36 | 9.6397637 | 9.6856120  |
| 53     | 43654.01 | 48521.45 | 111150.04 | 9.6400241 | 9.6859338  |
| 54     | 43680.18 | 48557.39 | 111165.73 | 9.6402844 | 9.6862553  |
| 55     | 43706.34 | 48593.34 | 111181.44 | 9.6405445 | 9.6865768  |
| 56     | 43732.50 | 48629.31 | 111197.16 | 9.6408044 | 9.6868981  |
| 57     | 43758.66 | 48665.28 | 111212.90 | 9.6410640 | 9.6872192  |
| 58     | 43784.82 | 48701.26 | 111228.65 | 9.6413235 | 9.6875402  |
| 59     | 43810.97 | 48737.26 | 111244.42 | 9.6415828 | 9.6878611  |
| 90     | 43837.12 | 48773.26 | 111260.19 | 9.6418420 | 9.6881818  |

# 64 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 90258.53 | 209654.36 | 232282.05 | 9.9554882 | 10.3215039 |
| 29     | 90246.00 | 209497.51 | 232140.49 | 9.9554280 | 10.3211789 |
| 28     | 90233.47 | 209340.84 | 231999.11 | 9.9553676 | 10.3208540 |
| 27     | 90220.93 | 209184.37 | 231857.94 | 9.9553073 | 10.3205292 |
| 26     | 90208.38 | 209028.09 | 231716.95 | 9.9552469 | 10.3202047 |
| 25     | 90195.82 | 208872.00 | 231576.15 | 9.9551864 | 10.3198803 |
| 24     | 90183.25 | 208716.10 | 231435.54 | 9.9551259 | 10.3195560 |
| 23     | 90170.68 | 208560.39 | 231295.13 | 9.9550653 | 10.3192318 |
| 22     | 90158.10 | 208404.86 | 231154.90 | 9.9550047 | 10.3189079 |
| 21     | 90145.51 | 208249.53 | 231014.86 | 9.9549441 | 10.3185840 |
| 20     | 90132.91 | 208094.38 | 230875.01 | 9.9548834 | 10.3182604 |
| 19     | 90120.31 | 207939.42 | 230735.35 | 9.9548227 | 10.3179368 |
| 18     | 90107.70 | 207784.65 | 230595.88 | 9.9547619 | 10.3176135 |
| 17     | 90095.08 | 207630.07 | 230456.60 | 9.9547011 | 10.3172903 |
| 16     | 90082.45 | 207475.67 | 230317.51 | 9.9546402 | 10.3169672 |
| 15     | 90069.82 | 207321.46 | 230178.60 | 9.9545793 | 10.3166443 |
| 14     | 90057.18 | 207167.43 | 230039.88 | 9.9545184 | 10.3163215 |
| 13     | 90044.53 | 207013.59 | 229901.34 | 9.9544574 | 10.3159986 |
| 12     | 90031.87 | 206859.93 | 229762.99 | 9.9543963 | 10.3156762 |
| 11     | 90019.21 | 206706.46 | 229624.83 | 9.9543352 | 10.3153541 |
| 10     | 90006.54 | 206553.18 | 229486.85 | 9.9542741 | 10.3150319 |
| 9      | 89993.86 | 206400.08 | 229349.06 | 9.9542129 | 10.3147099 |
| 8      | 89981.17 | 206247.16 | 229211.45 | 9.9941517 | 10.3143886 |
| 7      | 89968.48 | 206094.42 | 229074.03 | 9.9540904 | 10.3140666 |
| 6      | 89955.78 | 205941.87 | 228936.79 | 9.9540291 | 10.3137447 |
| 5      | 89943.07 | 205789.50 | 228799.74 | 9.9539677 | 10.3134231 |
| 4      | 89930.35 | 205637.32 | 228662.86 | 9.9539063 | 10.3131014 |
| 3      | 89917.62 | 205485.31 | 228526.18 | 9.9538448 | 10.3127800 |
| 2      | 89904.89 | 205333.49 | 228389.67 | 9.9537833 | 10.3124590 |
| 1      | 89892.15 | 205181.84 | 228253.34 | 9.9537218 | 10.3121380 |
| 0      | 89879.40 | 205030.38 | 228117.20 | 9.9536602 | 10.3118181 |

## 26 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 43837.42 | 48773.26 | III260.19 | 9.6418420 | 9.6881818  |
| 1      | 43863.26 | 48909.27 | III275.98 | 9.6421009 | 9.6885023  |
| 2      | 43889.40 | 48845.30 | III291.79 | 9.6423596 | 9.6888227  |
| 3      | 43915.53 | 48881.33 | III307.61 | 9.6426182 | 9.6891430  |
| 4      | 43941.66 | 48917.37 | III323.45 | 9.6428765 | 9.6894631  |
| 5      | 43967.79 | 48953.43 | III339.30 | 9.6431347 | 9.6897831  |
| 6      | 43993.92 | 48989.49 | III355.16 | 9.6433926 | 9.6901030  |
| 7      | 44020.04 | 49025.57 | III371.03 | 9.6436504 | 9.6904226  |
| 8      | 44046.16 | 49061.66 | III386.92 | 9.6439080 | 9.6907422  |
| 9      | 44072.27 | 49097.75 | III402.82 | 9.6441654 | 9.6910616  |
| 10     | 44098.38 | 49133.86 | III418.74 | 9.6444226 | 9.6913809  |
| 11     | 44124.48 | 49169.97 | III434.67 | 9.6446796 | 9.6917000  |
| 12     | 44150.58 | 49206.10 | III450.62 | 9.6449365 | 9.6920189  |
| 13     | 44176.68 | 49242.24 | III466.58 | 9.6451931 | 9.6923378  |
| 14     | 44202.78 | 49278.38 | III482.55 | 9.6454496 | 9.6926565  |
| 15     | 44228.87 | 49314.54 | III498.54 | 9.6457058 | 9.6929750  |
| 16     | 44254.96 | 49350.71 | III514.54 | 9.6459619 | 9.6932934  |
| 17     | 44281.04 | 49386.89 | III530.56 | 9.6462178 | 9.6936117  |
| 18     | 44307.12 | 49423.08 | III546.59 | 9.6464735 | 9.6939298  |
| 19     | 44333.20 | 49459.28 | III562.63 | 9.6467290 | 9.6942478  |
| 20     | 44359.27 | 49495.49 | III578.69 | 9.6469844 | 9.6945656  |
| 21     | 44385.34 | 49531.71 | III594.76 | 9.6472395 | 9.6948833  |
| 22     | 44411.40 | 49567.94 | III610.84 | 9.6474945 | 9.6952009  |
| 23     | 44437.46 | 49604.18 | III626.94 | 9.6477492 | 9.6955183  |
| 24     | 44463.52 | 49640.23 | III643.06 | 9.6480038 | 9.6958355  |
| 25     | 44489.57 | 49676.69 | III659.19 | 9.6482582 | 9.6961527  |
| 26     | 44515.62 | 49712.97 | III675.33 | 9.6485124 | 9.6964697  |
| 27     | 44541.67 | 49749.25 | III691.49 | 9.6487665 | 9.6967865  |
| 28     | 44567.71 | 49785.54 | III707.66 | 9.6490203 | 9.6971032  |
| 29     | 44593.75 | 49821.85 | III723.84 | 9.6492740 | 9.6974198  |
| 30     | 44619.78 | 49858.16 | III740.04 | 9.6495274 | 9.6977363  |

# 63 Grad.

| Minur. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 89879.40 | 205030.38 | 228117.20 | 9.9536602 | 10.3118182 |
| 59     | 89866.65 | 204879.10 | 227981.24 | 9.9535985 | 10.3114977 |
| 58     | 89853.89 | 204728.00 | 227845.46 | 9.9535369 | 10.3111773 |
| 57     | 89841.12 | 204577.08 | 227709.86 | 9.9534751 | 10.3108570 |
| 56     | 89828.34 | 204426.34 | 227574.45 | 9.9534134 | 10.3105369 |
| 55     | 89815.55 | 204275.78 | 227439.21 | 9.9533515 | 10.3102169 |
| 54     | 89802.76 | 204125.40 | 227304.15 | 9.9532897 | 10.3098970 |
| 53     | 89789.96 | 203975.19 | 227169.27 | 9.9532278 | 10.3095774 |
| 52     | 89777.15 | 203825.17 | 227034.57 | 9.9531658 | 10.3092578 |
| 51     | 89764.33 | 203675.32 | 226900.05 | 9.9531038 | 10.3089384 |
| 50     | 89751.51 | 203525.65 | 226765.71 | 9.9530418 | 10.3086191 |
| 49     | 89738.68 | 203376.15 | 226631.55 | 9.9529797 | 10.3083000 |
| 48     | 89725.84 | 203226.83 | 226497.56 | 9.9529175 | 10.3079811 |
| 47     | 89712.99 | 203077.69 | 226363.75 | 9.9528553 | 10.3076622 |
| 46     | 89700.13 | 202928.73 | 226230.12 | 9.9527931 | 10.3073435 |
| 45     | 89687.27 | 202779.94 | 226096.67 | 9.9527308 | 10.3070250 |
| 44     | 89674.40 | 202631.33 | 225963.39 | 9.9526685 | 10.3067066 |
| 43     | 89661.52 | 202482.89 | 225830.29 | 9.9526061 | 10.3063883 |
| 42     | 89648.64 | 202334.62 | 225697.36 | 9.9525437 | 10.3060702 |
| 41     | 89635.75 | 202186.53 | 225564.61 | 9.9524813 | 10.3057522 |
| 40     | 89622.85 | 202038.62 | 225432.04 | 9.9524188 | 10.3054344 |
| 39     | 89609.94 | 201890.88 | 225299.64 | 9.9523562 | 10.3051167 |
| 38     | 89597.03 | 201743.31 | 225167.41 | 9.9522936 | 10.3047991 |
| 37     | 89584.11 | 201595.92 | 225035.36 | 9.9522310 | 10.3044817 |
| 36     | 89571.18 | 201448.69 | 224903.48 | 9.9521683 | 10.3041645 |
| 35     | 89558.24 | 201301.64 | 224771.78 | 9.9521055 | 10.3038473 |
| 34     | 89545.29 | 201154.77 | 224640.24 | 9.9520428 | 10.3035303 |
| 33     | 89532.34 | 201008.06 | 224508.89 | 9.9519799 | 10.3032135 |
| 32     | 89519.38 | 200861.53 | 224377.70 | 9.9519171 | 10.3028968 |
| 31     | 89506.41 | 200715.16 | 224246.69 | 9.9518541 | 10.3025802 |
| 30     | 89493.43 | 200568.97 | 224115.84 | 9.9517912 | 10.3022637 |



## 26 Grad.

| Minut. | Sinus.   | Tang.    | Secant.    | Log. Sin. | Log. Tang. |
|--------|----------|----------|------------|-----------|------------|
| 30     | 44619.78 | 49858.16 | III1740.04 | 9.6495274 | 9.6977363  |
| 31     | 44645.81 | 49894.49 | III1756.25 | 9.6497807 | 9.6980526  |
| 32     | 44671.84 | 49930.82 | III1772.48 | 9.6500338 | 9.6983687  |
| 33     | 44697.86 | 49967.17 | III1788.72 | 9.6502868 | 9.6986847  |
| 34     | 44723.88 | 50003.52 | III1804.98 | 9.6505395 | 9.6990006  |
| 35     | 44749.90 | 50039.89 | III1821.25 | 9.6507920 | 9.6993164  |
| 36     | 44775.91 | 50076.27 | III1837.53 | 9.6510444 | 9.6996320  |
| 37     | 44801.92 | 50112.66 | III1853.83 | 9.6512966 | 9.6999474  |
| 38     | 44827.92 | 50149.06 | III1870.14 | 9.6515486 | 9.7002628  |
| 39     | 44853.92 | 50185.47 | III1886.47 | 9.6518004 | 9.7005780  |
| 40     | 44879.92 | 50221.89 | III1902.81 | 9.6520521 | 9.7008930  |
| 41     | 44905.91 | 50258.32 | III1919.16 | 9.6523035 | 9.7012080  |
| 42     | 44931.90 | 50294.76 | III1935.53 | 9.6525548 | 9.7015227  |
| 43     | 44957.89 | 50331.21 | III1951.91 | 9.6528059 | 9.7018374  |
| 44     | 44983.87 | 50367.67 | III1968.31 | 9.6530568 | 9.7021519  |
| 45     | 45009.85 | 50404.15 | III1984.72 | 9.6733075 | 9.7024663  |
| 46     | 45035.82 | 50440.63 | II2001.15  | 9.6535581 | 9.7027805  |
| 47     | 45061.79 | 50477.13 | II2017.59  | 9.6538084 | 9.7030946  |
| 48     | 45087.76 | 50513.63 | II2034.05  | 9.6540586 | 9.7034086  |
| 49     | 45113.72 | 50550.15 | II2050.52  | 9.6543086 | 9.7037225  |
| 50     | 45139.68 | 50586.68 | II2067.00  | 9.6545584 | 9.7040362  |
| 51     | 45165.63 | 50623.22 | II2083.50  | 9.6548081 | 9.7043497  |
| 52     | 45191.58 | 50659.77 | II2100.01  | 9.6550575 | 9.7046632  |
| 53     | 45217.53 | 50696.33 | II2116.53  | 9.6553068 | 9.7049765  |
| 54     | 45243.47 | 50732.90 | II2133.07  | 9.6555559 | 9.7052897  |
| 55     | 45269.41 | 50769.48 | II2149.63  | 9.6558048 | 9.7056027  |
| 56     | 45295.35 | 50806.07 | II2166.20  | 9.6560536 | 9.7059156  |
| 57     | 45321.28 | 50842.67 | II2182.78  | 9.6563021 | 9.7062284  |
| 58     | 45347.21 | 50879.28 | II2199.38  | 9.6565505 | 9.7065410  |
| 59     | 45373.13 | 50915.91 | II2216.00  | 9.6567987 | 9.7068535  |
| 60     | 45399.05 | 90952.54 | II2232.62  | 9.6570468 | 9.7071659  |

# 63 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 89493.43 | 200568.97 | 224115.84 | 9.9517912 | 10.3022637 |
| 29     | 89480.45 | 200422.95 | 223985.17 | 9.9517282 | 10.3019474 |
| 28     | 89467.46 | 200277.10 | 223854.67 | 9.9516651 | 10.3016313 |
| 27     | 89454.46 | 200131.42 | 223724.35 | 9.9516020 | 10.3013153 |
| 26     | 89441.45 | 199985.90 | 223594.19 | 9.9515389 | 10.3009994 |
| 25     | 89428.44 | 199840.56 | 223464.20 | 9.9514757 | 10.3006836 |
| 24     | 89415.42 | 199695.39 | 223334.38 | 9.9514124 | 10.3003680 |
| 23     | 89402.39 | 199550.38 | 223204.74 | 9.9513492 | 10.3000526 |
| 22     | 89389.36 | 199405.54 | 223075.26 | 9.9512858 | 10.2997372 |
| 21     | 89376.32 | 199260.87 | 222945.95 | 9.9512224 | 10.2994220 |
| 20     | 89363.27 | 199116.37 | 222816.81 | 9.9511590 | 10.2991070 |
| 19     | 89350.21 | 198972.04 | 222687.83 | 9.9510956 | 10.2987920 |
| 18     | 89337.14 | 198827.87 | 222559.03 | 9.9510320 | 10.2984773 |
| 17     | 89324.06 | 198683.87 | 222430.39 | 9.9509685 | 10.2981626 |
| 16     | 89310.98 | 198540.03 | 222301.92 | 9.9509049 | 10.2978481 |
| 15     | 89297.89 | 198396.36 | 222173.62 | 9.9508412 | 10.2975337 |
| 14     | 89284.79 | 198252.86 | 222045.48 | 9.9507775 | 10.2972195 |
| 13     | 89271.69 | 198109.52 | 221917.51 | 9.9507138 | 10.2969054 |
| 12     | 89258.58 | 197966.35 | 221789.71 | 9.9506500 | 10.2965914 |
| 11     | 89245.46 | 197823.34 | 221662.07 | 9.9505861 | 10.2962775 |
| 10     | 89232.33 | 197680.50 | 221534.60 | 9.9505223 | 10.2959638 |
| 9      | 89219.20 | 197537.82 | 221407.30 | 9.9504583 | 10.2956503 |
| 8      | 89206.06 | 197395.31 | 221280.16 | 9.9503944 | 10.2953368 |
| 7      | 89192.91 | 197252.96 | 221153.18 | 9.9503303 | 10.2950235 |
| 6      | 89179.75 | 197110.77 | 221026.37 | 9.9502663 | 10.2947103 |
| 5      | 89166.59 | 196968.74 | 220899.72 | 9.9502022 | 10.2943973 |
| 4      | 89153.42 | 196826.88 | 220773.23 | 9.9501380 | 10.2940844 |
| 3      | 89140.24 | 196685.18 | 220646.91 | 9.9500738 | 10.2937716 |
| 2      | 89127.05 | 196543.64 | 220520.75 | 9.9500095 | 10.2934590 |
| 1      | 89113.85 | 196402.27 | 220394.76 | 9.9499452 | 10.2931465 |
| 0      | 89100.65 | 196261.05 | 220268.93 | 9.9498809 | 10.2928341 |

## 27 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 45399.05 | 50952.54 | 112232.62 | 9.6570468 | 9.7071659  |
| 1      | 45424.97 | 50989.19 | 112249.26 | 9.6572946 | 9.7074781  |
| 2      | 45450.88 | 51025.85 | 112265.92 | 9.6575423 | 9.7077902  |
| 3      | 45476.79 | 51062.52 | 112282.59 | 9.6577898 | 9.7081022  |
| 4      | 45502.69 | 51099.19 | 112299.28 | 9.6580371 | 9.7084141  |
| 5      | 45528.59 | 51135.88 | 112315.98 | 9.6582842 | 9.7087258  |
| 6      | 45554.49 | 51172.59 | 112332.69 | 9.6585312 | 9.7090374  |
| 7      | 45580.38 | 51209.30 | 112349.42 | 9.6587780 | 9.7093488  |
| 8      | 45606.27 | 51246.02 | 112366.16 | 9.6590246 | 9.7096601  |
| 9      | 45632.16 | 51282.75 | 112382.92 | 9.6592710 | 9.7099713  |
| 10     | 45658.04 | 51319.50 | 112399.69 | 9.6595173 | 9.7102824  |
| 11     | 45683.92 | 51356.25 | 112416.48 | 9.6597634 | 9.7105933  |
| 12     | 45709.79 | 51393.02 | 112433.28 | 9.6600093 | 9.7109041  |
| 13     | 45735.66 | 51429.80 | 112450.10 | 9.6602550 | 9.7112148  |
| 14     | 45761.53 | 51466.58 | 112466.93 | 9.6605005 | 9.7115254  |
| 15     | 45787.39 | 51503.38 | 112483.77 | 9.6607459 | 9.7118358  |
| 16     | 45813.25 | 51540.19 | 112500.63 | 9.6609911 | 9.7121461  |
| 17     | 45839.10 | 51577.02 | 112517.50 | 9.6612361 | 9.7124562  |
| 18     | 45864.95 | 51613.85 | 112534.39 | 9.6614810 | 9.7127662  |
| 19     | 45890.80 | 51650.69 | 112551.29 | 9.6617257 | 9.7130761  |
| 20     | 45916.64 | 51687.55 | 112568.21 | 9.6619701 | 9.7133859  |
| 21     | 45942.48 | 51724.41 | 112585.14 | 9.6622145 | 9.7136956  |
| 22     | 45968.32 | 51761.29 | 112602.09 | 9.6624586 | 9.7140051  |
| 23     | 45994.15 | 51798.18 | 112619.05 | 9.6627026 | 9.7143145  |
| 24     | 46019.98 | 51835.08 | 112636.03 | 9.6629464 | 9.7146237  |
| 25     | 46045.80 | 51871.99 | 112653.02 | 9.6631900 | 9.7149329  |
| 26     | 46071.62 | 51908.91 | 112670.03 | 9.6634335 | 9.7152419  |
| 27     | 46097.44 | 51945.84 | 112687.05 | 9.6636768 | 9.7155508  |
| 28     | 46123.25 | 51982.78 | 112704.08 | 9.6639199 | 9.7158595  |
| 29     | 46149.06 | 52019.74 | 112721.13 | 9.6641628 | 9.7161682  |
| 30     | 46174.86 | 52056.70 | 112738.19 | 9.6644056 | 9.7164767  |

# 62 Grad.

| Minut. | Sinus    | Tang.     | Secant.   |  | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|--|-----------|------------|
| 60     | 89100.65 | 196261.05 | 220268.93 |  | 9.9498809 | 10.2928341 |
| 59     | 89087.44 | 196120.00 | 220143.26 |  | 9.9498165 | 10.2925219 |
| 58     | 89074.22 | 195979.10 | 220017.75 |  | 9.9497521 | 10.2922098 |
| 57     | 89061.00 | 195838.37 | 219892.40 |  | 9.9496876 | 10.2918978 |
| 56     | 89047.77 | 195697.80 | 219767.21 |  | 9.9496230 | 10.2915859 |
| 55     | 89034.53 | 195557.39 | 219642.19 |  | 9.9495585 | 10.2912742 |
| 54     | 89021.28 | 195417.13 | 219517.33 |  | 9.9494938 | 10.2909626 |
| 53     | 89008.02 | 195277.04 | 219392.62 |  | 9.9494292 | 10.2906512 |
| 52     | 88994.76 | 195137.11 | 219268.08 |  | 9.9493645 | 10.2903399 |
| 51     | 88981.49 | 194997.33 | 219143.70 |  | 9.9492997 | 10.2900287 |
| 50     | 88968.21 | 194857.71 | 219019.47 |  | 9.9492349 | 10.2897176 |
| 49     | 88954.93 | 194718.26 | 218895.41 |  | 9.9491700 | 10.2894067 |
| 48     | 88941.64 | 194578.96 | 218771.50 |  | 9.9491051 | 10.2890959 |
| 47     | 88928.34 | 194439.81 | 218647.75 |  | 9.9490402 | 10.2887852 |
| 46     | 88915.03 | 194300.83 | 218524.17 |  | 9.9489752 | 10.2884746 |
| 45     | 88901.71 | 194162.00 | 218400.74 |  | 9.9489101 | 10.2881642 |
| 44     | 88888.39 | 194023.33 | 218277.46 |  | 9.9488450 | 10.2878539 |
| 43     | 88875.06 | 193884.81 | 218154.35 |  | 9.9487799 | 10.2875438 |
| 42     | 88861.72 | 193746.45 | 218031.39 |  | 9.9487147 | 10.2872338 |
| 41     | 88848.37 | 193608.25 | 217908.59 |  | 9.9486495 | 10.2869239 |
| 40     | 88835.02 | 193470.20 | 217785.94 |  | 9.9485842 | 10.2866141 |
| 39     | 88821.66 | 193332.31 | 217663.46 |  | 9.9485189 | 10.2863044 |
| 38     | 88808.29 | 193194.57 | 217541.12 |  | 9.9484535 | 10.2859949 |
| 37     | 88794.92 | 193056.98 | 217418.95 |  | 9.9483881 | 10.2856855 |
| 36     | 88781.54 | 192919.56 | 217296.93 |  | 9.9483227 | 10.2853763 |
| 35     | 88768.15 | 192782.28 | 217175.06 |  | 9.9482572 | 10.2850671 |
| 34     | 88754.75 | 192645.16 | 217053.35 |  | 9.9481916 | 10.2847581 |
| 33     | 88741.34 | 192508.19 | 216931.80 |  | 9.9481260 | 10.2844492 |
| 32     | 88727.93 | 192371.38 | 216810.40 |  | 9.9480604 | 10.2841405 |
| 31     | 88714.51 | 192234.72 | 216689.15 |  | 9.9479947 | 10.2838318 |
| 30     | 88701.08 | 192098.21 | 216568.06 |  | 9.9479289 | 10.2835233 |

## 27 Grad.

| Minut. | 27 Grad. |          |           | L. g. Sin. | Log. Tang. |
|--------|----------|----------|-----------|------------|------------|
|        | Sinus.   | Tang.    | Secant.   |            |            |
| 30     | 46174.86 | 52056.70 | 112738.19 | 9.6644056  | 9.7164767  |
| 31     | 46200.66 | 52093.68 | 112755.27 | 9.6646482  | 9.7167851  |
| 32     | 46226.46 | 52130.67 | 112772.37 | 9.6648906  | 9.7170933  |
| 33     | 46252.25 | 52167.67 | 112789.48 | 9.6651329  | 9.7174014  |
| 34     | 46278.04 | 52204.68 | 112806.60 | 9.6653749  | 9.7177094  |
| 35     | 46303.82 | 52241.70 | 112823.74 | 9.6656168  | 9.7180173  |
| 36     | 46329.60 | 52278.74 | 112840.89 | 9.6658586  | 9.7183251  |
| 37     | 46355.38 | 52315.78 | 112858.06 | 9.6661001  | 9.7186327  |
| 38     | 46381.15 | 52352.84 | 112875.24 | 9.6663415  | 9.7189402  |
| 39     | 46406.92 | 52389.90 | 112892.44 | 9.6665828  | 9.7192476  |
| 40     | 46432.69 | 52426.98 | 112909.65 | 9.6668238  | 9.7195549  |
| 41     | 46458.45 | 52464.07 | 112926.88 | 9.6670647  | 9.7198620  |
| 42     | 46484.21 | 52501.17 | 112944.12 | 9.6673054  | 9.7201690  |
| 43     | 46509.96 | 52538.29 | 112961.37 | 9.6675459  | 9.7204759  |
| 44     | 46535.71 | 52575.41 | 112978.64 | 9.6677863  | 9.7207827  |
| 45     | 46561.45 | 52612.54 | 112995.93 | 9.6680265  | 9.7210893  |
| 46     | 46587.19 | 52649.69 | 113013.23 | 9.6682665  | 9.7213955  |
| 47     | 46612.93 | 52686.85 | 113030.55 | 9.6685064  | 9.7217022  |
| 48     | 46638.66 | 52724.02 | 113047.88 | 9.6687461  | 9.7220085  |
| 49     | 46664.39 | 52761.30 | 113065.22 | 9.6689856  | 9.7223147  |
| 50     | 46690.12 | 52798.39 | 113082.58 | 9.6692250  | 9.7226207  |
| 51     | 46715.84 | 52835.59 | 113099.96 | 9.6694642  | 9.7229266  |
| 52     | 46741.56 | 52872.81 | 113117.35 | 9.6697032  | 9.7232324  |
| 53     | 46767.27 | 52910.04 | 113134.75 | 9.6699420  | 9.7235381  |
| 54     | 46792.98 | 52947.27 | 113152.17 | 9.6701807  | 9.7248436  |
| 55     | 46818.69 | 52984.52 | 113169.61 | 9.6704192  | 9.7241490  |
| 56     | 46844.39 | 53021.78 | 113187.06 | 9.6706576  | 9.7244543  |
| 57     | 46870.09 | 53059.06 | 113204.52 | 9.6708958  | 9.7247595  |
| 58     | 46895.78 | 53096.34 | 113222.00 | 9.6711338  | 9.7250646  |
| 59     | 46921.47 | 53133.64 | 113239.50 | 9.6713716  | 9.7253695  |
| 50     | 46947.16 | 53170.94 | 113257.01 | 9.6716093  | 9.7256744  |

# 62 Grad.

| Minute | Sinas.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 88701.08 | 192098.21 | 216568.06 | 9.9479289 | 10.2835233 |
| 29     | 88687.64 | 191961.86 | 216447.12 | 9.9478631 | 10.2832149 |
| 28     | 88674.20 | 191825.65 | 216326.33 | 9.9477973 | 10.2829067 |
| 27     | 88660.75 | 191689.60 | 216205.70 | 9.9477314 | 10.2825986 |
| 26     | 88647.29 | 191553.70 | 216085.22 | 9.9476655 | 10.2822906 |
| 25     | 88633.83 | 191417.95 | 215964.89 | 9.9475995 | 10.2819827 |
| 24     | 88620.36 | 191282.36 | 215844.71 | 9.9475335 | 10.2816749 |
| 23     | 88606.88 | 191146.91 | 215724.69 | 9.9474674 | 10.2813671 |
| 22     | 88593.39 | 191011.62 | 215604.82 | 9.9474013 | 10.2810598 |
| 21     | 88579.89 | 190876.47 | 215485.10 | 9.9473352 | 10.2807524 |
| 20     | 88566.39 | 190741.47 | 215365.53 | 9.9472689 | 10.2804451 |
| 19     | 88552.88 | 190606.63 | 215246.11 | 9.9472027 | 10.2801380 |
| 18     | 88539.36 | 190471.93 | 215126.84 | 9.9471364 | 10.2798310 |
| 17     | 88525.83 | 190337.38 | 215007.72 | 9.9470700 | 10.2795241 |
| 16     | 88512.30 | 190202.99 | 214888.75 | 9.9470036 | 10.2792173 |
| 15     | 88498.76 | 190068.74 | 214769.93 | 9.9469372 | 10.2789107 |
| 14     | 88485.22 | 189934.64 | 214651.27 | 9.9468707 | 10.2786042 |
| 13     | 88471.66 | 189800.68 | 214532.75 | 9.9468042 | 10.2782978 |
| 12     | 88458.10 | 189666.88 | 214414.37 | 9.9467376 | 10.2779915 |
| 11     | 88444.53 | 189533.22 | 214296.15 | 9.9466710 | 10.2776853 |
| 10     | 88430.95 | 189399.71 | 214178.08 | 9.9466043 | 10.2773793 |
| 9      | 88417.36 | 189266.34 | 214060.15 | 9.9465376 | 10.2770734 |
| 8      | 88403.77 | 189133.13 | 213942.38 | 9.9464708 | 10.2767676 |
| 7      | 88390.17 | 189000.06 | 213824.75 | 9.9464040 | 10.2764619 |
| 6      | 88376.56 | 188867.13 | 213707.26 | 9.9463371 | 10.2761564 |
| 5      | 88362.94 | 188734.36 | 213589.93 | 9.9462702 | 10.2758510 |
| 4      | 88349.32 | 188601.72 | 213472.74 | 9.9462032 | 10.2755457 |
| 3      | 88335.69 | 188469.24 | 213355.70 | 9.9461362 | 10.2752405 |
| 2      | 88322.05 | 188336.90 | 213238.80 | 9.9460692 | 10.2749354 |
| 1      | 88308.41 | 188204.70 | 213122.05 | 9.9460021 | 10.2746305 |
| 0      | 88294.76 | 188072.65 | 213005.45 | 9.9459349 | 10.2743256 |

## 28 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 46947.16 | 53170.94 | 113257.01 | 9.6716093 | 9.7256744  |
| 1      | 46972.84 | 53208.26 | 113274.53 | 9.6718468 | 9.7259791  |
| 2      | 46998.52 | 53245.59 | 113292.07 | 9.6720841 | 9.7262837  |
| 3      | 47024.19 | 53282.93 | 113309.62 | 9.6723213 | 9.7265883  |
| 4      | 47049.86 | 53320.29 | 113327.19 | 9.6725583 | 9.7268925  |
| 5      | 47075.53 | 53357.65 | 113344.78 | 9.6727952 | 9.7271967  |
| 6      | 47101.19 | 53395.03 | 113362.38 | 9.6730319 | 9.7275008  |
| 7      | 47126.85 | 53432.42 | 113379.99 | 9.6732684 | 9.7278048  |
| 8      | 47152.50 | 53469.82 | 113397.62 | 9.6735047 | 9.7281087  |
| 9      | 47178.15 | 53507.23 | 113415.27 | 9.6737409 | 9.7284124  |
| 10     | 47203.80 | 53544.65 | 113432.93 | 9.6739769 | 9.7287161  |
| 11     | 47229.44 | 53582.08 | 113450.60 | 9.6742128 | 9.7290196  |
| 12     | 47255.08 | 53619.53 | 113468.29 | 9.6744485 | 9.7293230  |
| 13     | 47280.71 | 53656.99 | 113486.00 | 9.6746840 | 9.7296263  |
| 14     | 47306.34 | 53694.46 | 113503.72 | 9.6749194 | 9.7299295  |
| 15     | 47331.97 | 53731.94 | 113521.46 | 9.6751546 | 9.7302325  |
| 16     | 47357.59 | 53769.43 | 113539.21 | 9.6753896 | 9.7305354  |
| 17     | 47383.21 | 53806.94 | 113556.98 | 9.6756245 | 9.7308383  |
| 18     | 47408.82 | 53844.45 | 113574.76 | 9.6758592 | 9.7311410  |
| 19     | 47434.43 | 53881.98 | 113592.55 | 9.6760937 | 9.7314436  |
| 20     | 47460.04 | 53919.52 | 113610.36 | 9.6763281 | 9.7317460  |
| 21     | 47485.64 | 53957.07 | 113628.19 | 9.6765623 | 9.7320484  |
| 22     | 47511.24 | 53994.64 | 113646.03 | 9.6767963 | 9.7323506  |
| 23     | 47536.83 | 54032.21 | 113663.89 | 9.6770302 | 9.7326527  |
| 24     | 47562.42 | 54069.80 | 113681.76 | 9.6772640 | 9.7329547  |
| 25     | 47588.01 | 54107.40 | 113699.95 | 9.6774975 | 9.7332566  |
| 26     | 47613.59 | 54145.01 | 113717.55 | 9.6777309 | 9.7335584  |
| 27     | 47639.17 | 54182.63 | 113735.47 | 9.6779642 | 9.7338601  |
| 28     | 47664.74 | 54220.27 | 113753.40 | 9.6781972 | 9.7341616  |
| 29     | 47690.31 | 54257.91 | 113771.35 | 9.6784301 | 9.7344631  |
| 30     | 47715.88 | 54295.57 | 113789.32 | 9.6786629 | 9.7347644  |

# 61 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 88294.76 | 188072.65 | 212005.45 | 9.9459349 | 10.2743256 |
| 59     | 88281.10 | 187940.74 | 212888.99 | 9.9458677 | 10.2740209 |
| 58     | 88267.43 | 187808.98 | 212772.67 | 9.9458005 | 10.2737163 |
| 57     | 88253.75 | 187677.36 | 212656.51 | 9.9457332 | 10.2734119 |
| 56     | 88240.07 | 187545.89 | 212540.48 | 9.9456659 | 10.2731075 |
| 55     | 88226.38 | 187414.55 | 212424.60 | 9.9455985 | 10.2728033 |
| 54     | 88212.68 | 187283.36 | 212308.87 | 9.9455310 | 10.2724992 |
| 53     | 88198.98 | 187152.31 | 212193.28 | 9.9454636 | 10.2721952 |
| 52     | 88185.27 | 187021.41 | 212077.83 | 9.9453960 | 10.2718913 |
| 51     | 88171.55 | 186890.64 | 211962.53 | 9.9453285 | 10.2715876 |
| 50     | 88157.82 | 186760.03 | 211847.37 | 9.9452609 | 10.2712839 |
| 49     | 88144.09 | 186629.55 | 211732.35 | 9.9451932 | 10.2709804 |
| 48     | 88130.35 | 186499.21 | 211617.48 | 9.9451255 | 10.2706770 |
| 47     | 88116.60 | 186369.02 | 211502.74 | 9.9450577 | 10.2703737 |
| 46     | 88102.84 | 186238.96 | 211388.15 | 9.9449899 | 10.2700705 |
| 45     | 88089.07 | 186109.05 | 211273.71 | 9.9449220 | 10.2697675 |
| 44     | 88075.30 | 185979.28 | 211159.40 | 9.9448541 | 10.2694646 |
| 43     | 88061.52 | 185849.65 | 211045.23 | 9.9447862 | 10.2691617 |
| 42     | 88047.73 | 185720.15 | 210931.21 | 9.9447182 | 10.2688590 |
| 41     | 88033.94 | 185590.80 | 210817.33 | 9.9446501 | 10.2685564 |
| 40     | 88020.14 | 185461.59 | 210703.59 | 9.9445821 | 10.2682540 |
| 39     | 88006.33 | 185332.52 | 210589.98 | 9.9445139 | 10.2679516 |
| 38     | 87992.51 | 185203.58 | 210476.52 | 9.9444457 | 10.2676494 |
| 37     | 87978.69 | 185074.79 | 210363.20 | 9.9443775 | 10.2673473 |
| 36     | 87964.86 | 184946.13 | 210250.02 | 9.9443092 | 10.2670453 |
| 35     | 87951.02 | 184817.61 | 210136.98 | 9.9442409 | 10.2667434 |
| 34     | 87937.17 | 184689.23 | 210024.08 | 9.9441725 | 10.2664416 |
| 33     | 87923.32 | 184560.99 | 209911.31 | 9.9441041 | 10.2661399 |
| 32     | 87909.46 | 184432.89 | 209798.69 | 9.9440356 | 10.2658384 |
| 31     | 87895.59 | 184304.92 | 209686.20 | 9.9439671 | 10.2655369 |
| 30     | 87881.71 | 184177.09 | 209573.85 | 9.9438985 | 10.2652356 |



## 28 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 47715.88 | 54295.57 | 113789.32 | 9.6786629 | 9.7347644  |
| 31     | 47741.44 | 54333.24 | 113807.30 | 9.6788955 | 9.7350656  |
| 32     | 47767.00 | 54370.92 | 113825.29 | 9.6791279 | 9.7353667  |
| 33     | 47792.55 | 54408.62 | 113843.30 | 9.6593602 | 9.7356677  |
| 34     | 47818.10 | 54446.32 | 113861.33 | 9.6795923 | 9.7359685  |
| 35     | 47843.64 | 54484.04 | 113879.37 | 9.6798243 | 9.7362693  |
| 36     | 47869.18 | 54521.77 | 113897.43 | 9.6800560 | 9.7365699  |
| 37     | 47894.72 | 54559.51 | 113915.50 | 9.6802877 | 9.7368705  |
| 38     | 47920.26 | 54597.26 | 113933.59 | 9.6805191 | 9.7371709  |
| 39     | 47945.79 | 54635.03 | 113951.69 | 9.6807504 | 9.7374712  |
| 40     | 47971.31 | 54672.81 | 113969.81 | 9.6809816 | 9.7377714  |
| 41     | 47996.83 | 54710.60 | 113987.94 | 9.6812126 | 9.7380715  |
| 42     | 48022.35 | 54748.40 | 114006.09 | 9.6814434 | 9.7383714  |
| 43     | 48047.86 | 54786.21 | 114024.25 | 9.6816741 | 9.7386713  |
| 44     | 48073.37 | 54824.04 | 114042.43 | 9.6819046 | 9.7389710  |
| 45     | 48098.88 | 54861.88 | 114060.62 | 9.6821349 | 9.7392707  |
| 46     | 48124.38 | 54899.73 | 114078.83 | 9.6823651 | 9.7395702  |
| 47     | 48149.88 | 54937.59 | 114097.06 | 9.6825952 | 9.7398696  |
| 48     | 48175.37 | 54975.46 | 114115.30 | 9.6828250 | 9.7401689  |
| 49     | 48200.86 | 55013.35 | 114133.56 | 9.6830548 | 9.7404681  |
| 50     | 48226.34 | 55051.25 | 114151.83 | 9.6832843 | 9.7407672  |
| 51     | 48251.82 | 55089.16 | 114170.12 | 9.6835137 | 9.7410662  |
| 52     | 48277.30 | 55127.08 | 114188.42 | 9.6837430 | 9.7413650  |
| 53     | 48302.77 | 55165.02 | 114206.74 | 9.6839720 | 9.7416638  |
| 54     | 48328.24 | 55202.97 | 114225.07 | 9.6842010 | 9.7419624  |
| 55     | 48353.70 | 55240.93 | 114243.42 | 9.6844297 | 9.7422609  |
| 56     | 48379.16 | 55278.90 | 114261.79 | 9.6846583 | 9.7425594  |
| 57     | 48404.62 | 55316.88 | 114280.17 | 9.6848868 | 9.7428577  |
| 58     | 48430.07 | 55354.88 | 114298.57 | 9.6851151 | 9.7431559  |
| 59     | 48455.52 | 55392.88 | 114316.98 | 9.6853432 | 9.7434540  |
| 60     | 48480.96 | 55430.90 | 114335.41 | 9.6855712 | 9.7437520  |

# 61 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin  | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 87881.71 | 184177.09 | 209573.85 | 9.9438985 | 10.2652356 |
| 29     | 87867.83 | 184049.39 | 209461.64 | 9.9438299 | 10.2649344 |
| 28     | 87853.94 | 183921.84 | 209349.57 | 9.9437612 | 10.2646333 |
| 27     | 87840.04 | 183794.42 | 209237.64 | 9.9436925 | 10.2643323 |
| 26     | 87826.13 | 183667.13 | 209125.84 | 9.9436238 | 10.2640315 |
| 25     | 87812.22 | 183539.99 | 209014.18 | 9.9435549 | 10.2637307 |
| 24     | 87798.30 | 183412.97 | 208902.65 | 9.9434861 | 10.2634301 |
| 23     | 87784.37 | 183286.10 | 208791.27 | 9.9434172 | 10.2631295 |
| 22     | 87770.43 | 183159.36 | 208680.02 | 9.9433482 | 10.2628291 |
| 21     | 87756.49 | 183032.75 | 208568.90 | 9.9432792 | 10.2625288 |
| 20     | 87742.54 | 182906.28 | 208457.92 | 9.9432102 | 10.2622286 |
| 19     | 87728.58 | 182779.94 | 208347.08 | 9.9431411 | 10.2619285 |
| 18     | 87714.61 | 182653.74 | 208236.37 | 9.9430720 | 10.2616286 |
| 17     | 87700.64 | 182527.67 | 208125.80 | 9.9430028 | 10.2613287 |
| 16     | 87686.66 | 182401.73 | 208015.36 | 9.9429335 | 10.2610290 |
| 15     | 87672.67 | 182275.93 | 207905.06 | 9.9428643 | 10.2607293 |
| 14     | 87658.68 | 182150.26 | 207794.89 | 9.9427949 | 10.2604298 |
| 13     | 87644.68 | 182024.73 | 207684.86 | 9.9427255 | 10.2601304 |
| 12     | 87630.67 | 181899.32 | 207574.96 | 9.9426561 | 10.2598311 |
| 11     | 87616.65 | 181774.05 | 207465.19 | 9.9425866 | 10.2595319 |
| 10     | 87602.62 | 181648.92 | 207355.56 | 9.9425171 | 10.2592328 |
| 9      | 87588.59 | 181523.91 | 207246.06 | 9.9424476 | 10.2589338 |
| 8      | 87574.55 | 181399.04 | 207136.70 | 9.9423779 | 10.2586350 |
| 7      | 87560.50 | 181274.30 | 207027.46 | 9.9423083 | 10.2583362 |
| 6      | 87546.45 | 181149.69 | 206918.36 | 9.9422386 | 10.2580376 |
| 5      | 87532.39 | 181025.21 | 206809.40 | 9.9421688 | 10.2577391 |
| 4      | 87518.32 | 180900.86 | 206700.56 | 9.9420990 | 10.2574406 |
| 3      | 87504.24 | 180776.64 | 206591.86 | 9.9420291 | 10.2571423 |
| 2      | 87490.16 | 180652.56 | 206483.28 | 9.9419592 | 10.2568441 |
| 1      | 87476.07 | 180528.60 | 206374.84 | 9.9418893 | 10.2565460 |
| 0      | 87461.97 | 180404.78 | 206266.53 | 9.9418193 | 10.2562480 |

## 29 Grad.

| Minut. | Sinus.   |          | Tang.     |  | Secant.   |           | Log. Sin. |  | Log. Tang. |  |
|--------|----------|----------|-----------|--|-----------|-----------|-----------|--|------------|--|
|        |          |          |           |  |           |           |           |  |            |  |
| 0      | 48480.96 | 55430.90 | II4335.41 |  | 9.6855712 | 9.7437520 |           |  |            |  |
| 1      | 48506.40 | 55468.94 | II4353.85 |  | 9.6857991 | 9.7440499 |           |  |            |  |
| 2      | 48531.84 | 55506.98 | II4372.31 |  | 9.6860267 | 9.7443476 |           |  |            |  |
| 3      | 48557.27 | 55545.04 | II4390.78 |  | 9.6862542 | 9.7446453 |           |  |            |  |
| 4      | 48582.70 | 55583.11 | II4409.27 |  | 9.6864816 | 9.7449428 |           |  |            |  |
| 5      | 48608.12 | 55621.19 | II4427.78 |  | 9.6867088 | 9.7452403 |           |  |            |  |
| 6      | 48633.54 | 55659.29 | II4446.30 |  | 9.6869359 | 9.7455376 |           |  |            |  |
| 7      | 48658.95 | 55697.39 | II4464.84 |  | 9.6871628 | 9.7458349 |           |  |            |  |
| 8      | 48684.36 | 55735.51 | II4483.39 |  | 9.6873895 | 9.7461320 |           |  |            |  |
| 9      | 48709.77 | 55773.64 | II4501.96 |  | 9.6876161 | 9.7464290 |           |  |            |  |
| 10     | 48735.17 | 55811.79 | II4520.55 |  | 9.6878425 | 9.7467259 |           |  |            |  |
| 11     | 48760.57 | 55849.94 | II4539.15 |  | 9.6880688 | 9.7470227 |           |  |            |  |
| 12     | 48785.97 | 55888.11 | II4557.76 |  | 9.6882949 | 9.7473194 |           |  |            |  |
| 13     | 48811.36 | 55926.29 | II4576.39 |  | 9.6885209 | 9.7476160 |           |  |            |  |
| 14     | 48836.74 | 55964.48 | II4595.04 |  | 9.6887467 | 9.7479125 |           |  |            |  |
| 15     | 48862.12 | 56002.69 | II4613.70 |  | 9.6889723 | 9.7482089 |           |  |            |  |
| 16     | 48887.50 | 56040.91 | II4632.38 |  | 9.6891978 | 9.7485052 |           |  |            |  |
| 17     | 48912.87 | 56079.14 | II4651.08 |  | 9.6894232 | 9.7488013 |           |  |            |  |
| 18     | 48938.24 | 56117.38 | II4669.79 |  | 9.6896484 | 9.7490974 |           |  |            |  |
| 19     | 48963.61 | 56155.64 | II4688.52 |  | 9.6898734 | 9.7493934 |           |  |            |  |
| 20     | 48988.97 | 56193.91 | II4707.26 |  | 9.6900983 | 9.7496892 |           |  |            |  |
| 21     | 49014.33 | 56232.19 | II4726.02 |  | 9.6903231 | 9.7499850 |           |  |            |  |
| 22     | 49039.68 | 56270.48 | II4744.79 |  | 9.6905476 | 9.7502806 |           |  |            |  |
| 23     | 49065.03 | 56308.79 | II4763.58 |  | 9.6907721 | 9.7505762 |           |  |            |  |
| 24     | 49090.37 | 56347.10 | II4782.39 |  | 9.6909964 | 9.7508716 |           |  |            |  |
| 25     | 49115.71 | 56385.43 | II4801.21 |  | 9.6912205 | 9.7511669 |           |  |            |  |
| 26     | 49141.05 | 56423.78 | II4820.05 |  | 9.6914445 | 9.7514622 |           |  |            |  |
| 27     | 49166.37 | 56462.13 | II4838.90 |  | 9.6916683 | 9.7517573 |           |  |            |  |
| 28     | 49191.71 | 56500.50 | II4857.77 |  | 9.6918919 | 9.7520523 |           |  |            |  |
| 29     | 49217.04 | 56538.88 | II4876.65 |  | 9.6921155 | 9.7523472 |           |  |            |  |
| 30     | 49242.36 | 56577.28 | II4895.55 |  | 9.6923388 | 9.7526420 |           |  |            |  |

# 60 Grad.

| Minute | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 87461.97 | 180404.78 | 206266.53 | 9.9418193 | 10.2562480 |
| 59     | 87447.86 | 180281.08 | 206158.36 | 9.9417492 | 10.2559501 |
| 58     | 87433.75 | 180157.51 | 206050.31 | 9.9416791 | 10.2556524 |
| 57     | 87419.63 | 180034.08 | 205942.39 | 9.9416090 | 10.2553547 |
| 56     | 87405.50 | 179910.77 | 205834.60 | 9.9415388 | 10.2550572 |
| 55     | 87391.36 | 179784.59 | 205726.95 | 9.9414685 | 10.2547597 |
| 54     | 87377.22 | 179664.54 | 205619.42 | 9.9413982 | 10.2544624 |
| 53     | 87363.07 | 179541.62 | 205512.03 | 9.9413279 | 10.2541651 |
| 52     | 87348.91 | 179418.83 | 205404.76 | 9.9412575 | 10.2538680 |
| 51     | 87334.75 | 179296.16 | 205297.62 | 9.9411871 | 10.2535710 |
| 50     | 87320.58 | 179173.62 | 205190.61 | 9.9411166 | 10.2532741 |
| 49     | 87306.40 | 179051.21 | 205083.73 | 9.9410461 | 10.2529773 |
| 48     | 87292.21 | 178928.93 | 204976.98 | 9.9409755 | 10.2526806 |
| 47     | 87278.01 | 178806.78 | 204870.36 | 9.9409048 | 10.2523840 |
| 46     | 87263.81 | 178684.75 | 204763.86 | 9.9408342 | 10.2520875 |
| 45     | 87249.60 | 178562.85 | 204657.50 | 9.9407634 | 10.2517911 |
| 44     | 87235.38 | 178441.07 | 204551.26 | 9.9406927 | 10.2514948 |
| 43     | 87221.16 | 178319.43 | 204445.15 | 9.9406219 | 10.2511987 |
| 42     | 87206.93 | 178197.90 | 204339.16 | 9.9405510 | 10.2509026 |
| 41     | 87192.69 | 178076.51 | 204233.30 | 9.9404801 | 10.2506066 |
| 40     | 87178.44 | 177955.24 | 204127.57 | 9.9404091 | 10.2503108 |
| 39     | 87164.19 | 177834.09 | 204021.97 | 9.9403381 | 10.2500150 |
| 38     | 87149.93 | 177713.07 | 203916.49 | 9.9402670 | 10.2497194 |
| 37     | 87135.66 | 177592.18 | 203811.14 | 9.9401959 | 10.2494238 |
| 36     | 87121.38 | 177471.41 | 203705.92 | 9.9401248 | 10.2491284 |
| 35     | 87107.10 | 177350.76 | 203600.82 | 9.9400535 | 10.2488331 |
| 34     | 87092.81 | 177230.24 | 203495.85 | 9.9399823 | 10.2485378 |
| 33     | 87078.51 | 177109.85 | 203391.00 | 9.9399110 | 10.2482427 |
| 32     | 87064.20 | 176989.58 | 203286.27 | 9.9398396 | 10.2479477 |
| 31     | 87049.89 | 176869.43 | 203181.68 | 9.9397682 | 10.2476528 |
| 30     | 87035.57 | 176749.40 | 203077.20 | 9.9396968 | 10.2473580 |

## 29 Grad.

| Minn. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|-------|----------|----------|-----------|-----------|------------|
| 30    | 9242.36  | 56577.28 | 114895.55 | 9.6923388 | 9.7526420  |
| 31    | 49267.67 | 56615.68 | 114914.47 | 9.6925620 | 9.7529368  |
| 32    | 49292.98 | 56654.10 | 114933.40 | 9.6927851 | 9.7532314  |
| 33    | 49318.29 | 56692.53 | 114952.35 | 9.6930080 | 9.7535259  |
| 34    | 49343.59 | 56730.98 | 114971.32 | 9.6932308 | 9.7538203  |
| 35    | 49368.89 | 56769.44 | 114990.30 | 9.6934534 | 9.7541146  |
| 36    | 49394.19 | 56807.91 | 115009.30 | 9.6936758 | 9.7544088  |
| 37    | 49419.48 | 56846.39 | 115028.31 | 9.6938981 | 9.7547029  |
| 38    | 49444.77 | 56884.88 | 115047.34 | 9.6941203 | 9.7549969  |
| 39    | 49470.05 | 56923.39 | 115066.38 | 9.6943423 | 9.7552908  |
| 40    | 49495.33 | 56961.91 | 115085.44 | 9.6945642 | 9.7555846  |
| 41    | 49520.60 | 57000.45 | 115104.52 | 9.6947859 | 9.7558783  |
| 42    | 49545.87 | 57038.99 | 115123.61 | 9.6950074 | 9.7561718  |
| 43    | 49571.13 | 57077.55 | 115142.72 | 9.6952288 | 9.7564653  |
| 44    | 49596.39 | 57116.12 | 115161.85 | 9.6954501 | 9.7567587  |
| 45    | 49621.65 | 57154.71 | 115180.99 | 9.6956712 | 9.7570520  |
| 46    | 49646.90 | 57193.31 | 115200.15 | 9.6958922 | 9.7573452  |
| 47    | 49672.15 | 57231.92 | 115219.32 | 9.6961130 | 9.7576383  |
| 48    | 49697.40 | 57270.54 | 115238.51 | 9.6963336 | 9.7579313  |
| 49    | 49722.64 | 57309.18 | 115257.72 | 9.6965541 | 9.7582242  |
| 50    | 49747.87 | 57347.83 | 115276.94 | 9.6967745 | 9.7585170  |
| 51    | 49773.10 | 57386.49 | 115296.18 | 9.6969947 | 9.7588096  |
| 52    | 49798.33 | 57425.16 | 115315.43 | 9.6972148 | 9.7591022  |
| 53    | 49823.55 | 57463.85 | 115334.70 | 9.6974347 | 9.7593947  |
| 54    | 49848.77 | 57502.55 | 115353.99 | 9.6976545 | 9.7596871  |
| 55    | 49873.99 | 57541.26 | 115373.29 | 9.6978741 | 9.7599794  |
| 56    | 49899.20 | 57579.99 | 115392.61 | 9.6980936 | 9.7602716  |
| 57    | 49924.41 | 57618.73 | 115411.95 | 9.6983129 | 9.7605637  |
| 58    | 49949.61 | 57657.48 | 115431.30 | 9.6985321 | 9.7608557  |
| 59    | 49974.81 | 57696.25 | 115450.67 | 9.6987511 | 9.7611476  |
| 60    | 50000.00 | 57735.03 | 115470.05 | 9.6989700 | 9.7614394  |

# 60 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 87035.57 | 176749.40 | 203077.20 | 9.9396968 | 10.2473580 |
| 29     | 87021.24 | 176629.50 | 202972.86 | 9.9396253 | 10.2470632 |
| 28     | 87006.90 | 176509.72 | 202868.63 | 9.9395537 | 10.2467686 |
| 27     | 86992.56 | 176390.07 | 202764.53 | 9.9394821 | 10.2464741 |
| 26     | 86978.21 | 176270.53 | 202660.56 | 9.9394105 | 10.2461797 |
| 25     | 86963.85 | 176151.12 | 202556.70 | 9.9393388 | 10.2458854 |
| 24     | 86949.49 | 176031.83 | 202452.97 | 9.9392671 | 10.2455912 |
| 23     | 86935.12 | 175912.67 | 202349.37 | 9.9391953 | 10.2452971 |
| 22     | 86920.74 | 175793.62 | 202245.89 | 9.9391234 | 10.2450031 |
| 21     | 86906.35 | 175674.70 | 202142.53 | 9.9390515 | 10.2447092 |
| 20     | 86891.96 | 175555.90 | 202039.29 | 9.9389796 | 10.2444154 |
| 19     | 86877.56 | 175437.22 | 201936.17 | 9.9389076 | 10.2441217 |
| 18     | 86863.15 | 175318.66 | 201833.18 | 9.9388356 | 10.2438282 |
| 17     | 86848.73 | 175200.23 | 201730.31 | 9.9387635 | 10.2435347 |
| 16     | 86834.31 | 175081.91 | 201627.56 | 9.9386914 | 10.2432413 |
| 15     | 86819.88 | 174963.71 | 201524.94 | 9.9386192 | 10.2429480 |
| 14     | 86805.44 | 174845.64 | 201422.43 | 9.9385470 | 10.2426548 |
| 13     | 86791.00 | 174727.68 | 201320.05 | 9.9384747 | 10.2423617 |
| 12     | 86776.55 | 174609.84 | 201217.79 | 9.9384024 | 10.2420687 |
| 11     | 86762.09 | 174492.13 | 201115.64 | 9.9383300 | 10.2417758 |
| 10     | 86747.62 | 174374.53 | 201013.62 | 9.9382576 | 10.2414830 |
| 9      | 86733.14 | 174257.05 | 200911.72 | 9.9381851 | 10.2411904 |
| 8      | 86718.66 | 174139.69 | 200809.94 | 9.9381126 | 10.2408978 |
| 7      | 86704.17 | 174022.45 | 200708.28 | 9.9380400 | 10.2406053 |
| 6      | 86689.67 | 173905.33 | 200606.74 | 9.9379674 | 10.2403129 |
| 5      | 86675.17 | 173788.33 | 200505.32 | 9.9378947 | 10.2400206 |
| 4      | 86660.66 | 173671.44 | 200404.02 | 9.9378220 | 10.2397284 |
| 3      | 86646.14 | 173554.68 | 200302.83 | 9.9377492 | 10.2394363 |
| 2      | 86631.61 | 173438.03 | 200201.77 | 9.9376764 | 10.2391443 |
| 1      | 86617.08 | 173321.49 | 200100.83 | 9.9376035 | 10.2388524 |
| 0      | 86602.54 | 173205.08 | 200000.00 | 9.9375306 | 10.2385606 |

## 30 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 50000.00 | 57735.03 | 115470.05 | 9.6989700 | 9.7614394  |
| 1      | 50025.19 | 57773.82 | 115489.45 | 9.6991887 | 9.7617311  |
| 2      | 50050.38 | 57812.62 | 115508.87 | 9.6994073 | 9.7620227  |
| 3      | 50075.56 | 57851.44 | 115528.30 | 9.6996258 | 9.7623142  |
| 4      | 50100.74 | 57890.27 | 115547.75 | 9.6998441 | 9.7626056  |
| 5      | 50125.91 | 57929.11 | 115567.22 | 9.7000622 | 9.7628969  |
| 6      | 50151.08 | 57967.97 | 115586.70 | 9.7002802 | 9.7631881  |
| 7      | 50176.24 | 58006.84 | 115606.20 | 9.7004981 | 9.7634792  |
| 8      | 50201.40 | 58045.73 | 115625.72 | 9.7007158 | 9.7637702  |
| 9      | 50226.55 | 58084.62 | 115645.25 | 9.7009334 | 9.7640612  |
| 10     | 50251.70 | 58123.53 | 115664.80 | 9.7011508 | 9.7643520  |
| 11     | 50276.85 | 58162.45 | 115684.36 | 9.7013681 | 9.7646427  |
| 12     | 50301.99 | 58201.39 | 115703.94 | 9.7015852 | 9.7649334  |
| 13     | 50327.13 | 58240.34 | 115723.54 | 9.7018022 | 9.7652239  |
| 14     | 50352.27 | 58279.30 | 115743.15 | 9.7020190 | 9.7655143  |
| 15     | 50377.40 | 58317.28 | 115762.78 | 9.7022357 | 9.7658047  |
| 16     | 50402.53 | 58357.27 | 115782.43 | 9.7024523 | 9.7660949  |
| 17     | 50427.65 | 58396.27 | 115802.09 | 9.7026687 | 9.7663851  |
| 18     | 50452.77 | 58435.28 | 115821.77 | 9.7028849 | 9.7666751  |
| 19     | 50477.88 | 58474.31 | 115841.47 | 9.7031011 | 9.7669651  |
| 20     | 50502.99 | 58513.35 | 115861.18 | 9.7033170 | 9.7672550  |
| 21     | 50528.09 | 58552.41 | 115880.91 | 9.7035329 | 9.7675448  |
| 22     | 50553.19 | 58591.48 | 115900.65 | 9.7037486 | 9.7678344  |
| 23     | 50578.28 | 58630.56 | 115920.41 | 9.7039641 | 9.7681240  |
| 24     | 50603.37 | 58669.65 | 115940.19 | 9.7041795 | 9.7684135  |
| 25     | 50628.46 | 58708.76 | 115959.99 | 9.7043947 | 9.7687029  |
| 26     | 50653.55 | 58747.88 | 115979.80 | 9.7046099 | 9.7689922  |
| 27     | 50678.63 | 58787.02 | 115999.63 | 9.7048248 | 9.7692814  |
| 28     | 50703.70 | 58826.17 | 116019.47 | 9.7050397 | 9.7695705  |
| 29     | 50728.77 | 58865.33 | 116039.33 | 9.7052543 | 9.7698596  |
| 30     | 50753.84 | 58904.50 | 116059.21 | 9.7054689 | 9.7701485  |

# 59 Grad.

| Minute. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|---------|----------|-----------|-----------|-----------|------------|
| 60      | 86602.54 | 173205.08 | 200000.00 | 9.9375306 | 10.2385606 |
| 59      | 86587.99 | 173088.78 | 199899.29 | 9.9374577 | 10.2382689 |
| 58      | 86573.43 | 172972.60 | 199798.70 | 9.9373847 | 10.2379773 |
| 57      | 86558.87 | 172856.54 | 199698.23 | 9.9373116 | 10.2376858 |
| 56      | 86544.30 | 172740.60 | 199597.88 | 9.9372385 | 10.2373944 |
| 55      | 86529.72 | 172624.77 | 199497.64 | 9.9371653 | 10.2371031 |
| 54      | 86515.14 | 172509.05 | 199397.53 | 9.9370921 | 10.2368119 |
| 53      | 86500.55 | 172393.45 | 199297.52 | 9.9370189 | 10.2365208 |
| 52      | 86485.95 | 172277.97 | 199197.64 | 9.9369456 | 10.2362298 |
| 51      | 86471.34 | 172162.61 | 199097.87 | 9.9368722 | 10.2359388 |
| 50      | 86456.73 | 172047.36 | 198998.22 | 9.9367988 | 10.2356480 |
| 49      | 86442.11 | 171932.22 | 198898.69 | 9.9367254 | 10.2353573 |
| 48      | 86427.48 | 171817.20 | 198799.27 | 9.9366519 | 10.2350666 |
| 47      | 86412.84 | 171702.30 | 198699.97 | 9.9365783 | 10.2347761 |
| 46      | 86398.20 | 171587.51 | 198600.80 | 9.9365047 | 10.2344857 |
| 45      | 86383.55 | 171472.83 | 198501.72 | 9.9364311 | 10.2341953 |
| 44      | 86368.89 | 171358.27 | 198402.76 | 9.9363574 | 10.2339051 |
| 43      | 86354.23 | 171243.82 | 198303.93 | 9.9362836 | 10.2336149 |
| 42      | 86339.56 | 171129.49 | 198205.20 | 9.9362098 | 10.2333249 |
| 41      | 86324.88 | 171015.27 | 198106.59 | 9.9361360 | 10.2330349 |
| 40      | 86310.19 | 170901.16 | 198008.10 | 9.9360621 | 10.2327450 |
| 39      | 86295.49 | 170787.17 | 197909.72 | 9.9359881 | 10.2324552 |
| 38      | 86280.79 | 170673.29 | 197811.46 | 9.9359141 | 10.2321656 |
| 37      | 86266.08 | 170559.53 | 197713.31 | 9.9358401 | 10.2318760 |
| 36      | 86251.36 | 170445.87 | 197615.27 | 9.9357660 | 10.2315865 |
| 35      | 86236.64 | 170332.33 | 197517.35 | 9.9356918 | 10.2312971 |
| 34      | 86221.91 | 170218.90 | 197419.54 | 9.9356177 | 10.2310078 |
| 33      | 86207.17 | 170105.59 | 197321.85 | 9.9355434 | 10.2307186 |
| 32      | 86192.43 | 169992.38 | 197224.26 | 9.9354691 | 10.2304295 |
| 31      | 86177.68 | 169879.29 | 197126.80 | 9.9353948 | 10.2301404 |
| 30      | 86162.92 | 169766.31 | 197029.44 | 9.9353204 | 10.2298513 |



# 30 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 50753.84 | 58904.50 | 116059.21 | 9.7054689 | 9.7701485  |
| 31     | 50778.90 | 58943.69 | 116079.11 | 9.7056833 | 9.7704373  |
| 32     | 50803.96 | 58982.89 | 116099.02 | 9.7058975 | 9.7707261  |
| 33     | 50829.01 | 59022.11 | 116118.95 | 9.7061116 | 9.7710147  |
| 34     | 50854.06 | 59061.34 | 116138.89 | 9.7063256 | 9.7713033  |
| 35     | 50879.10 | 59100.58 | 116158.85 | 9.7065394 | 9.7715917  |
| 36     | 50904.14 | 59139.83 | 116178.83 | 9.7067531 | 9.7718801  |
| 37     | 50929.18 | 59179.10 | 116198.82 | 9.7069667 | 9.7721684  |
| 38     | 50954.21 | 59218.39 | 116218.83 | 9.7071801 | 9.7724566  |
| 39     | 50979.24 | 59257.68 | 116238.86 | 9.7073933 | 9.7727447  |
| 40     | 51004.26 | 59296.99 | 116258.91 | 9.7076064 | 9.7730327  |
| 41     | 51029.28 | 59336.32 | 116278.97 | 9.7078194 | 9.7733206  |
| 42     | 51054.29 | 59375.66 | 116299.05 | 9.7080323 | 9.7736084  |
| 43     | 51079.30 | 59415.01 | 116319.14 | 9.7082450 | 9.7738961  |
| 44     | 51104.31 | 59454.37 | 116339.25 | 9.7084575 | 9.7741838  |
| 45     | 51129.31 | 59493.75 | 116359.38 | 9.7086699 | 9.7744713  |
| 46     | 51154.31 | 59533.14 | 116379.53 | 9.7088822 | 9.7747588  |
| 47     | 51179.30 | 59572.54 | 116399.69 | 9.7090943 | 9.7750462  |
| 48     | 51204.29 | 59611.96 | 116419.87 | 9.7093063 | 9.7753334  |
| 49     | 51229.27 | 59651.40 | 116440.07 | 9.7095182 | 9.7756206  |
| 50     | 51254.25 | 59690.84 | 116460.28 | 9.7097299 | 9.7759077  |
| 51     | 51279.22 | 59730.30 | 116480.51 | 9.7099415 | 9.7761947  |
| 52     | 51304.19 | 59769.78 | 116500.76 | 9.7101529 | 9.7764816  |
| 53     | 51329.16 | 59809.27 | 116521.02 | 9.7103642 | 9.7767683  |
| 54     | 51354.12 | 59848.77 | 116541.30 | 9.7105753 | 9.7770552  |
| 55     | 51379.08 | 59888.28 | 116561.60 | 9.7107863 | 9.7773418  |
| 56     | 51404.04 | 59927.81 | 116581.91 | 9.7109972 | 9.7776284  |
| 57     | 51428.99 | 59967.35 | 116602.24 | 9.7112080 | 9.7779149  |
| 58     | 51453.93 | 60006.91 | 116622.59 | 9.7114186 | 9.7782012  |
| 59     | 51478.87 | 60046.48 | 116642.96 | 9.7116290 | 9.7784875  |
| 60     | 51503.81 | 60086.06 | 116663.34 | 9.7118393 | 9.7787737  |

# 59 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 86162.92 | 169766.31 | 197029.44 | 9.9353204 | 10.2298515 |
| 29     | 86148.15 | 169653.44 | 196932.20 | 9.9352459 | 10.2295627 |
| 28     | 86133.37 | 169540.69 | 196835.07 | 9.9351715 | 10.2292739 |
| 27     | 86118.59 | 169428.04 | 196738.05 | 9.9350969 | 10.2289853 |
| 26     | 86103.80 | 169315.50 | 196641.14 | 9.9350223 | 10.2286967 |
| 25     | 86089.00 | 169203.08 | 196544.34 | 9.9349477 | 10.2284083 |
| 24     | 86074.20 | 169090.77 | 196447.67 | 9.9348730 | 10.2281199 |
| 23     | 86059.39 | 168978.56 | 196351.10 | 9.9347983 | 10.2278316 |
| 22     | 86044.57 | 168866.47 | 196254.64 | 9.9347235 | 10.2275434 |
| 21     | 86029.74 | 168754.49 | 196158.29 | 9.9346486 | 10.2272553 |
| 20     | 86014.91 | 168642.61 | 196062.06 | 9.9345738 | 10.2269673 |
| 19     | 86000.07 | 168530.85 | 195965.93 | 9.9344988 | 10.2266791 |
| 18     | 85985.22 | 168419.19 | 195869.92 | 9.9344238 | 10.2263916 |
| 17     | 85970.37 | 168307.65 | 195774.01 | 9.9343488 | 10.2261039 |
| 16     | 85955.51 | 168196.21 | 195678.22 | 9.9342737 | 10.2258162 |
| 15     | 85940.64 | 168084.89 | 195582.54 | 9.9341986 | 10.2255287 |
| 14     | 85925.76 | 167973.67 | 195486.97 | 9.9341234 | 10.2252412 |
| 13     | 85910.88 | 167862.56 | 195391.50 | 9.9340482 | 10.2249538 |
| 12     | 85895.99 | 167751.56 | 195296.15 | 9.9339729 | 10.2246666 |
| 11     | 85881.09 | 167640.67 | 195200.91 | 9.9338976 | 10.2243794 |
| 10     | 85866.18 | 167529.88 | 195105.77 | 9.9338222 | 10.2240923 |
| 9      | 85851.27 | 167419.21 | 195010.75 | 9.9337467 | 10.2238053 |
| 8      | 85836.35 | 167308.64 | 194915.83 | 9.9336713 | 10.2235184 |
| 7      | 85821.42 | 167198.18 | 194821.02 | 9.9335957 | 10.2232315 |
| 6      | 85806.49 | 167087.82 | 194726.32 | 9.9335201 | 10.2229448 |
| 5      | 85791.55 | 166977.58 | 194631.73 | 9.9334445 | 10.2226582 |
| 4      | 85776.60 | 166867.44 | 194537.25 | 9.9333688 | 10.2223716 |
| 3      | 85761.64 | 166757.41 | 194442.88 | 9.9332931 | 10.2220851 |
| 2      | 85746.68 | 166647.48 | 194348.61 | 9.9332173 | 10.2217988 |
| 1      | 85731.71 | 166537.66 | 194254.45 | 9.9331415 | 10.2215125 |
| 0      | 85716.73 | 166427.95 | 194160.40 | 9.9330656 | 10.2212263 |

## 31 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 51503.81 | 60086.06 | 116663.34 | 9.7118393 | 9.7787737  |
| 1      | 51528.74 | 60125.66 | 116683.74 | 9.7120495 | 9.7790599  |
| 2      | 51553.67 | 60165.27 | 116704.16 | 9.7122596 | 9.7793459  |
| 3      | 51578.59 | 60204.90 | 116724.59 | 9.7124695 | 9.7796318  |
| 4      | 51603.51 | 60244.54 | 116745.04 | 9.7126792 | 9.7799177  |
| 5      | 51628.42 | 60284.19 | 116765.51 | 9.7128889 | 9.7802034  |
| 6      | 51653.33 | 60323.86 | 116785.99 | 9.7130983 | 9.7804891  |
| 7      | 51678.24 | 60363.54 | 116806.49 | 9.7133077 | 9.7807747  |
| 8      | 51703.14 | 60403.23 | 116827.01 | 9.7135169 | 9.7810602  |
| 9      | 51728.04 | 60442.94 | 116847.55 | 9.7137260 | 9.7813456  |
| 10     | 51752.93 | 60482.66 | 116868.10 | 9.7139349 | 9.7816309  |
| 11     | 51777.82 | 60522.40 | 116888.67 | 9.7141437 | 9.7819162  |
| 12     | 51802.70 | 60562.15 | 116909.26 | 9.7143524 | 9.7822013  |
| 13     | 51827.58 | 60601.92 | 116929.86 | 9.7145609 | 9.7824864  |
| 14     | 51852.46 | 60641.70 | 116950.48 | 9.7147693 | 9.7827713  |
| 15     | 51877.33 | 60681.49 | 116971.12 | 9.7149776 | 9.7830562  |
| 16     | 51902.19 | 60721.30 | 116991.78 | 9.7151857 | 9.7833410  |
| 17     | 51927.05 | 60761.12 | 117012.45 | 9.7153937 | 9.7836258  |
| 18     | 51951.91 | 60800.95 | 117033.14 | 9.7156015 | 9.7839104  |
| 19     | 51976.76 | 60840.80 | 117053.85 | 9.7158092 | 9.7841949  |
| 20     | 52001.61 | 60880.67 | 117074.57 | 9.7160168 | 9.7844794  |
| 21     | 52026.46 | 60920.54 | 117095.31 | 9.7162243 | 9.7847638  |
| 22     | 52051.30 | 60960.43 | 117116.07 | 9.7164316 | 9.7850481  |
| 23     | 52076.13 | 61000.34 | 117136.85 | 9.7166387 | 9.7853323  |
| 24     | 52100.96 | 61040.26 | 117157.64 | 9.7168458 | 9.7856164  |
| 25     | 52125.79 | 61080.19 | 117178.45 | 9.7170526 | 9.7859004  |
| 26     | 52150.61 | 61120.14 | 117199.28 | 9.7172594 | 9.7861844  |
| 27     | 52175.43 | 61160.11 | 117220.13 | 9.7174660 | 9.7864682  |
| 28     | 52200.24 | 61200.08 | 117240.99 | 9.7176725 | 9.7867520  |
| 29     | 52225.05 | 61240.07 | 117261.87 | 9.7178789 | 9.7870357  |
| 30     | 52249.86 | 61280.08 | 117282.77 | 9.7180851 | 9.7873193  |

# 58 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 85716.73 | 166427.95 | 194160.40 | 9.9330656 | 10.2212263 |
| 59     | 85701.74 | 166318.34 | 194066.46 | 9.9329897 | 10.2209401 |
| 58     | 85686.75 | 166208.84 | 193972.62 | 9.9329137 | 10.2206541 |
| 57     | 85671.75 | 166099.45 | 193878.89 | 9.9328376 | 10.2203682 |
| 56     | 85656.74 | 165990.16 | 193785.27 | 9.9327616 | 10.2200823 |
| 55     | 85641.73 | 165880.97 | 193691.76 | 9.9326854 | 10.2197966 |
| 54     | 85626.71 | 165771.89 | 193598.35 | 9.9326092 | 10.2195109 |
| 53     | 85611.68 | 165662.92 | 193505.05 | 9.9325330 | 10.2192253 |
| 52     | 85596.64 | 165554.05 | 193411.85 | 9.9324567 | 10.2189398 |
| 51     | 85581.60 | 165445.29 | 193318.76 | 9.9323804 | 10.2186544 |
| 50     | 85566.55 | 165336.63 | 193225.78 | 9.9323040 | 10.2183691 |
| 49     | 85551.49 | 165228.08 | 193132.90 | 9.9322276 | 10.2180838 |
| 48     | 85536.42 | 165119.63 | 193040.13 | 9.9321511 | 10.2177987 |
| 47     | 85521.35 | 165011.28 | 192947.46 | 9.9320746 | 10.2175136 |
| 46     | 85506.27 | 164903.01 | 192854.90 | 9.9319980 | 10.2172287 |
| 45     | 85491.18 | 164794.90 | 192762.44 | 9.9319213 | 10.2169438 |
| 44     | 85476.09 | 164686.86 | 192670.09 | 9.9318447 | 10.2166590 |
| 43     | 85460.99 | 164578.93 | 192577.84 | 9.9317679 | 10.2163742 |
| 42     | 85445.88 | 164471.11 | 192485.70 | 9.9316911 | 10.2160896 |
| 41     | 85430.76 | 164363.38 | 192393.66 | 9.9316143 | 10.2158051 |
| 40     | 85415.64 | 164255.76 | 192301.73 | 9.9315374 | 10.2155206 |
| 39     | 85400.51 | 164148.24 | 192209.90 | 9.9314605 | 10.2152362 |
| 38     | 85385.37 | 164040.82 | 192118.17 | 9.9313835 | 10.2149519 |
| 37     | 85370.23 | 163933.51 | 192026.55 | 9.9313065 | 10.2146677 |
| 36     | 85355.08 | 163826.30 | 191935.03 | 9.9312294 | 10.2143836 |
| 35     | 85339.92 | 163719.19 | 191843.62 | 9.9311522 | 10.2140996 |
| 34     | 85324.75 | 163612.18 | 191752.30 | 9.9310750 | 10.2138156 |
| 33     | 85309.58 | 163505.28 | 191661.09 | 9.9309978 | 10.2135318 |
| 32     | 85294.40 | 163398.47 | 191569.99 | 9.9309205 | 10.2132480 |
| 31     | 85279.21 | 163291.77 | 191478.99 | 9.9308432 | 10.2129643 |
| 30     | 85264.02 | 163185.17 | 191388.09 | 9.9307658 | 10.2126807 |

# 31 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 52249.86 | 61280.08 | 117282.77 | 9.7180851 | 9.7873193  |
| 31     | 52274.66 | 61320.10 | 117303.69 | 9.7182912 | 9.7876028  |
| 32     | 52299.45 | 61360.13 | 117324.62 | 9.7184971 | 9.7878863  |
| 33     | 52324.24 | 61400.18 | 117345.57 | 9.7187030 | 9.7881696  |
| 34     | 52349.03 | 61440.24 | 117366.54 | 9.7189086 | 9.7884529  |
| 35     | 52373.81 | 61480.32 | 117387.52 | 9.7191142 | 9.7887361  |
| 36     | 52398.59 | 61520.41 | 117408.52 | 9.7193196 | 9.7890192  |
| 37     | 52423.36 | 61560.52 | 117429.54 | 9.7195249 | 9.7893023  |
| 38     | 52448.13 | 61600.64 | 117450.58 | 9.7197300 | 9.7895852  |
| 39     | 52472.90 | 61640.77 | 117471.61 | 9.7199350 | 9.7898681  |
| 40     | 52497.66 | 61680.92 | 117492.71 | 9.7201399 | 9.7901508  |
| 41     | 52522.41 | 61721.08 | 117513.80 | 9.7203447 | 9.7904335  |
| 42     | 52547.16 | 61761.26 | 117534.91 | 9.7205493 | 9.7907161  |
| 43     | 52571.91 | 61801.45 | 117556.03 | 9.7207538 | 9.7909987  |
| 44     | 52596.65 | 61841.66 | 117577.17 | 9.7209581 | 9.7912811  |
| 45     | 52621.39 | 61881.88 | 117598.33 | 9.7211623 | 9.7915635  |
| 46     | 52646.12 | 61922.11 | 117619.51 | 9.7213664 | 9.7918458  |
| 47     | 52670.85 | 61962.36 | 117640.70 | 9.7215704 | 9.7921280  |
| 48     | 52695.58 | 62002.63 | 117661.91 | 9.7217742 | 9.7924101  |
| 49     | 52720.30 | 62042.91 | 117683.14 | 9.7219779 | 9.7926921  |
| 50     | 52745.02 | 62083.20 | 117704.39 | 9.7221814 | 9.7929741  |
| 51     | 52769.73 | 62123.51 | 117725.66 | 9.7223848 | 9.7932560  |
| 52     | 52794.44 | 62163.83 | 117746.94 | 9.7225881 | 9.7935378  |
| 53     | 52819.14 | 62204.17 | 117768.24 | 9.7227913 | 9.7938195  |
| 54     | 52843.84 | 62244.52 | 117789.56 | 9.7229943 | 9.7941011  |
| 55     | 52868.53 | 62284.88 | 117810.90 | 9.7231972 | 9.7943827  |
| 56     | 52893.22 | 62325.26 | 117832.25 | 9.7234000 | 9.7946641  |
| 57     | 52917.90 | 62365.66 | 117853.62 | 9.7236026 | 9.7949455  |
| 58     | 52942.58 | 62406.07 | 117875.01 | 9.7238051 | 9.7952268  |
| 59     | 52967.26 | 62446.50 | 117896.42 | 9.7240075 | 9.7955081  |
| 60     | 52991.93 | 62486.94 | 117917.84 | 9.7242097 | 9.7957892  |

## 58 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 85264.02 | 163185.17 | 191388.09 | 9.9307658 | 10.2126807 |
| 29     | 85248.81 | 163078.67 | 191297.29 | 9.9306883 | 10.2123972 |
| 28     | 85233.60 | 162972.27 | 191206.59 | 9.9306109 | 10.2121137 |
| 27     | 85218.38 | 162865.97 | 191116.00 | 9.9305333 | 10.2118304 |
| 26     | 85203.16 | 162759.77 | 191025.51 | 9.9304557 | 10.2115471 |
| 25     | 85187.93 | 162653.68 | 190935.12 | 9.9303781 | 10.2112639 |
| 24     | 85172.69 | 162547.68 | 190844.83 | 9.9303004 | 10.2109808 |
| 23     | 85157.44 | 162441.78 | 190754.64 | 9.9302226 | 10.2106977 |
| 22     | 85142.19 | 162335.99 | 190664.56 | 9.9301448 | 10.2104148 |
| 21     | 85126.93 | 162230.29 | 190574.57 | 9.9300670 | 10.2101319 |
| 20     | 85111.66 | 162124.69 | 190484.69 | 9.9299891 | 10.2098492 |
| 19     | 85096.39 | 162019.20 | 190394.91 | 9.9299112 | 10.2095665 |
| 18     | 85081.11 | 161913.80 | 190305.22 | 9.9298332 | 10.2092839 |
| 17     | 85065.82 | 161808.50 | 190215.64 | 9.9297551 | 10.2090013 |
| 16     | 85050.52 | 161703.30 | 190126.16 | 9.9296770 | 10.2087189 |
| 15     | 85035.22 | 161598.20 | 190036.78 | 9.9295989 | 10.2084365 |
| 14     | 85019.91 | 161493.20 | 189947.50 | 9.9295207 | 10.2081542 |
| 13     | 85004.59 | 161388.29 | 189858.32 | 9.9294424 | 10.2078720 |
| 12     | 84989.27 | 161283.49 | 189769.24 | 9.9293641 | 10.2075899 |
| 11     | 84973.94 | 161178.78 | 189680.26 | 9.9292857 | 10.2073079 |
| 10     | 84958.60 | 161074.17 | 189591.38 | 9.9292073 | 10.2070259 |
| 9      | 84943.25 | 160969.66 | 189502.59 | 9.9291289 | 10.2067440 |
| 8      | 84927.90 | 160865.25 | 189413.91 | 9.9290504 | 10.2064622 |
| 7      | 84912.54 | 160760.94 | 189325.32 | 9.9289718 | 10.2061805 |
| 6      | 84897.17 | 160656.72 | 189236.84 | 9.9288932 | 10.2058989 |
| 5      | 84881.79 | 160552.60 | 189148.45 | 9.9288145 | 10.2056173 |
| 4      | 84866.41 | 160448.58 | 189060.16 | 9.9287358 | 10.2053359 |
| 3      | 84851.02 | 160344.65 | 188971.97 | 9.9286571 | 10.2050545 |
| 2      | 84835.62 | 160240.82 | 188883.88 | 9.9285783 | 10.2047732 |
| 1      | 84820.22 | 160137.09 | 188795.89 | 9.9284994 | 10.2044919 |
| 0      | 84804.81 | 160033.45 | 188707.99 | 9.9284205 | 10.2042108 |

## 32 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 52991.93 | 62486.94 | 117917.84 | 9.7242097 | 9.7957892  |
| 1      | 53016.59 | 62527.39 | 117939.28 | 9.7244118 | 9.7960703  |
| 2      | 53041.25 | 62567.86 | 117960.74 | 9.7246138 | 9.7963513  |
| 3      | 53065.91 | 62608.34 | 117982.22 | 9.7248156 | 9.7966322  |
| 4      | 53090.56 | 62648.84 | 118003.72 | 9.7250174 | 9.7969130  |
| 5      | 53115.21 | 62689.35 | 118025.23 | 9.7252189 | 9.7971938  |
| 6      | 53139.86 | 62729.88 | 118046.76 | 9.7254204 | 9.7974745  |
| 7      | 53164.50 | 62770.42 | 118068.31 | 9.7256217 | 9.7977551  |
| 8      | 53189.13 | 62810.98 | 118089.88 | 9.7258229 | 9.7980356  |
| 9      | 53213.76 | 62851.56 | 118111.47 | 9.7260240 | 9.7983160  |
| 10     | 53238.39 | 62892.15 | 118133.07 | 9.7262249 | 9.7985964  |
| 11     | 53263.01 | 62932.75 | 118154.69 | 9.7264257 | 9.7988767  |
| 12     | 53287.63 | 62973.36 | 118176.33 | 9.7266264 | 9.7991569  |
| 13     | 53312.24 | 63013.99 | 118197.99 | 9.7268269 | 9.7994370  |
| 14     | 53336.85 | 63054.64 | 118219.66 | 9.7270273 | 9.7997170  |
| 15     | 53361.45 | 63095.30 | 118241.35 | 9.7272276 | 9.7999970  |
| 16     | 53386.05 | 63135.98 | 118263.06 | 9.7274278 | 9.8002769  |
| 17     | 53410.64 | 63176.67 | 118284.79 | 9.7276278 | 9.8005567  |
| 18     | 53435.23 | 63217.38 | 118306.54 | 9.7278277 | 9.8008365  |
| 19     | 53459.82 | 63258.10 | 118328.30 | 9.7280275 | 9.8011161  |
| 20     | 53484.40 | 63298.83 | 118350.08 | 9.7282271 | 9.8013957  |
| 21     | 53508.98 | 63339.58 | 118371.88 | 9.7284267 | 9.8016752  |
| 22     | 53533.55 | 63380.35 | 118393.70 | 9.7286260 | 9.8019546  |
| 23     | 53558.12 | 63421.13 | 118415.54 | 9.7288253 | 9.8022340  |
| 24     | 53582.68 | 63461.93 | 118437.40 | 9.7290244 | 9.8025133  |
| 25     | 53607.24 | 63502.74 | 118459.27 | 9.7292234 | 9.8027925  |
| 26     | 53631.79 | 63543.57 | 118481.16 | 9.7294223 | 9.8030716  |
| 27     | 53656.34 | 63584.41 | 118503.07 | 9.7296211 | 9.8033506  |
| 28     | 53680.88 | 63625.27 | 118525.00 | 9.7298197 | 9.8036296  |
| 29     | 53705.42 | 63666.14 | 118546.94 | 9.7300182 | 9.8039085  |
| 30     | 53729.96 | 63707.03 | 118568.91 | 9.7302165 | 9.8041873  |

# 57 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 84804.81 | 160033.45 | 188707.99 | 9.9284205 | 10.2042108 |
| 59     | 84789.39 | 159929.91 | 188620.19 | 9.9283415 | 10.2039297 |
| 58     | 84773.96 | 159826.47 | 188532.49 | 9.9282625 | 10.2036487 |
| 57     | 84758.53 | 159723.12 | 188444.89 | 9.9281834 | 10.2033678 |
| 56     | 84743.09 | 159619.87 | 188357.38 | 9.9281043 | 10.2030870 |
| 55     | 84727.64 | 159516.72 | 188269.97 | 9.9280251 | 10.2028062 |
| 54     | 84712.19 | 159413.66 | 188182.66 | 9.9279459 | 10.2025255 |
| 53     | 84696.73 | 159310.70 | 188095.45 | 9.9278666 | 10.2022449 |
| 52     | 84681.26 | 159207.83 | 188008.33 | 9.9277873 | 10.2019644 |
| 51     | 84665.78 | 159105.05 | 187921.31 | 9.9277079 | 10.2016840 |
| 50     | 84650.30 | 159002.38 | 187834.38 | 9.9276285 | 10.2014036 |
| 49     | 84634.81 | 158899.79 | 187747.55 | 9.9275490 | 10.2011233 |
| 48     | 84619.31 | 158797.30 | 187660.82 | 9.9274695 | 10.2008431 |
| 47     | 84603.81 | 158694.91 | 187574.18 | 9.9273899 | 10.2005630 |
| 46     | 84588.30 | 158592.61 | 187487.64 | 9.9273103 | 10.2002830 |
| 45     | 84572.78 | 158490.41 | 187401.20 | 9.9272306 | 10.2000030 |
| 44     | 84557.25 | 158388.30 | 187314.85 | 9.9271509 | 10.1997231 |
| 43     | 84541.72 | 158286.28 | 187228.59 | 9.9270711 | 10.1994433 |
| 42     | 84526.18 | 158184.36 | 187142.43 | 9.9269913 | 10.1991635 |
| 41     | 84510.63 | 158082.53 | 187056.37 | 9.9269114 | 10.1988839 |
| 40     | 84495.08 | 157980.79 | 186970.40 | 9.9268314 | 10.1986043 |
| 39     | 84479.52 | 157879.15 | 186884.53 | 9.9267514 | 10.1983248 |
| 38     | 84463.95 | 157777.60 | 186798.75 | 9.9266714 | 10.1980454 |
| 37     | 84448.37 | 157676.15 | 186713.06 | 9.9265913 | 10.1977660 |
| 36     | 84432.79 | 157574.79 | 186627.47 | 9.9265112 | 10.1974867 |
| 35     | 84417.20 | 157473.52 | 186541.97 | 9.9264310 | 10.1972075 |
| 34     | 84401.60 | 157372.34 | 186456.57 | 9.9263507 | 10.1969284 |
| 33     | 84386.00 | 157271.26 | 186371.26 | 9.9262704 | 10.1966494 |
| 32     | 84370.39 | 157170.26 | 186286.05 | 9.9261901 | 10.1963704 |
| 31     | 84354.77 | 157069.36 | 186200.93 | 9.9261096 | 10.1960915 |
| 30     | 84339.14 | 156968.56 | 186115.90 | 9.9260292 | 10.1958127 |



## 32 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 53729.96 | 63707.03 | 118568.91 | 9.7302165 | 9.8041873  |
| 31     | 53754.49 | 63747.93 | 118590.89 | 9.7304148 | 9.8044661  |
| 32     | 53779.02 | 63788.85 | 118612.89 | 9.7306129 | 9.8047447  |
| 33     | 53803.54 | 63829.78 | 118634.91 | 9.7308109 | 9.8050233  |
| 34     | 53828.06 | 63870.73 | 118656.95 | 9.7310087 | 9.8053019  |
| 35     | 53852.57 | 63911.69 | 118679.00 | 9.7312064 | 9.8055803  |
| 36     | 53877.08 | 63952.67 | 118701.07 | 9.7314040 | 9.8058587  |
| 37     | 53901.58 | 63993.66 | 118723.16 | 9.7316015 | 9.8061370  |
| 38     | 53926.08 | 64034.67 | 118745.27 | 9.7317989 | 9.8064152  |
| 39     | 53950.58 | 64075.69 | 118767.40 | 9.7319961 | 9.8066933  |
| 40     | 53975.07 | 64116.73 | 118789.55 | 9.7321932 | 9.8069714  |
| 41     | 53999.55 | 64157.79 | 118811.71 | 9.7323902 | 9.8072494  |
| 42     | 54024.03 | 64198.86 | 118833.89 | 9.7325870 | 9.8075273  |
| 43     | 54048.51 | 64239.95 | 118856.09 | 9.7327837 | 9.8078052  |
| 44     | 54072.98 | 64281.05 | 118878.31 | 9.7329803 | 9.8080829  |
| 45     | 54097.45 | 64322.16 | 118900.55 | 9.7331768 | 9.8083606  |
| 46     | 54121.91 | 64363.29 | 118922.81 | 9.7333731 | 9.8086383  |
| 47     | 54146.37 | 64404.44 | 118945.08 | 9.7335693 | 9.8089158  |
| 48     | 54170.82 | 64445.60 | 118967.37 | 9.7337654 | 9.8091933  |
| 49     | 54195.27 | 64486.78 | 118989.68 | 9.7339614 | 9.8094707  |
| 50     | 54219.71 | 64527.97 | 119012.01 | 9.7341572 | 9.8097480  |
| 51     | 54244.15 | 64569.18 | 119034.36 | 9.7343529 | 9.8100253  |
| 52     | 54268.59 | 64610.41 | 119056.73 | 9.7345485 | 9.8103025  |
| 53     | 54293.02 | 64651.65 | 119079.12 | 9.7347440 | 9.8105796  |
| 54     | 54317.44 | 64692.90 | 119101.52 | 9.7349393 | 9.8108566  |
| 55     | 54341.86 | 64734.17 | 119123.94 | 9.7351345 | 9.8111336  |
| 56     | 54366.28 | 64775.46 | 119146.38 | 9.7353296 | 9.8114105  |
| 57     | 54390.69 | 64816.76 | 119168.84 | 9.7355246 | 9.8116873  |
| 58     | 54415.10 | 64858.08 | 119191.32 | 9.7357195 | 9.8119641  |
| 59     | 54439.50 | 64899.41 | 119213.82 | 9.7359142 | 9.8122408  |
| 60     | 54463.90 | 64940.76 | 119236.33 | 9.7361088 | 9.8125174  |

## 57 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 84339.14 | 156968.56 | 186115.90 | 9.9260292 | 10.1958127 |
| 29     | 84323.51 | 156867.84 | 186030.96 | 9.9259487 | 10.1955339 |
| 28     | 84307.87 | 156767.22 | 185946.12 | 9.9258681 | 10.1952553 |
| 27     | 84292.22 | 156666.69 | 185861.38 | 9.9257875 | 10.1949767 |
| 26     | 84276.57 | 156566.25 | 185776.72 | 9.9257069 | 10.1946981 |
| 25     | 84260.91 | 156465.90 | 185692.16 | 9.9256261 | 10.1944197 |
| 24     | 84245.24 | 156365.64 | 185607.69 | 9.9255454 | 10.1941413 |
| 23     | 84229.56 | 156265.48 | 185523.31 | 9.9254646 | 10.1938630 |
| 22     | 84213.88 | 156165.40 | 185439.03 | 9.9253837 | 10.1935848 |
| 21     | 84198.19 | 156065.42 | 185354.83 | 9.9253028 | 10.1933067 |
| 20     | 84182.49 | 155965.52 | 185270.73 | 9.9252218 | 10.1930286 |
| 19     | 84166.79 | 155865.72 | 185186.72 | 9.9251408 | 10.1927506 |
| 18     | 84151.08 | 155766.01 | 185102.81 | 9.9250597 | 10.1924727 |
| 17     | 84135.36 | 155666.39 | 185018.98 | 9.9249786 | 10.1921948 |
| 16     | 84119.63 | 155566.85 | 184935.25 | 9.9248974 | 10.1919171 |
| 15     | 84103.90 | 155467.41 | 184851.61 | 9.9248161 | 10.1916394 |
| 14     | 84088.16 | 155368.06 | 184768.05 | 9.9247349 | 10.1913617 |
| 13     | 84072.41 | 155268.80 | 184684.59 | 9.9246535 | 10.1910842 |
| 12     | 84056.66 | 155169.63 | 184601.23 | 9.9245721 | 10.1908067 |
| 11     | 84040.90 | 155070.54 | 184517.95 | 9.9244907 | 10.1905293 |
| 10     | 84025.13 | 154971.55 | 184434.76 | 9.9244092 | 10.1902520 |
| 9      | 84009.35 | 154872.64 | 184351.66 | 9.9243277 | 10.1899747 |
| 8      | 83993.57 | 154773.83 | 184268.66 | 9.9242461 | 10.1896975 |
| 7      | 83977.78 | 154675.10 | 184185.74 | 9.9241644 | 10.1894204 |
| 6      | 83961.98 | 154576.46 | 184102.92 | 9.9240827 | 10.1891434 |
| 5      | 83946.18 | 154477.92 | 184020.18 | 9.9240010 | 10.1888664 |
| 4      | 83930.37 | 154379.46 | 183937.53 | 9.9239191 | 10.1885895 |
| 3      | 83914.55 | 154281.08 | 183854.98 | 9.9238373 | 10.1883127 |
| 2      | 83898.73 | 154182.80 | 183772.51 | 9.9237554 | 10.1880359 |
| 1      | 83882.90 | 154084.60 | 183690.13 | 9.9236734 | 10.1877592 |
| 0      | 83867.06 | 153986.50 | 183607.84 | 9.9235914 | 10.1874826 |

# 33 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 54463.90 | 64940.76 | 119236.33 | 9.7361088 | 9.8125174  |
| 1      | 54488.30 | 64982.12 | 119258.86 | 9.7363032 | 9.8127939  |
| 2      | 54512.69 | 65023.50 | 119281.41 | 9.7364976 | 9.8130704  |
| 3      | 54537.07 | 65064.90 | 119303.98 | 9.7366918 | 9.8133468  |
| 4      | 54561.45 | 65106.31 | 119326.57 | 9.7368859 | 9.8136231  |
| 5      | 54585.83 | 65147.74 | 119349.18 | 9.7370799 | 9.8138993  |
| 6      | 54610.20 | 65189.18 | 119371.81 | 9.7372737 | 9.8141755  |
| 7      | 54634.56 | 65230.64 | 119394.46 | 9.7374675 | 9.8144516  |
| 8      | 54658.92 | 65272.11 | 119417.12 | 9.7376611 | 9.8147277  |
| 9      | 54683.28 | 65313.60 | 119439.80 | 9.7378546 | 9.8150036  |
| 10     | 54707.63 | 65355.11 | 119462.50 | 9.7380479 | 9.8152795  |
| 11     | 54731.98 | 65396.63 | 119485.22 | 9.7382412 | 9.8155554  |
| 12     | 54756.32 | 65438.17 | 119507.96 | 9.7384343 | 9.8158311  |
| 13     | 54780.66 | 65479.72 | 119530.72 | 9.7386273 | 9.8161068  |
| 14     | 54804.99 | 65521.29 | 119553.50 | 9.7388201 | 9.8163824  |
| 15     | 54829.32 | 65562.87 | 119576.30 | 9.7390129 | 9.8166580  |
| 16     | 54853.65 | 65604.47 | 119599.11 | 9.7392055 | 9.8169335  |
| 17     | 54877.97 | 65646.09 | 119621.94 | 9.7393980 | 9.8172089  |
| 18     | 54902.28 | 65687.72 | 119644.79 | 9.7395904 | 9.8174842  |
| 19     | 54926.59 | 65729.37 | 119667.66 | 9.7397827 | 9.8177595  |
| 20     | 54950.90 | 65771.03 | 119690.55 | 9.7399748 | 9.8180347  |
| 21     | 54975.20 | 65812.71 | 119713.46 | 9.7401668 | 9.8183098  |
| 22     | 54999.50 | 65854.41 | 119736.39 | 9.7403587 | 9.8185849  |
| 23     | 55023.79 | 65896.12 | 119759.34 | 9.7405505 | 9.8188599  |
| 24     | 55048.08 | 65937.85 | 119782.31 | 9.7407421 | 9.8191348  |
| 25     | 55072.36 | 65979.59 | 119805.29 | 9.7409337 | 9.8194096  |
| 26     | 55096.64 | 66021.35 | 119828.29 | 9.7411251 | 9.8196844  |
| 27     | 55120.91 | 66063.13 | 119851.31 | 9.7413164 | 9.8199592  |
| 28     | 55145.18 | 66104.92 | 119874.35 | 9.7415075 | 9.8202338  |
| 29     | 55169.44 | 66146.73 | 119897.41 | 9.7416986 | 9.8205084  |
| 30     | 55193.70 | 66188.56 | 119920.49 | 9.7418895 | 9.8207829  |

# 56 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 83867.06 | 153986.50 | 183607.84 | 9.9235914 | 10.1874826 |
| 59     | 83851.21 | 153888.48 | 183525.64 | 9.9235093 | 10.1872061 |
| 58     | 83835.36 | 153790.55 | 183443.53 | 9.9234272 | 10.1869296 |
| 57     | 83819.50 | 153692.70 | 183361.51 | 9.9233405 | 10.1866532 |
| 56     | 83803.63 | 153594.94 | 183279.58 | 9.9232628 | 10.1863769 |
| 55     | 83787.75 | 153497.27 | 183197.74 | 9.9231805 | 10.1861007 |
| 54     | 83771.87 | 153399.69 | 183115.99 | 9.9230982 | 10.1858245 |
| 53     | 83755.98 | 153302.20 | 183034.32 | 9.9230158 | 10.1855484 |
| 52     | 83740.08 | 153203.79 | 182952.74 | 9.9229334 | 10.1852723 |
| 51     | 83724.18 | 153107.47 | 182871.25 | 9.9228509 | 10.1849964 |
| 50     | 83708.27 | 153010.23 | 182789.85 | 9.9227684 | 10.1847205 |
| 49     | 83692.35 | 152913.08 | 182708.54 | 9.9226858 | 10.1844446 |
| 48     | 83676.43 | 152816.02 | 182627.31 | 9.9226032 | 10.1841689 |
| 47     | 83660.50 | 152719.04 | 182546.17 | 9.9225205 | 10.1838932 |
| 46     | 83644.56 | 152622.15 | 182465.12 | 9.9224377 | 10.1836176 |
| 45     | 83628.61 | 152525.35 | 182384.16 | 9.9223549 | 10.1833420 |
| 44     | 83612.66 | 152428.63 | 182303.28 | 9.9222721 | 10.1830665 |
| 43     | 83596.70 | 152332.00 | 182222.49 | 9.9221891 | 10.1827911 |
| 42     | 83580.73 | 152235.45 | 182141.79 | 9.9221062 | 10.1825158 |
| 41     | 83564.76 | 152138.99 | 182061.18 | 9.9220232 | 10.1822405 |
| 40     | 83548.78 | 152042.61 | 181980.65 | 9.9219401 | 10.1819653 |
| 39     | 83532.79 | 151946.32 | 181900.21 | 9.9218570 | 10.1816902 |
| 38     | 83516.80 | 151850.12 | 181819.85 | 9.9217738 | 10.1814151 |
| 37     | 83500.80 | 151754.00 | 181739.58 | 9.9216906 | 10.1811401 |
| 36     | 83484.79 | 151657.96 | 181659.40 | 9.9216073 | 10.1808652 |
| 35     | 83468.77 | 151562.01 | 181579.30 | 9.9215240 | 10.1805904 |
| 34     | 83452.75 | 151466.14 | 181499.29 | 9.9214406 | 10.1803156 |
| 33     | 83436.72 | 151370.36 | 181419.37 | 9.9213572 | 10.1800408 |
| 32     | 83420.68 | 151274.66 | 181339.53 | 9.9212737 | 10.1797662 |
| 31     | 83404.63 | 151179.05 | 181259.77 | 9.9211902 | 10.1794916 |
| 30     | 83388.58 | 151083.52 | 181180.10 | 9.9211066 | 10.1792171 |

## 33 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 55193.70 | 66188.56 | 119920.49 | 9.7418895 | 9.8207829  |
| 31     | 55217.95 | 66230.40 | 119943.59 | 9.7420803 | 9.8210574  |
| 32     | 55242.20 | 66272.26 | 119966.71 | 9.7422710 | 9.8213317  |
| 33     | 55266.45 | 66314.13 | 119989.85 | 9.7424616 | 9.8216060  |
| 34     | 55290.69 | 66356.02 | 120013.01 | 9.7426520 | 9.8218803  |
| 35     | 55314.92 | 66397.92 | 120036.19 | 9.7428423 | 9.8221545  |
| 36     | 55339.15 | 66439.84 | 120059.38 | 9.7430325 | 9.8224286  |
| 37     | 55363.38 | 66481.78 | 120082.59 | 9.7432226 | 9.8227026  |
| 38     | 55387.60 | 66523.73 | 120105.82 | 9.7434126 | 9.8229766  |
| 39     | 55411.82 | 66565.70 | 120129.07 | 9.7436024 | 9.8232505  |
| 40     | 55436.03 | 66607.69 | 120152.34 | 9.7437921 | 9.8235244  |
| 41     | 55460.24 | 66649.69 | 120175.63 | 9.7439817 | 9.8237981  |
| 42     | 55484.44 | 66691.71 | 120198.94 | 9.7441712 | 9.8240719  |
| 43     | 55508.64 | 66733.75 | 120222.27 | 9.7443606 | 9.8243455  |
| 44     | 55532.83 | 66775.80 | 120245.62 | 9.7445498 | 9.8246191  |
| 45     | 55557.02 | 66817.87 | 120268.99 | 9.7447390 | 9.8248926  |
| 46     | 55581.21 | 66859.95 | 120292.37 | 9.7449280 | 9.8251660  |
| 47     | 55605.39 | 66902.05 | 120315.77 | 9.7451169 | 9.8254394  |
| 48     | 55629.56 | 66944.17 | 120339.19 | 9.7453056 | 9.8257127  |
| 49     | 55653.73 | 66986.30 | 120362.64 | 9.7454943 | 9.8259860  |
| 50     | 55677.90 | 67028.45 | 120386.10 | 9.7456828 | 9.8262592  |
| 51     | 55702.06 | 67070.62 | 120409.58 | 9.7458712 | 9.8265323  |
| 52     | 55726.21 | 67112.80 | 120433.08 | 9.7460595 | 9.8268053  |
| 53     | 55750.36 | 67155.00 | 120456.60 | 9.7462477 | 9.8270783  |
| 54     | 55774.51 | 67197.21 | 120480.14 | 9.7464358 | 9.8273513  |
| 55     | 55798.65 | 67239.44 | 120503.70 | 9.7466237 | 9.8276241  |
| 56     | 55822.79 | 67281.69 | 120527.28 | 9.7468115 | 9.8278969  |
| 57     | 55846.92 | 67323.96 | 120550.88 | 9.7469992 | 9.8281696  |
| 58     | 55871.05 | 67366.24 | 120574.50 | 9.7471868 | 9.8284423  |
| 59     | 55895.17 | 67408.54 | 120598.14 | 9.7473743 | 9.8287149  |
| 60     | 55919.29 | 67450.85 | 120621.80 | 9.7475617 | 9.8289874  |

# 56 Grad.

| Minute. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|---------|----------|-----------|-----------|-----------|------------|
| 30      | 83388.58 | 151083.52 | 181180.10 | 9.9211066 | 10.1792171 |
| 29      | 83372.52 | 150988.07 | 181100.52 | 9.9210229 | 10.1789426 |
| 28      | 83356.45 | 150892.71 | 181021.02 | 9.9209393 | 10.1786683 |
| 27      | 83340.38 | 150797.43 | 180941.61 | 9.9208555 | 10.1783940 |
| 26      | 83324.30 | 150702.24 | 180862.28 | 9.9207717 | 10.1781197 |
| 25      | 83308.21 | 150607.13 | 180783.04 | 9.9206878 | 10.1778455 |
| 24      | 83292.12 | 150512.10 | 180703.88 | 9.9206039 | 10.1775714 |
| 23      | 83276.02 | 150417.16 | 180624.81 | 9.9205200 | 10.1772974 |
| 22      | 83259.91 | 150322.30 | 180545.82 | 9.9204360 | 10.1770234 |
| 21      | 83243.80 | 150227.52 | 180466.91 | 9.9203519 | 10.1767495 |
| 20      | 83227.68 | 150132.82 | 180388.09 | 9.9202678 | 10.1764756 |
| 19      | 83211.55 | 150038.20 | 180309.35 | 9.9201836 | 10.1762019 |
| 18      | 83195.41 | 149943.67 | 180230.70 | 9.9200994 | 10.1759281 |
| 17      | 83179.27 | 149849.22 | 180152.13 | 9.9200151 | 10.1756545 |
| 16      | 83163.12 | 149754.86 | 180073.65 | 9.9199308 | 10.1753809 |
| 15      | 83146.96 | 149660.58 | 179995.25 | 9.9198464 | 10.1751074 |
| 14      | 83130.79 | 149566.38 | 179916.93 | 9.9197619 | 10.1748340 |
| 13      | 83114.62 | 149472.26 | 179838.69 | 9.9196775 | 10.1745606 |
| 12      | 83098.44 | 149378.22 | 179760.54 | 9.9195929 | 10.1742873 |
| 11      | 83082.26 | 149284.26 | 179682.47 | 9.9195083 | 10.1740140 |
| 10      | 83066.07 | 149190.38 | 179604.48 | 9.9194237 | 10.1737408 |
| 9       | 83049.87 | 149096.59 | 179526.58 | 9.9193390 | 10.1734677 |
| 8       | 83033.66 | 149002.88 | 179448.76 | 9.9192542 | 10.1731947 |
| 7       | 83017.45 | 148909.25 | 179371.02 | 9.9191694 | 10.1729217 |
| 6       | 83001.23 | 148815.70 | 179293.37 | 9.9190845 | 10.1726487 |
| 5       | 82985.00 | 148722.23 | 179215.80 | 9.9189996 | 10.1723759 |
| 4       | 82968.76 | 148628.84 | 179138.31 | 9.9189146 | 10.1721031 |
| 3       | 82952.52 | 148535.53 | 179060.90 | 9.9188296 | 10.1718304 |
| 2       | 82936.27 | 148442.30 | 178983.58 | 9.9187445 | 10.1715577 |
| 1       | 82920.02 | 148349.16 | 178906.33 | 9.9186594 | 10.1712851 |
| 0       | 82903.76 | 148256.10 | 178829.16 | 9.9185742 | 10.1710126 |

# 34 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 55919.29 | 67450.85 | 120621.80 | 9.7475617 | 9.8289874  |
| 1      | 55943.40 | 67493.18 | 120645.48 | 9.7477489 | 9.8292599  |
| 2      | 55967.51 | 67535.53 | 120669.18 | 9.7479360 | 9.8295323  |
| 3      | 55991.61 | 67577.90 | 120692.89 | 9.7481230 | 9.8298047  |
| 4      | 56015.71 | 67620.28 | 120716.62 | 9.7483099 | 9.8300769  |
| 5      | 56039.81 | 67662.68 | 120740.37 | 9.7484967 | 9.8303492  |
| 6      | 56063.90 | 67705.09 | 120764.14 | 9.7486833 | 9.8306213  |
| 7      | 56087.98 | 67747.52 | 120787.93 | 9.7488698 | 9.8308934  |
| 8      | 56112.06 | 67789.97 | 120811.75 | 9.7490562 | 9.8311654  |
| 9      | 56136.14 | 67832.44 | 120835.59 | 9.7492425 | 9.8314374  |
| 10     | 56160.21 | 67874.92 | 120859.44 | 9.7494287 | 9.8317093  |
| 11     | 56184.28 | 67917.42 | 120883.31 | 9.7496148 | 9.8319811  |
| 12     | 56208.34 | 67959.93 | 120907.20 | 9.7498007 | 9.8322529  |
| 13     | 56232.39 | 68002.46 | 120931.12 | 9.7499866 | 9.8325246  |
| 14     | 56256.44 | 68045.01 | 120955.05 | 9.7501723 | 9.8327963  |
| 15     | 56280.49 | 68087.58 | 120979.00 | 9.7503579 | 9.8330679  |
| 16     | 56304.53 | 68130.16 | 121002.97 | 9.7505434 | 9.8333394  |
| 17     | 56328.57 | 68172.76 | 121026.96 | 9.7507287 | 9.8336109  |
| 18     | 56352.60 | 68215.38 | 121050.97 | 9.7509140 | 9.8338823  |
| 19     | 56376.63 | 68258.01 | 121075.00 | 9.7510991 | 9.8341536  |
| 20     | 56400.65 | 68300.66 | 121099.05 | 9.7512842 | 9.8344249  |
| 21     | 56424.67 | 68343.33 | 121123.12 | 9.7514691 | 9.8346961  |
| 22     | 56448.69 | 68386.01 | 121147.21 | 9.7516538 | 9.8349673  |
| 23     | 56472.70 | 68428.71 | 121171.32 | 9.7518385 | 9.8352384  |
| 24     | 56496.70 | 68471.43 | 121195.45 | 9.7520231 | 9.8355094  |
| 25     | 56520.70 | 68514.17 | 121219.60 | 9.7522075 | 9.8357804  |
| 26     | 56544.69 | 68556.92 | 121243.77 | 9.7523919 | 9.8360513  |
| 27     | 56568.68 | 68599.69 | 121267.96 | 9.7525761 | 9.8363221  |
| 28     | 56592.67 | 68642.47 | 121292.17 | 9.7527602 | 9.8365929  |
| 29     | 56616.65 | 68685.27 | 121316.40 | 9.7529442 | 9.8368636  |
| 30     | 56640.62 | 68728.10 | 121340.64 | 9.7531280 | 9.8371343  |

# 55 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 82903.76 | 148256.10 | 178829.16 | 9.9185742 | 10.1710126 |
| 59     | 82887.49 | 148163.11 | 178752.08 | 9.9184890 | 10.1707401 |
| 58     | 82871.21 | 148070.21 | 178675.08 | 9.9184037 | 10.1704677 |
| 57     | 82854.93 | 147977.38 | 178598.17 | 9.9183183 | 10.1701953 |
| 56     | 82838.64 | 147884.63 | 178521.33 | 9.9182329 | 10.1699231 |
| 55     | 82822.34 | 147791.97 | 178444.57 | 9.9181475 | 10.1696508 |
| 54     | 82806.03 | 147699.38 | 178367.90 | 9.9180620 | 10.1693787 |
| 53     | 82789.72 | 147606.88 | 178291.31 | 9.9179764 | 10.1691066 |
| 52     | 82773.40 | 147514.45 | 178214.79 | 9.9178908 | 10.1688346 |
| 51     | 82757.07 | 147422.10 | 178138.36 | 9.9178051 | 10.1685626 |
| 50     | 82740.74 | 147329.83 | 178062.01 | 9.9177194 | 10.1682907 |
| 49     | 82724.40 | 147237.64 | 177985.74 | 9.9176336 | 10.1680189 |
| 48     | 82708.05 | 147145.53 | 177909.55 | 9.9175478 | 10.1677471 |
| 47     | 82691.70 | 147053.50 | 177833.43 | 9.9174619 | 10.1674754 |
| 46     | 82675.34 | 146961.55 | 177757.40 | 9.9173760 | 10.1672037 |
| 45     | 82658.97 | 146869.67 | 177681.45 | 9.9172900 | 10.1669321 |
| 44     | 82642.60 | 146777.87 | 177605.58 | 9.9172040 | 10.1666606 |
| 43     | 82626.22 | 146686.16 | 177529.79 | 9.9171179 | 10.1663891 |
| 42     | 82609.83 | 146594.52 | 177454.08 | 9.9170317 | 10.1661177 |
| 41     | 82593.43 | 146502.96 | 177378.45 | 9.9169455 | 10.1658464 |
| 40     | 82577.03 | 146411.47 | 177302.90 | 9.9168593 | 10.1655751 |
| 39     | 82560.62 | 146320.07 | 177227.43 | 9.9167730 | 10.1653039 |
| 38     | 82544.20 | 146228.74 | 177152.04 | 9.9166866 | 10.1650327 |
| 37     | 82527.78 | 146137.49 | 177076.73 | 9.9166002 | 10.1647616 |
| 36     | 82511.35 | 146046.32 | 177001.49 | 9.9165137 | 10.1644906 |
| 35     | 82494.91 | 145955.22 | 176926.33 | 9.9164272 | 10.1642196 |
| 34     | 82478.47 | 145864.20 | 176851.25 | 9.9163406 | 10.1639487 |
| 33     | 82462.02 | 145773.26 | 176776.25 | 9.9162539 | 10.1636779 |
| 32     | 82445.56 | 145682.40 | 176701.33 | 9.9161673 | 10.1634071 |
| 31     | 82429.09 | 145591.61 | 176626.49 | 9.9160805 | 10.1631364 |
| 30     | 82412.62 | 145500.90 | 176551.73 | 9.9159937 | 10.1628657 |



## 34 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 56640.62 | 68728.10 | 121340.64 | 9.7531280 | 9.8371343  |
| 31     | 56664.59 | 68770.94 | 121364.91 | 9.7533118 | 9.8374049  |
| 32     | 56688.56 | 68813.79 | 121389.20 | 9.7534954 | 9.8376755  |
| 33     | 56712.52 | 68856.66 | 121413.51 | 9.7536790 | 9.8379460  |
| 34     | 56736.48 | 68899.55 | 121437.83 | 9.7538624 | 9.8382164  |
| 35     | 56760.43 | 68942.46 | 121462.18 | 9.7540457 | 9.8384867  |
| 36     | 56784.37 | 68985.38 | 121486.55 | 9.7542288 | 9.8387571  |
| 37     | 56808.31 | 69028.32 | 121510.94 | 9.7544119 | 9.8390273  |
| 38     | 56832.25 | 69071.28 | 121535.35 | 9.7545949 | 9.8392975  |
| 39     | 56856.18 | 69114.25 | 121559.78 | 9.7547777 | 9.8395676  |
| 40     | 56880.11 | 69157.24 | 121584.23 | 9.7549604 | 9.8398377  |
| 41     | 56904.03 | 69200.25 | 121608.70 | 9.7551431 | 9.8401077  |
| 42     | 56927.95 | 69243.28 | 121633.19 | 9.7553256 | 9.8403776  |
| 43     | 56951.86 | 69286.33 | 121657.70 | 9.7555080 | 9.8406475  |
| 44     | 56975.77 | 69329.39 | 121682.23 | 9.7556902 | 9.8409174  |
| 45     | 56999.68 | 69372.47 | 121706.78 | 9.7558724 | 9.8411871  |
| 46     | 57023.58 | 69415.57 | 121731.35 | 9.7560544 | 9.8414569  |
| 47     | 57047.47 | 69458.68 | 121755.94 | 9.7562364 | 9.8417265  |
| 48     | 57071.36 | 69501.81 | 121780.55 | 9.7564182 | 9.8419961  |
| 49     | 57095.24 | 69544.96 | 121805.18 | 9.7565999 | 9.8422657  |
| 50     | 57119.12 | 69588.13 | 121829.83 | 9.7567815 | 9.8425351  |
| 51     | 57142.99 | 69631.31 | 121854.50 | 9.7569630 | 9.8428046  |
| 52     | 57166.86 | 69674.51 | 121879.19 | 9.7571444 | 9.8430739  |
| 53     | 57190.73 | 69717.73 | 121903.90 | 9.7573256 | 9.8433432  |
| 54     | 57214.59 | 69760.97 | 121928.64 | 9.7575068 | 9.8436125  |
| 55     | 57238.44 | 69804.22 | 121953.39 | 9.7576878 | 9.8438817  |
| 56     | 57262.29 | 69847.49 | 121978.16 | 9.7578687 | 9.8441508  |
| 57     | 57286.14 | 69890.78 | 122002.96 | 9.7580495 | 9.8444199  |
| 58     | 57309.98 | 69934.09 | 122027.77 | 9.7582302 | 9.8446889  |
| 59     | 57333.81 | 69977.41 | 122052.60 | 9.7584108 | 9.8449579  |
| 60     | 57357.64 | 70020.75 | 122077.46 | 9.7585913 | 9.8452268  |

## 55 Grad.

| Minut. | Sinus    | Tang      | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 82412.62 | 145500.90 | 176551.73 | 9.9159937 | 10.1628657 |
| 29     | 82396.14 | 145410.27 | 176477.04 | 9.9159069 | 10.1625951 |
| 28     | 82379.65 | 145319.71 | 176402.43 | 9.9158200 | 10.1623245 |
| 27     | 82363.16 | 145229.23 | 176327.91 | 9.9157330 | 10.1620540 |
| 26     | 82346.66 | 145138.83 | 176253.45 | 9.9156460 | 10.1617836 |
| 25     | 82330.15 | 145048.50 | 176179.08 | 9.9155589 | 10.1615133 |
| 24     | 82313.64 | 144958.25 | 176104.78 | 9.9154718 | 10.1612429 |
| 23     | 82297.12 | 144868.00 | 176030.56 | 9.9153846 | 10.1609727 |
| 22     | 82280.59 | 144777.98 | 175956.42 | 9.9152974 | 10.1607025 |
| 21     | 82264.05 | 144687.96 | 175882.36 | 9.9152101 | 10.1604324 |
| 20     | 82247.51 | 144598.01 | 175808.37 | 9.9151228 | 10.1601623 |
| 19     | 82230.96 | 144508.14 | 175734.46 | 9.9150354 | 10.1598923 |
| 18     | 82214.40 | 144418.34 | 175660.63 | 9.9149479 | 10.1596224 |
| 17     | 82197.84 | 144328.62 | 175586.87 | 9.9148604 | 10.1593525 |
| 16     | 82181.27 | 144238.97 | 175513.19 | 9.9147729 | 10.1590826 |
| 15     | 82164.69 | 144149.40 | 175439.59 | 9.9146852 | 10.1588129 |
| 14     | 82148.11 | 144059.91 | 175366.07 | 9.9145976 | 10.1585431 |
| 13     | 82131.52 | 143970.49 | 175292.62 | 9.9145099 | 10.1582735 |
| 12     | 82114.92 | 143881.14 | 175219.24 | 9.9144221 | 10.1580039 |
| 11     | 82098.31 | 143791.87 | 175145.94 | 9.9143342 | 10.1577343 |
| 10     | 82081.70 | 143702.68 | 175072.73 | 9.9142464 | 10.1574649 |
| 9      | 82065.08 | 143613.56 | 174999.58 | 9.9141584 | 10.1571954 |
| 8      | 82048.46 | 143524.51 | 174926.51 | 9.9140704 | 10.1569261 |
| 7      | 82031.83 | 143435.54 | 174853.52 | 9.9139824 | 10.1566568 |
| 6      | 82015.19 | 143346.64 | 174780.60 | 9.9138943 | 10.1563875 |
| 5      | 81998.54 | 143257.81 | 174707.76 | 9.9138061 | 10.1561183 |
| 4      | 81981.89 | 143169.06 | 174634.99 | 9.9137179 | 10.1558492 |
| 3      | 81965.23 | 143080.39 | 174562.30 | 9.9136296 | 10.1555801 |
| 2      | 81948.56 | 142991.78 | 174489.69 | 9.9135413 | 10.1553111 |
| 1      | 81931.89 | 142903.26 | 174417.15 | 9.9134530 | 10.1550421 |
| 0      | 81915.21 | 142814.80 | 174344.68 | 9.9133645 | 10.1547732 |

# 35 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 57357.64 | 70020.75 | 122077.46 | 9.7585913 | 9.8452268  |
| 1      | 57381.47 | 70064.11 | 122102.33 | 9.7587717 | 9.8454956  |
| 2      | 57405.29 | 70107.49 | 122127.23 | 9.7589519 | 9.8457644  |
| 3      | 57429.11 | 70150.89 | 122152.15 | 9.7591321 | 9.8460332  |
| 4      | 57452.92 | 70194.30 | 122177.08 | 9.7593121 | 9.8463018  |
| 5      | 57476.72 | 70237.73 | 122202.04 | 9.7594920 | 9.8465705  |
| 6      | 57500.52 | 70281.81 | 122227.02 | 9.7596718 | 9.8468390  |
| 7      | 57524.32 | 70324.65 | 122252.02 | 9.7598515 | 9.8471075  |
| 8      | 57548.11 | 70368.13 | 122277.03 | 9.7600311 | 9.8473760  |
| 9      | 57571.90 | 70411.63 | 122302.07 | 9.7602106 | 9.8476444  |
| 10     | 57595.68 | 70455.15 | 122327.13 | 9.7603899 | 9.8479127  |
| 11     | 57619.46 | 70498.69 | 122352.21 | 9.7605692 | 9.8481810  |
| 12     | 57643.23 | 70542.24 | 122377.32 | 9.7607483 | 9.8484492  |
| 13     | 57667.00 | 70585.81 | 122402.44 | 9.7609274 | 9.8487174  |
| 14     | 57690.76 | 70629.40 | 122427.58 | 9.7611063 | 9.8489855  |
| 15     | 57714.52 | 70673.01 | 122452.74 | 9.7612851 | 9.8492536  |
| 16     | 57738.27 | 70716.64 | 122477.93 | 9.7614638 | 9.8495216  |
| 17     | 57762.02 | 70760.29 | 122503.13 | 9.7616424 | 9.8497896  |
| 18     | 57785.76 | 70803.95 | 122528.36 | 9.7618208 | 9.8500575  |
| 19     | 57809.50 | 70847.63 | 122553.61 | 9.7619992 | 9.8503253  |
| 20     | 57833.23 | 70891.33 | 122578.87 | 9.7621775 | 9.8505931  |
| 21     | 57856.96 | 70935.05 | 122604.16 | 9.7623556 | 9.8508608  |
| 22     | 57880.68 | 70978.78 | 122629.47 | 9.7625337 | 9.8511285  |
| 23     | 57904.40 | 71022.53 | 122654.80 | 9.7627116 | 9.8513961  |
| 24     | 57928.12 | 71066.30 | 122680.15 | 9.7628894 | 9.8516637  |
| 25     | 57951.83 | 71110.09 | 122705.52 | 9.7630671 | 9.8519312  |
| 26     | 57975.53 | 71153.90 | 122730.91 | 9.7632447 | 9.8521987  |
| 27     | 57999.23 | 71197.73 | 122756.33 | 9.7634222 | 9.8524661  |
| 28     | 58022.92 | 71241.57 | 122781.76 | 9.7635996 | 9.8527335  |
| 29     | 58046.61 | 71285.43 | 122807.21 | 9.7637769 | 9.8530008  |
| 30     | 58070.30 | 71329.31 | 122832.69 | 9.7639540 | 9.8532680  |

# 54 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 81915.21 | 142814.80 | 174344.68 | 9.9133645 | 10.1547732 |
| 59     | 81898.52 | 142726.42 | 174272.29 | 9.9132760 | 10.1545044 |
| 58     | 81881.82 | 142638.11 | 174199.97 | 9.9131875 | 10.1542356 |
| 57     | 81865.12 | 142549.87 | 174127.73 | 9.9130989 | 10.1539668 |
| 56     | 81848.41 | 142461.71 | 174055.56 | 9.9130102 | 10.1536982 |
| 55     | 81831.69 | 142373.62 | 173983.47 | 9.9129215 | 10.1534295 |
| 54     | 81814.97 | 142285.61 | 173911.45 | 9.9128328 | 10.1531610 |
| 53     | 81798.24 | 142197.66 | 173839.51 | 9.9127440 | 10.1528925 |
| 52     | 81781.50 | 142109.79 | 173767.64 | 9.9126551 | 10.1526240 |
| 51     | 81764.76 | 142022.00 | 173695.85 | 9.9125662 | 10.1523556 |
| 50     | 81748.01 | 141934.27 | 173624.13 | 9.9124772 | 10.1520873 |
| 49     | 81731.25 | 141846.62 | 173552.47 | 9.9123882 | 10.1518190 |
| 48     | 81714.49 | 141759.04 | 173480.90 | 9.9122991 | 10.1515508 |
| 47     | 81697.72 | 141671.53 | 173409.41 | 9.9122099 | 10.1512826 |
| 46     | 81680.94 | 141584.09 | 173337.98 | 9.9121207 | 10.1510145 |
| 45     | 81664.15 | 141496.73 | 173266.63 | 9.9120315 | 10.1507464 |
| 44     | 81647.36 | 141409.43 | 173195.35 | 9.9119422 | 10.1504784 |
| 43     | 81630.56 | 141322.21 | 173124.14 | 9.9118528 | 10.1502104 |
| 42     | 81613.76 | 141235.06 | 173053.01 | 9.9117634 | 10.1499425 |
| 41     | 81596.95 | 141147.99 | 172981.95 | 9.9116739 | 10.1496747 |
| 40     | 81580.13 | 141060.98 | 172910.96 | 9.9115844 | 10.1494069 |
| 39     | 81563.30 | 140974.05 | 172840.05 | 9.9114948 | 10.1491392 |
| 38     | 81546.47 | 140887.18 | 172769.21 | 9.9114051 | 10.1488715 |
| 37     | 81529.63 | 140800.39 | 172698.44 | 9.9113155 | 10.1486039 |
| 36     | 81512.78 | 140713.67 | 172627.74 | 9.9112257 | 10.1483363 |
| 35     | 81495.93 | 140627.02 | 172557.12 | 9.9111359 | 10.1480688 |
| 34     | 81479.06 | 140540.44 | 172486.57 | 9.9110460 | 10.1478013 |
| 33     | 81462.19 | 140453.93 | 172416.09 | 9.9109561 | 10.1475339 |
| 32     | 81445.32 | 140367.49 | 172345.68 | 9.9108661 | 10.1472665 |
| 31     | 81428.44 | 140281.13 | 172275.34 | 9.9107761 | 10.1469992 |
| 30     | 81411.55 | 140194.83 | 172205.08 | 9.9106860 | 10.1467320 |

# 35 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 58070.30 | 71329.31 | 122832.69 | 9.7639540 | 9.8532680  |
| 31     | 58093.98 | 71373.21 | 122858.19 | 9.7641311 | 9.8535352  |
| 32     | 58117.65 | 71417.13 | 122883.71 | 9.7643080 | 9.8538023  |
| 33     | 58141.32 | 71461.06 | 122909.25 | 9.7644849 | 9.8540694  |
| 34     | 58164.98 | 71505.01 | 122934.81 | 9.7646616 | 9.8543365  |
| 35     | 58188.64 | 71548.98 | 122960.39 | 9.7648382 | 9.8546034  |
| 36     | 58212.30 | 71592.97 | 122985.99 | 9.7650147 | 9.8548704  |
| 37     | 58235.95 | 71636.98 | 123011.61 | 9.7651911 | 9.8551372  |
| 38     | 58259.59 | 71681.01 | 123037.25 | 9.7653674 | 9.8554041  |
| 39     | 58283.23 | 71725.05 | 123062.92 | 9.7655436 | 9.8556708  |
| 40     | 58306.87 | 71769.11 | 123088.61 | 9.7657197 | 9.8559376  |
| 41     | 58330.50 | 71813.19 | 123114.32 | 9.7658957 | 9.8562042  |
| 42     | 58354.12 | 71857.29 | 123140.05 | 9.7660715 | 9.8564708  |
| 43     | 58377.74 | 71901.41 | 123165.80 | 9.7662473 | 9.8567374  |
| 44     | 58401.36 | 71945.55 | 123191.57 | 9.7664229 | 9.8570039  |
| 45     | 58424.97 | 71989.70 | 123217.36 | 9.7665985 | 9.8572704  |
| 46     | 58448.57 | 72033.87 | 123243.17 | 9.7667739 | 9.8575368  |
| 47     | 58472.17 | 72078.06 | 123269.00 | 9.7669492 | 9.8578031  |
| 48     | 58495.77 | 72122.27 | 123294.86 | 9.7671244 | 9.8580694  |
| 49     | 58519.36 | 72166.50 | 123320.74 | 9.7672996 | 9.8583357  |
| 50     | 58542.94 | 72210.75 | 123346.64 | 9.7674746 | 9.8586019  |
| 51     | 58566.52 | 72255.02 | 123372.56 | 9.7676494 | 9.8588680  |
| 52     | 58590.10 | 72299.31 | 123398.50 | 9.7678242 | 9.8591341  |
| 53     | 58613.67 | 72343.61 | 123424.46 | 9.7679989 | 9.8594002  |
| 54     | 58637.24 | 72387.93 | 123450.44 | 9.7681735 | 9.8596661  |
| 55     | 58660.80 | 72432.27 | 123476.45 | 9.7683480 | 9.8599321  |
| 56     | 58684.35 | 72476.63 | 123502.48 | 9.7685223 | 9.8601980  |
| 57     | 58707.90 | 72521.01 | 123528.52 | 9.7686966 | 9.8604638  |
| 58     | 58731.45 | 72565.41 | 123554.59 | 9.7688707 | 9.8607296  |
| 59     | 58754.99 | 72609.83 | 123580.68 | 9.7690448 | 9.8609954  |
| 60     | 58778.53 | 72654.26 | 123606.80 | 9.7692187 | 9.8612610  |

# 54 Grad.

| Minut. | Sinns    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 81411.55 | 140194.83 | 172205.08 | 9.9106860 | 10.1467320 |
| 29     | 81394.65 | 140108.60 | 172134.89 | 9.9105959 | 10.1464648 |
| 28     | 81377.75 | 140022.45 | 172064.77 | 9.9105057 | 10.1461977 |
| 27     | 81360.84 | 139936.36 | 171994.72 | 9.9104155 | 10.1459306 |
| 26     | 81343.93 | 139850.34 | 171924.75 | 9.9103251 | 10.1456635 |
| 25     | 81327.01 | 139764.40 | 171854.84 | 9.9102348 | 10.1453966 |
| 24     | 81310.08 | 139678.52 | 171785.01 | 9.9101444 | 10.1451296 |
| 23     | 81293.14 | 139592.72 | 171715.25 | 9.9100539 | 10.1448628 |
| 22     | 81276.20 | 139506.98 | 171645.56 | 9.9099634 | 10.1445959 |
| 21     | 81259.25 | 139421.31 | 171575.94 | 9.9098728 | 10.1443292 |
| 20     | 81242.29 | 139335.71 | 171506.39 | 9.9097821 | 10.1440624 |
| 19     | 81225.32 | 139250.18 | 171436.91 | 9.9096915 | 10.1437958 |
| 18     | 81208.35 | 139164.73 | 171367.50 | 9.9096007 | 10.1435292 |
| 17     | 81191.37 | 139079.34 | 171298.17 | 9.9095099 | 10.1432626 |
| 16     | 81174.39 | 138994.01 | 171228.90 | 9.9094190 | 10.1429961 |
| 15     | 81157.40 | 138908.76 | 171159.70 | 9.9093281 | 10.1427296 |
| 14     | 81140.40 | 138823.58 | 171090.58 | 9.9092371 | 10.1424632 |
| 13     | 81123.39 | 138738.46 | 171021.52 | 9.9091461 | 10.1421969 |
| 12     | 81106.38 | 138653.42 | 170952.54 | 9.9090550 | 10.1419306 |
| 11     | 81089.36 | 138568.44 | 170883.62 | 9.9089639 | 10.1416643 |
| 10     | 81072.33 | 138483.53 | 170814.78 | 9.9088727 | 10.1413981 |
| 9      | 81055.30 | 138398.69 | 170746.00 | 9.9087814 | 10.1411320 |
| 8      | 81038.26 | 138313.92 | 170677.30 | 9.9086901 | 10.1408659 |
| 7      | 81021.21 | 138229.22 | 170608.66 | 9.9085988 | 10.1405998 |
| 6      | 81004.16 | 138144.58 | 170540.10 | 9.9085073 | 10.1403339 |
| 5      | 80987.10 | 138060.01 | 170471.60 | 9.9084159 | 10.1400679 |
| 4      | 80970.03 | 137975.51 | 170403.18 | 9.9083243 | 10.1398020 |
| 3      | 80952.96 | 137891.08 | 170334.82 | 9.9082327 | 10.1395362 |
| 2      | 80935.88 | 137806.72 | 170266.53 | 9.9081411 | 10.1392704 |
| 1      | 80918.79 | 137722.42 | 170198.31 | 9.9080494 | 10.1390046 |
| 0      | 80901.70 | 137638.19 | 170130.16 | 9.9079576 | 10.1387390 |

# 36 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 58778.53 | 72654.26 | 123606.80 | 9.7692187 | 9.8612610  |
| 1      | 58802.06 | 72698.71 | 123632.94 | 9.7693925 | 9.8615267  |
| 2      | 58825.58 | 72743.18 | 123659.09 | 9.7695662 | 9.8617923  |
| 3      | 58849.10 | 72787.67 | 123685.26 | 9.7697398 | 9.8620578  |
| 4      | 58872.62 | 72832.18 | 123711.48 | 9.7699134 | 9.8623233  |
| 5      | 58896.13 | 72876.71 | 123737.68 | 9.7700868 | 9.8625887  |
| 6      | 58919.64 | 72921.26 | 123763.93 | 9.7702601 | 9.8628541  |
| 7      | 58943.14 | 72965.82 | 123790.19 | 9.7704332 | 9.8631195  |
| 8      | 58966.63 | 73010.40 | 123816.47 | 9.7706063 | 9.8633848  |
| 9      | 58990.12 | 73055.01 | 123842.78 | 9.7707793 | 9.8636500  |
| 10     | 59013.61 | 73099.63 | 123869.11 | 9.7709522 | 9.8639152  |
| 11     | 59037.09 | 73144.27 | 123895.46 | 9.7711249 | 9.8641803  |
| 12     | 59060.57 | 73188.94 | 123921.83 | 9.7712976 | 9.8644454  |
| 13     | 59084.04 | 73233.62 | 123948.22 | 9.7714702 | 9.8647105  |
| 14     | 59107.50 | 73278.31 | 123974.64 | 9.7716426 | 9.8649755  |
| 15     | 59130.96 | 73323.03 | 124001.08 | 9.7718150 | 9.8652404  |
| 16     | 59154.42 | 73367.77 | 124027.54 | 9.7719872 | 9.8655053  |
| 17     | 59177.87 | 73412.53 | 124054.02 | 9.7721593 | 9.8657702  |
| 18     | 59201.32 | 73457.30 | 124080.52 | 9.7723314 | 9.8660350  |
| 19     | 59224.76 | 73502.10 | 124107.04 | 9.7725033 | 9.8662997  |
| 20     | 59248.19 | 73546.91 | 124133.59 | 9.7726751 | 9.8665644  |
| 21     | 59271.62 | 73591.74 | 124160.16 | 9.7728468 | 9.8668291  |
| 22     | 59295.05 | 73636.60 | 124186.75 | 9.7730185 | 9.8670937  |
| 23     | 59318.47 | 73681.47 | 124213.36 | 9.7731900 | 9.8673583  |
| 24     | 59341.89 | 73726.36 | 124239.99 | 9.7733614 | 9.8676228  |
| 25     | 59365.30 | 73771.27 | 124266.65 | 9.7735327 | 9.8678873  |
| 26     | 59388.71 | 73816.20 | 124293.33 | 9.7737039 | 9.8681517  |
| 27     | 59412.11 | 73861.15 | 124320.03 | 9.7738749 | 9.8684160  |
| 28     | 59435.50 | 73906.11 | 124346.75 | 9.7740459 | 9.8686804  |
| 29     | 59458.89 | 73951.10 | 124373.49 | 9.7742168 | 9.8689446  |
| 30     | 59482.28 | 73996.11 | 124400.26 | 9.7743876 | 9.8692089  |

# 53 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 80901.70 | 137638.19 | 170130.16 | 9.9079576 | 10.1387390 |
| 59     | 80884.60 | 137554.07 | 170062.08 | 9.9078658 | 10.1384733 |
| 58     | 80867.49 | 137469.94 | 169994.07 | 9.9077740 | 10.1382077 |
| 57     | 80850.37 | 137385.91 | 169926.12 | 9.9076820 | 10.1379422 |
| 56     | 80833.25 | 137301.95 | 169858.25 | 9.9075901 | 10.1376767 |
| 55     | 80816.12 | 137218.05 | 169790.44 | 9.9074980 | 10.1374113 |
| 54     | 80798.99 | 137134.23 | 169722.71 | 9.9074059 | 10.1371459 |
| 53     | 80781.85 | 137050.47 | 169655.04 | 9.9073138 | 10.1368805 |
| 52     | 80764.70 | 136966.78 | 169587.43 | 9.9072216 | 10.1366152 |
| 51     | 80747.54 | 136883.15 | 169519.90 | 9.9071293 | 10.1363500 |
| 50     | 80730.38 | 136799.59 | 169452.44 | 9.9070370 | 10.1360848 |
| 49     | 80713.21 | 136716.10 | 169385.04 | 9.9069446 | 10.1358197 |
| 48     | 80696.03 | 136632.67 | 169317.71 | 9.9068522 | 10.1355546 |
| 47     | 80678.85 | 136549.31 | 169250.45 | 9.9067597 | 10.1352895 |
| 46     | 80661.66 | 136466.02 | 169183.26 | 9.9066671 | 10.1350245 |
| 45     | 80644.46 | 136382.79 | 169116.13 | 9.9065745 | 10.1347596 |
| 44     | 80627.26 | 136299.63 | 169049.07 | 9.9064819 | 10.1344947 |
| 43     | 80610.05 | 136216.53 | 168982.08 | 9.9063892 | 10.1342298 |
| 42     | 80592.83 | 136133.50 | 168915.16 | 9.9062964 | 10.1339650 |
| 41     | 80575.60 | 136050.54 | 168848.30 | 9.9062036 | 10.1337003 |
| 40     | 80558.37 | 135967.64 | 168781.51 | 9.9061107 | 10.1334356 |
| 39     | 80541.13 | 135884.81 | 168714.79 | 9.9060177 | 10.1331709 |
| 38     | 80523.89 | 135802.04 | 168648.14 | 9.9059247 | 10.1329063 |
| 37     | 80506.64 | 135719.34 | 168581.55 | 9.9058317 | 10.1326417 |
| 36     | 80489.38 | 135636.70 | 168515.03 | 9.9057386 | 10.1323772 |
| 35     | 80472.11 | 135554.13 | 168448.57 | 9.9056454 | 10.1321127 |
| 34     | 80454.84 | 135471.62 | 168382.18 | 9.9055522 | 10.1318483 |
| 33     | 80437.56 | 135389.18 | 168315.86 | 9.9054589 | 10.1315840 |
| 32     | 80420.28 | 135306.80 | 168249.61 | 9.9053656 | 10.1313196 |
| 31     | 80402.99 | 135224.49 | 168183.42 | 9.9052722 | 10.1310554 |
| 30     | 80385.69 | 135142.24 | 168117.30 | 9.9051787 | 10.1307911 |



# 36 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log Sin.  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 59482.28 | 73996.11 | 124400.26 | 9.7743876 | 9.8692089  |
| 31     | 59505.66 | 74041.14 | 124427.05 | 9.7745583 | 9.8694731  |
| 32     | 59529.03 | 74086.18 | 124453.86 | 9.7747288 | 9.8697372  |
| 33     | 59552.40 | 74131.24 | 124480.69 | 9.7748993 | 9.8700013  |
| 34     | 59575.77 | 74176.33 | 124507.54 | 9.7750697 | 9.8702653  |
| 35     | 59599.13 | 74221.43 | 124534.42 | 9.7752399 | 9.8705293  |
| 36     | 59622.49 | 74266.55 | 124561.31 | 9.7754101 | 9.8707933  |
| 37     | 59645.84 | 74311.70 | 124588.23 | 9.7755801 | 9.8710572  |
| 38     | 59669.18 | 74356.86 | 124615.18 | 9.7757501 | 9.8713210  |
| 39     | 59692.52 | 74402.04 | 124642.14 | 9.7759199 | 9.8715848  |
| 40     | 59715.86 | 74447.24 | 124669.13 | 9.7760897 | 9.8718486  |
| 41     | 59739.19 | 74492.46 | 124696.14 | 9.7762593 | 9.8721123  |
| 42     | 59762.51 | 74537.70 | 124723.17 | 9.7764289 | 9.8723760  |
| 43     | 59785.83 | 74582.96 | 124750.22 | 9.7765983 | 9.8726396  |
| 44     | 59809.15 | 74628.24 | 124777.30 | 9.7767676 | 9.8729032  |
| 45     | 59832.46 | 74673.54 | 124804.40 | 9.7769369 | 9.8731668  |
| 46     | 59855.76 | 74718.86 | 124831.52 | 9.7771060 | 9.8734302  |
| 47     | 59879.06 | 74764.20 | 124858.66 | 9.7772750 | 9.8736937  |
| 48     | 59902.36 | 74809.56 | 124885.83 | 9.7774439 | 9.8739571  |
| 49     | 59925.65 | 74854.94 | 124913.02 | 9.7776128 | 9.8742204  |
| 50     | 59948.93 | 74900.33 | 124940.23 | 9.7777815 | 9.8744838  |
| 51     | 59972.21 | 74945.75 | 124967.46 | 9.7779501 | 9.8747470  |
| 52     | 59995.49 | 74991.19 | 124994.71 | 9.7781186 | 9.8750102  |
| 53     | 60018.76 | 75036.65 | 125021.99 | 9.7782870 | 9.8752734  |
| 54     | 60042.02 | 75082.12 | 125049.29 | 9.7784553 | 9.8755365  |
| 55     | 60065.28 | 75127.62 | 125076.61 | 9.7786235 | 9.8757996  |
| 56     | 60088.53 | 75173.14 | 125103.96 | 9.7787916 | 9.8760627  |
| 57     | 60111.78 | 75218.67 | 125131.33 | 9.7789596 | 9.8763257  |
| 58     | 60135.03 | 75264.23 | 125158.72 | 9.7791275 | 9.8765886  |
| 59     | 60158.27 | 75309.81 | 125186.13 | 9.7792953 | 9.8768515  |
| 60     | 60181.50 | 75355.40 | 125213.57 | 9.7794630 | 9.8771144  |

# 53 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 80385.69 | 135142.24 | 168117.30 | 9.9051787 | 10.1307911 |
| 29     | 80368.38 | 135060.06 | 168051.24 | 9.9050852 | 10.1305269 |
| 28     | 80351.07 | 134977.94 | 167985.25 | 9.9049916 | 10.1302628 |
| 27     | 80333.75 | 134895.89 | 167919.33 | 9.9048980 | 10.1299987 |
| 26     | 80316.42 | 134813.90 | 167853.47 | 9.9048043 | 10.1297347 |
| 25     | 80299.09 | 134731.97 | 167787.68 | 9.9047106 | 10.1294707 |
| 24     | 80281.75 | 134650.11 | 167721.95 | 9.9046168 | 10.1292067 |
| 23     | 80264.40 | 134568.32 | 167656.29 | 9.9045230 | 10.1289428 |
| 22     | 80247.05 | 134486.58 | 167590.70 | 9.9044291 | 10.1286790 |
| 21     | 80229.69 | 134404.92 | 167525.17 | 9.9043351 | 10.1284152 |
| 20     | 80212.32 | 134323.31 | 167459.70 | 9.9042411 | 10.1281514 |
| 19     | 80194.94 | 134241.77 | 167394.30 | 9.9041470 | 10.1278877 |
| 18     | 80177.56 | 134160.29 | 167328.97 | 9.9040529 | 10.1276240 |
| 17     | 80160.17 | 134078.88 | 167263.70 | 9.9039587 | 10.1273604 |
| 16     | 80142.78 | 133997.53 | 167198.50 | 9.9038644 | 10.1270968 |
| 15     | 80125.38 | 133916.24 | 167133.36 | 9.9037701 | 10.1268332 |
| 14     | 80107.97 | 133835.02 | 167068.28 | 9.9036757 | 10.1265698 |
| 13     | 80090.56 | 133753.86 | 167003.28 | 9.9035813 | 10.1263063 |
| 12     | 80073.14 | 133672.76 | 166938.33 | 9.9034868 | 10.1260429 |
| 11     | 80055.71 | 133591.72 | 166873.45 | 9.9033923 | 10.1257796 |
| 10     | 80038.27 | 133510.75 | 166808.64 | 9.9032977 | 10.1255162 |
| 9      | 80020.83 | 133429.84 | 166743.89 | 9.9032031 | 10.1252530 |
| 8      | 80003.38 | 133349.00 | 166679.20 | 9.9031084 | 10.1249898 |
| 7      | 79985.93 | 133268.22 | 166614.58 | 9.9030136 | 10.1247266 |
| 6      | 79968.47 | 133187.49 | 166550.02 | 9.9029188 | 10.1244635 |
| 5      | 79951.00 | 133106.84 | 166485.52 | 9.9028239 | 10.1242004 |
| 4      | 79933.52 | 133026.24 | 166421.09 | 9.9027289 | 10.1239373 |
| 3      | 79916.04 | 132945.71 | 166356.73 | 9.9026339 | 10.1236743 |
| 2      | 79898.55 | 132865.24 | 166292.43 | 9.9025389 | 10.1234114 |
| 1      | 79881.05 | 132784.83 | 166228.19 | 9.9024438 | 10.1231485 |
| 0      | 79863.55 | 132704.48 | 166164.01 | 9.9023486 | 10.1228856 |

## 37 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 60181.50 | 75355.40 | 125213.57 | 9.7794630 | 9.8771144  |
| 1      | 60204.73 | 75401.02 | 125241.02 | 9.7796306 | 9.8773772  |
| 2      | 60227.95 | 75446.66 | 125268.50 | 9.7797981 | 9.8776400  |
| 3      | 60251.17 | 75492.32 | 125296.01 | 9.7799655 | 9.8779027  |
| 4      | 60274.39 | 75537.99 | 125323.53 | 9.7801328 | 9.8781654  |
| 5      | 60297.60 | 75583.69 | 125351.08 | 9.7803000 | 9.8784281  |
| 6      | 60320.80 | 75629.41 | 125378.65 | 9.7804671 | 9.8786907  |
| 7      | 60344.00 | 75675.14 | 125406.25 | 9.7806341 | 9.8789533  |
| 8      | 60367.19 | 75720.90 | 125433.87 | 9.7808010 | 9.8792158  |
| 9      | 60390.38 | 75766.68 | 125461.51 | 9.7809677 | 9.8794782  |
| 10     | 60413.56 | 75812.48 | 125489.17 | 9.7811344 | 9.8797407  |
| 11     | 60436.74 | 75858.29 | 125516.85 | 9.7813010 | 9.8800031  |
| 12     | 60459.91 | 75904.13 | 125544.56 | 9.7814675 | 9.8802654  |
| 13     | 60483.08 | 75949.99 | 125572.29 | 9.7816339 | 9.8805277  |
| 14     | 60506.24 | 75995.87 | 125600.05 | 9.7818002 | 9.8807900  |
| 15     | 60529.40 | 76041.77 | 125627.82 | 9.7819664 | 9.8810522  |
| 16     | 60552.55 | 76087.69 | 125655.62 | 9.7821324 | 9.8813144  |
| 17     | 60575.70 | 76133.63 | 125683.45 | 9.7822984 | 9.8815765  |
| 18     | 60598.84 | 76179.59 | 125711.29 | 9.7824643 | 9.8818386  |
| 19     | 60621.98 | 76225.57 | 125739.16 | 9.7826301 | 9.8821007  |
| 20     | 60645.11 | 76271.57 | 125767.05 | 9.7827958 | 9.8823627  |
| 21     | 60668.23 | 76317.59 | 125794.97 | 9.7829614 | 9.8826246  |
| 22     | 60691.35 | 76363.63 | 125822.91 | 9.7831268 | 9.8828866  |
| 23     | 60714.47 | 76409.69 | 125850.87 | 9.7832922 | 9.8831484  |
| 24     | 60737.58 | 76455.77 | 125878.85 | 9.7834575 | 9.8834103  |
| 25     | 60760.69 | 76501.88 | 125906.86 | 9.7836227 | 9.8836721  |
| 26     | 60783.79 | 76548.00 | 125934.89 | 9.7837878 | 9.8839338  |
| 27     | 60806.89 | 76594.14 | 125962.94 | 9.7839528 | 9.8841956  |
| 28     | 60829.98 | 76640.31 | 125991.02 | 9.7841177 | 9.8844572  |
| 29     | 60853.06 | 76686.49 | 126019.12 | 9.7842824 | 9.8847189  |
| 30     | 60876.14 | 76732.70 | 126047.24 | 9.7844471 | 9.8849805  |

## 52 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 79863.55 | 132704.48 | 166164.01 | 9.9023486 | 10.1228856 |
| 59     | 79846.04 | 132624.20 | 166099.90 | 9.9022534 | 10.1226228 |
| 58     | 79828.52 | 132543.97 | 166035.85 | 9.9021581 | 10.1223600 |
| 57     | 79811.00 | 132463.81 | 165971.87 | 9.9020628 | 10.1220973 |
| 56     | 79793.47 | 132383.71 | 165907.95 | 9.9019674 | 10.1218346 |
| 55     | 79775.93 | 132303.68 | 165844.09 | 9.9018719 | 10.1215719 |
| 54     | 79758.39 | 132223.70 | 165780.30 | 9.9017764 | 10.1213093 |
| 53     | 79740.84 | 132143.79 | 165716.57 | 9.9016808 | 10.1210467 |
| 52     | 79723.28 | 132063.93 | 165652.90 | 9.9015852 | 10.1207842 |
| 51     | 79705.72 | 131984.14 | 165589.29 | 9.9014895 | 10.1205218 |
| 50     | 79688.15 | 131904.41 | 165525.75 | 9.9013938 | 10.1202593 |
| 49     | 79670.57 | 131824.74 | 165462.27 | 9.9012980 | 10.1199969 |
| 48     | 79652.99 | 131745.13 | 165398.85 | 9.9012021 | 10.1197346 |
| 47     | 79635.40 | 131665.59 | 165335.50 | 9.9011062 | 10.1194723 |
| 46     | 79617.80 | 131586.10 | 165272.21 | 9.9010102 | 10.1192100 |
| 45     | 79600.20 | 131506.68 | 165208.98 | 9.9009142 | 10.1189478 |
| 44     | 79582.59 | 131427.31 | 165145.81 | 9.9008181 | 10.1186856 |
| 43     | 79564.97 | 131348.01 | 165082.70 | 9.9007219 | 10.1184235 |
| 42     | 79547.35 | 131268.76 | 165019.66 | 9.9006257 | 10.1181614 |
| 41     | 79529.72 | 131189.58 | 164956.68 | 9.9005294 | 10.1178993 |
| 40     | 79512.08 | 131110.46 | 164893.76 | 9.9004331 | 10.1176373 |
| 39     | 79494.43 | 131031.40 | 164830.90 | 9.9003367 | 10.1173754 |
| 38     | 79476.78 | 130952.39 | 164768.11 | 9.9002403 | 10.1171134 |
| 37     | 79459.12 | 130873.45 | 164705.37 | 9.9001438 | 10.1168516 |
| 36     | 79441.46 | 130794.57 | 164642.70 | 9.9000472 | 10.1165897 |
| 35     | 79423.79 | 130715.75 | 164580.09 | 9.8999506 | 10.1163279 |
| 34     | 79406.11 | 130636.99 | 164517.54 | 9.8998539 | 10.1160662 |
| 33     | 79388.43 | 130558.28 | 164455.06 | 9.8997572 | 10.1158044 |
| 32     | 79370.74 | 130479.64 | 164392.63 | 9.8996604 | 10.1155428 |
| 31     | 79353.04 | 130401.06 | 164330.27 | 9.8995636 | 10.1152811 |
| 30     | 79335.33 | 130322.54 | 164267.96 | 9.8994667 | 10.1150195 |

## 37 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log Sin.  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 70876.14 | 76732.70 | 126047.24 | 9.7844471 | 9.8849805  |
| 31     | 60899.22 | 76778.93 | 126075.39 | 9.7846117 | 9.8852420  |
| 32     | 60922.29 | 76825.17 | 126103.56 | 9.7847762 | 9.8855035  |
| 33     | 60945.35 | 76871.44 | 126131.75 | 9.7849406 | 9.8857650  |
| 34     | 60968.41 | 76917.73 | 126159.97 | 9.7851049 | 9.8860264  |
| 35     | 60991.47 | 76964.04 | 126188.20 | 9.7852691 | 9.8862878  |
| 36     | 61014.52 | 77010.37 | 126216.46 | 9.7854332 | 9.8865492  |
| 37     | 61037.56 | 77056.72 | 126244.75 | 9.7855972 | 9.8868105  |
| 38     | 61060.60 | 77103.09 | 126273.06 | 9.7857611 | 9.8870718  |
| 39     | 61083.63 | 77149.48 | 126301.40 | 9.7859249 | 9.8873330  |
| 40     | 61106.66 | 77195.89 | 126329.75 | 9.7860886 | 9.8875942  |
| 41     | 61129.68 | 77242.33 | 126358.13 | 9.7862522 | 9.8878554  |
| 42     | 61152.70 | 77288.79 | 126386.53 | 9.7864157 | 9.8881165  |
| 43     | 61175.72 | 77335.26 | 126414.96 | 9.7865791 | 9.8883775  |
| 44     | 61198.73 | 77381.75 | 126443.41 | 9.7867424 | 9.8886386  |
| 45     | 61221.73 | 77428.27 | 126471.88 | 9.7869056 | 9.8888996  |
| 46     | 61244.73 | 77474.81 | 126500.38 | 9.7870687 | 9.8891605  |
| 47     | 61267.72 | 77521.37 | 126528.90 | 9.7872317 | 9.8894214  |
| 48     | 61290.71 | 77567.95 | 126557.45 | 9.7873946 | 9.8896823  |
| 49     | 61313.69 | 77614.55 | 126586.01 | 9.7875574 | 9.8899432  |
| 50     | 61336.66 | 77661.17 | 126614.60 | 9.7877202 | 9.8902040  |
| 51     | 61359.63 | 77707.82 | 126643.22 | 9.7878828 | 9.8904647  |
| 52     | 61382.60 | 77754.48 | 126671.86 | 9.7880453 | 9.8907254  |
| 53     | 61405.56 | 77801.17 | 126700.52 | 9.7882077 | 9.8909861  |
| 54     | 61428.52 | 77847.88 | 126729.21 | 9.7883701 | 9.8912468  |
| 55     | 61451.47 | 77894.60 | 126757.92 | 9.7885323 | 9.8915074  |
| 56     | 61474.42 | 77941.35 | 126786.65 | 9.7886944 | 9.8917679  |
| 57     | 61497.36 | 77988.12 | 126815.41 | 9.7888565 | 9.8920285  |
| 58     | 61520.29 | 78034.92 | 126844.19 | 9.7890184 | 9.8922890  |
| 59     | 61543.22 | 78081.73 | 126872.99 | 9.7891802 | 9.8925494  |
| 60     | 61566.15 | 78128.56 | 126901.82 | 9.7893420 | 9.8928098  |

## 52 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 79335.33 | 130322.54 | 164267.96 | 9.8994667 | 10.1150195 |
| 29     | 79317.62 | 130244.07 | 164205.72 | 9.8993697 | 10.1147580 |
| 28     | 79299.90 | 130165.67 | 164143.54 | 9.8992727 | 10.1144965 |
| 27     | 79282.18 | 130087.32 | 164081.42 | 9.8991756 | 10.1142350 |
| 26     | 79264.45 | 130009.04 | 164019.36 | 9.8990784 | 10.1139736 |
| 25     | 79246.71 | 129930.81 | 163957.36 | 9.8989812 | 10.1137122 |
| 24     | 79228.96 | 129852.65 | 163895.42 | 9.8988840 | 10.1134508 |
| 23     | 79211.21 | 129774.54 | 163833.55 | 9.8987867 | 10.1131895 |
| 22     | 79193.45 | 129696.49 | 163771.73 | 9.8986893 | 10.1129282 |
| 21     | 79175.69 | 129618.50 | 163709.97 | 9.8985919 | 10.1126670 |
| 20     | 79157.92 | 129540.57 | 163648.28 | 9.8984944 | 10.1124058 |
| 19     | 79140.14 | 129462.69 | 163586.64 | 9.8983968 | 10.1121446 |
| 18     | 79122.35 | 129384.88 | 163525.07 | 9.8982992 | 10.1118835 |
| 17     | 79104.56 | 129307.12 | 163463.55 | 9.8982015 | 10.1116225 |
| 16     | 79086.76 | 129229.43 | 163402.10 | 9.8981038 | 10.1113614 |
| 15     | 79068.96 | 129151.79 | 163340.70 | 9.8980060 | 10.1111004 |
| 14     | 79051.15 | 129074.21 | 163279.37 | 9.8979082 | 10.1108395 |
| 13     | 79033.33 | 128996.69 | 163218.09 | 9.8978103 | 10.1105786 |
| 12     | 79015.50 | 128919.22 | 163156.88 | 9.8977123 | 10.1103177 |
| 11     | 78997.67 | 128841.82 | 163095.72 | 9.8976143 | 10.1100568 |
| 10     | 78979.83 | 128764.47 | 163034.62 | 9.8975162 | 10.1097960 |
| 9      | 78961.98 | 128687.18 | 162973.59 | 9.8974181 | 10.1095353 |
| 8      | 78944.13 | 128609.95 | 162912.61 | 9.8973199 | 10.1092746 |
| 7      | 78926.27 | 128532.77 | 162851.69 | 9.8972216 | 10.1090139 |
| 6      | 78908.41 | 128455.66 | 162790.83 | 9.8971233 | 10.1087532 |
| 5      | 78890.54 | 128378.60 | 162730.03 | 9.8970249 | 10.1084926 |
| 4      | 78872.66 | 128301.60 | 162669.29 | 9.8969265 | 10.1082321 |
| 3      | 78854.77 | 128224.66 | 162608.61 | 9.8968280 | 10.1079715 |
| 2      | 78836.88 | 128147.76 | 162547.99 | 9.8967294 | 10.1077110 |
| 1      | 78818.98 | 128070.93 | 162487.43 | 9.8966308 | 10.1074506 |
| 0      | 78801.07 | 127994.16 | 162426.92 | 9.8965321 | 10.1071902 |

## 36 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 58778.53 | 72654.26 | 123606.80 | 9.7692187 | 9.8612610  |
| 1      | 58802.06 | 72698.71 | 123632.94 | 9.7693925 | 9.8615267  |
| 2      | 58825.58 | 72743.18 | 123659.09 | 9.7695662 | 9.8617923  |
| 3      | 58849.10 | 72787.67 | 123685.26 | 9.7697398 | 9.8620578  |
| 4      | 58872.62 | 72832.18 | 123711.48 | 9.7699134 | 9.8623233  |
| 5      | 58896.13 | 72876.71 | 123737.68 | 9.7700868 | 9.8625887  |
| 6      | 58919.64 | 72921.26 | 123763.93 | 9.7702601 | 9.8628541  |
| 7      | 58943.14 | 72965.82 | 123790.19 | 9.7704332 | 9.8631195  |
| 8      | 58966.63 | 73010.40 | 123816.47 | 9.7706063 | 9.8633848  |
| 9      | 58990.12 | 73055.01 | 123842.78 | 9.7707793 | 9.8636500  |
| 10     | 59013.61 | 73099.63 | 123869.11 | 9.7709522 | 9.8639152  |
| 11     | 59037.09 | 73144.27 | 123895.46 | 9.7711249 | 9.8641803  |
| 12     | 59060.57 | 73188.94 | 123921.83 | 9.7712976 | 9.8644454  |
| 13     | 59084.04 | 73233.62 | 123948.22 | 9.7714702 | 9.8647105  |
| 14     | 59107.50 | 73278.31 | 123974.64 | 9.7716426 | 9.8649755  |
| 15     | 59130.96 | 73323.03 | 124001.08 | 9.7718150 | 9.8652404  |
| 16     | 59154.42 | 73367.77 | 124027.54 | 9.7719872 | 9.8655053  |
| 17     | 59177.87 | 73412.53 | 124054.02 | 9.7721593 | 9.8657702  |
| 18     | 59201.32 | 73457.30 | 124080.52 | 9.7723314 | 9.8660350  |
| 19     | 59224.76 | 73502.10 | 124107.04 | 9.7725033 | 9.8662997  |
| 20     | 59248.19 | 73546.91 | 124133.59 | 9.7726751 | 9.8665644  |
| 21     | 59271.62 | 73591.74 | 124160.16 | 9.7728468 | 9.8668291  |
| 22     | 59295.05 | 73636.60 | 124186.75 | 9.7730185 | 9.8670937  |
| 23     | 59318.47 | 73681.47 | 124213.36 | 9.7731900 | 9.8673583  |
| 24     | 59341.89 | 73726.36 | 124239.99 | 9.7733614 | 9.8676228  |
| 25     | 59365.30 | 73771.27 | 124266.65 | 9.7735327 | 9.8678873  |
| 26     | 59388.71 | 73816.20 | 124293.33 | 9.7737039 | 9.8681517  |
| 27     | 59412.11 | 73861.15 | 124320.03 | 9.7738749 | 9.8684160  |
| 28     | 59435.50 | 73906.11 | 124346.75 | 9.7740459 | 9.8686804  |
| 29     | 59458.89 | 73951.10 | 124373.49 | 9.7742168 | 9.8689446  |
| 30     | 59482.28 | 73996.11 | 124400.26 | 9.7743876 | 9.8692089  |

## 53 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 80901.70 | 137638.19 | 170130.16 | 9.9079576 | 10.1387390 |
| 59     | 80884.60 | 137554.07 | 170062.08 | 9.9078658 | 10.1384733 |
| 58     | 80867.49 | 137469.94 | 169994.07 | 9.9077740 | 10.1382077 |
| 57     | 80850.37 | 137385.91 | 169926.12 | 9.9076820 | 10.1379422 |
| 56     | 80833.25 | 137301.95 | 169858.25 | 9.9075901 | 10.1376767 |
| 55     | 80816.12 | 137218.05 | 169790.44 | 9.9074980 | 10.1374113 |
| 54     | 80798.99 | 137134.23 | 169722.71 | 9.9074059 | 10.1371459 |
| 53     | 80781.85 | 137050.47 | 169655.04 | 9.9073138 | 10.1368805 |
| 52     | 80764.70 | 136966.78 | 169587.43 | 9.9072216 | 10.1366152 |
| 51     | 80747.54 | 136883.15 | 169519.90 | 9.9071293 | 10.1363500 |
| 50     | 80730.38 | 136799.59 | 169452.44 | 9.9070370 | 10.1360848 |
| 49     | 80713.21 | 136716.10 | 169385.04 | 9.9069446 | 10.1358197 |
| 48     | 80696.03 | 136632.67 | 169317.71 | 9.9068522 | 10.1355546 |
| 47     | 80678.85 | 136549.31 | 169250.45 | 9.9067597 | 10.1352895 |
| 46     | 80661.66 | 136466.02 | 169183.26 | 9.9066671 | 10.1350245 |
| 45     | 80644.46 | 136382.79 | 169116.13 | 9.9065745 | 10.1347596 |
| 44     | 80627.26 | 136299.63 | 169049.07 | 9.9064819 | 10.1344947 |
| 43     | 80610.05 | 136216.53 | 168982.08 | 9.9063892 | 10.1342298 |
| 42     | 80592.83 | 136133.50 | 168915.16 | 9.9062964 | 10.1339650 |
| 41     | 80575.60 | 136050.54 | 168848.30 | 9.9062036 | 10.1337003 |
| 40     | 80558.37 | 135967.64 | 168781.51 | 9.9061107 | 10.1334356 |
| 39     | 80541.13 | 135884.81 | 168714.79 | 9.9060177 | 10.1331709 |
| 38     | 80523.89 | 135802.04 | 168648.14 | 9.9059247 | 10.1329063 |
| 37     | 80506.64 | 135719.34 | 168581.55 | 9.9058317 | 10.1326417 |
| 36     | 80489.38 | 135636.70 | 168515.03 | 9.9057386 | 10.1323772 |
| 35     | 80472.11 | 135554.13 | 168448.57 | 9.9056454 | 10.1321127 |
| 34     | 80454.84 | 135471.62 | 168382.18 | 9.9055522 | 10.1318483 |
| 33     | 80437.56 | 135389.18 | 168315.86 | 9.9054589 | 10.1315840 |
| 32     | 80420.28 | 135306.80 | 168249.61 | 9.9053656 | 10.1313196 |
| 31     | 80402.99 | 135224.49 | 168183.42 | 9.9052722 | 10.1310554 |
| 30     | 80385.69 | 135142.24 | 168117.30 | 9.9051787 | 10.1307911 |



## 36 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log Sin.  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 59482.28 | 73996.11 | 124400.26 | 9.7743876 | 9.8692089  |
| 31     | 59505.66 | 74041.14 | 124427.05 | 9.7745583 | 9.8694731  |
| 32     | 59529.03 | 74086.18 | 124453.86 | 9.7747288 | 9.8697372  |
| 33     | 59552.40 | 74131.24 | 124480.69 | 9.7748993 | 9.8700013  |
| 34     | 59575.77 | 74176.33 | 124507.54 | 9.7750697 | 9.8702653  |
| 35     | 59599.13 | 74221.43 | 124534.42 | 9.7752399 | 9.8705293  |
| 36     | 59622.49 | 74266.55 | 124561.31 | 9.7754101 | 9.8707933  |
| 37     | 59645.84 | 74311.70 | 124588.23 | 9.7755801 | 9.8710572  |
| 38     | 59669.18 | 74356.86 | 124615.18 | 9.7757501 | 9.8713210  |
| 39     | 59692.52 | 74402.04 | 124642.14 | 9.7759199 | 9.8715848  |
| 40     | 59715.86 | 74447.24 | 124669.13 | 9.7760897 | 9.8718486  |
| 41     | 59739.19 | 74492.46 | 124696.14 | 9.7762593 | 9.8721123  |
| 42     | 59762.51 | 74537.70 | 124723.17 | 9.7764289 | 9.8723760  |
| 43     | 59785.83 | 74582.96 | 124750.22 | 9.7765983 | 9.8726396  |
| 44     | 59809.15 | 74628.24 | 124777.30 | 9.7767676 | 9.8729032  |
| 45     | 59832.46 | 74673.54 | 124804.40 | 9.7769369 | 9.8731668  |
| 46     | 59855.76 | 74718.86 | 124831.52 | 9.7771060 | 9.8734302  |
| 47     | 59879.06 | 74764.20 | 124858.66 | 9.7772750 | 9.8736937  |
| 48     | 59902.36 | 74809.56 | 124885.83 | 9.7774439 | 9.8739571  |
| 49     | 59925.65 | 74854.94 | 124913.02 | 9.7776128 | 9.8742204  |
| 50     | 59948.93 | 74900.33 | 124940.23 | 9.7777815 | 9.8744838  |
| 51     | 59972.21 | 74945.75 | 124967.46 | 9.7779501 | 9.8747470  |
| 52     | 59995.49 | 74991.19 | 124994.71 | 9.7781186 | 9.8750102  |
| 53     | 60018.76 | 75036.65 | 125021.99 | 9.7782870 | 9.8752734  |
| 54     | 60042.02 | 75082.12 | 125049.29 | 9.7784553 | 9.8755365  |
| 55     | 60065.28 | 75127.62 | 125076.61 | 9.7786235 | 9.8757996  |
| 56     | 60088.53 | 75173.14 | 125103.96 | 9.7787916 | 9.8760627  |
| 57     | 60111.78 | 75218.67 | 125131.33 | 9.7789596 | 9.8763257  |
| 58     | 60135.03 | 75264.23 | 125158.72 | 9.7791275 | 9.8765886  |
| 59     | 60158.27 | 75309.81 | 125186.13 | 9.7792953 | 9.8768515  |
| 60     | 60181.50 | 75355.40 | 125213.57 | 9.7794630 | 9.8771144  |

# 53 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 80385.69 | 135142.24 | 168117.30 | 9.9051787 | 10.1307911 |
| 29     | 80368.38 | 135060.06 | 168051.24 | 9.9050852 | 10.1305269 |
| 28     | 80351.07 | 134977.94 | 167985.25 | 9.9049916 | 10.1302628 |
| 27     | 80333.75 | 134895.89 | 167919.33 | 9.9048980 | 10.1299987 |
| 26     | 80316.42 | 134813.90 | 167853.47 | 9.9048043 | 10.1297347 |
| 25     | 80299.09 | 134731.97 | 167787.68 | 9.9047106 | 10.1294707 |
| 24     | 80281.75 | 134650.11 | 167721.95 | 9.9046168 | 10.1292067 |
| 23     | 80264.40 | 134568.32 | 167656.29 | 9.9045230 | 10.1289428 |
| 22     | 80247.05 | 134486.58 | 167590.70 | 9.9044291 | 10.1286790 |
| 21     | 80229.69 | 134404.92 | 167525.17 | 9.9043351 | 10.1284152 |
| 20     | 80212.32 | 134323.31 | 167459.70 | 9.9042411 | 10.1281514 |
| 19     | 80194.94 | 134241.77 | 167394.30 | 9.9041470 | 10.1278877 |
| 18     | 80177.56 | 134160.29 | 167328.97 | 9.9040529 | 10.1276240 |
| 17     | 80160.17 | 134078.88 | 167263.70 | 9.9039587 | 10.1273604 |
| 16     | 80142.78 | 133997.53 | 167198.50 | 9.9038644 | 10.1270968 |
| 15     | 80125.38 | 133916.24 | 167133.36 | 9.9037701 | 10.1268332 |
| 14     | 80107.97 | 133835.02 | 167068.28 | 9.9036757 | 10.1265698 |
| 13     | 80090.56 | 133753.86 | 167003.28 | 9.9035813 | 10.1263063 |
| 12     | 80073.14 | 133672.76 | 166938.33 | 9.9034868 | 10.1260429 |
| 11     | 80055.71 | 133591.72 | 166873.45 | 9.9033923 | 10.1257796 |
| 10     | 80038.27 | 133510.75 | 166808.64 | 9.9032977 | 10.1255162 |
| 9      | 80020.83 | 133429.84 | 166743.89 | 9.9032031 | 10.1252530 |
| 8      | 80003.38 | 133349.00 | 166679.20 | 9.9031084 | 10.1249898 |
| 7      | 79985.93 | 133268.22 | 166614.58 | 9.9030136 | 10.1247266 |
| 6      | 79968.47 | 133187.49 | 166550.02 | 9.9029188 | 10.1244635 |
| 5      | 79951.00 | 133106.84 | 166485.52 | 9.9028239 | 10.1242004 |
| 4      | 79933.52 | 133026.24 | 166421.09 | 9.9027289 | 10.1239373 |
| 3      | 79916.04 | 132945.71 | 166356.73 | 9.9026339 | 10.1236743 |
| 2      | 79898.55 | 132865.24 | 166292.43 | 9.9025389 | 10.1234114 |
| 1      | 79881.05 | 132784.83 | 166228.19 | 9.9024438 | 10.1231485 |
| 0      | 79863.55 | 132704.48 | 166164.01 | 9.9023486 | 10.1228856 |

# 37 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 60181.50 | 75355.40 | 125213.57 | 9.7794630 | 9.8771144  |
| 1      | 60204.73 | 75401.02 | 125241.02 | 9.7796306 | 9.8773772  |
| 2      | 60227.95 | 75446.66 | 125268.50 | 9.7797981 | 9.8776400  |
| 3      | 60251.17 | 75492.32 | 125296.01 | 9.7799655 | 9.8779027  |
| 4      | 60274.39 | 75537.99 | 125323.53 | 9.7801328 | 9.8781654  |
| 5      | 60297.60 | 75583.69 | 125351.08 | 9.7803000 | 9.8784281  |
| 6      | 60320.80 | 75629.41 | 125378.65 | 9.7804671 | 9.8786907  |
| 7      | 60344.00 | 75675.14 | 125406.25 | 9.7806341 | 9.8789533  |
| 8      | 60367.19 | 75720.90 | 125433.87 | 9.7808010 | 9.8792158  |
| 9      | 60390.38 | 75766.68 | 125461.51 | 9.7809677 | 9.8794782  |
| 10     | 60413.56 | 75812.48 | 125489.17 | 9.7811344 | 9.8797407  |
| 11     | 60436.74 | 75858.29 | 125516.85 | 9.7813010 | 9.8800031  |
| 12     | 60459.91 | 75904.13 | 125544.56 | 9.7814675 | 9.8802654  |
| 13     | 60483.08 | 75949.99 | 125572.29 | 9.7816339 | 9.8805277  |
| 14     | 60506.24 | 75995.87 | 125600.05 | 9.7818002 | 9.8807900  |
| 15     | 60529.40 | 76041.77 | 125627.82 | 9.7819664 | 9.8810522  |
| 16     | 60552.55 | 76087.69 | 125655.62 | 9.7821324 | 9.8813144  |
| 17     | 60575.70 | 76133.63 | 125683.45 | 9.7822984 | 9.8815765  |
| 18     | 60598.84 | 76179.59 | 125711.29 | 9.7824643 | 9.8818386  |
| 19     | 60621.98 | 76225.57 | 125739.16 | 9.7826301 | 9.8821007  |
| 20     | 60645.11 | 76271.57 | 125767.05 | 9.7827958 | 9.8823627  |
| 21     | 60668.23 | 76317.59 | 125794.97 | 9.7829614 | 9.8826246  |
| 22     | 60691.35 | 76363.63 | 125822.91 | 9.7831268 | 9.8828866  |
| 23     | 60714.47 | 76409.69 | 125850.87 | 9.7832922 | 9.8831484  |
| 24     | 60737.58 | 76455.77 | 125878.85 | 9.7834575 | 9.8834103  |
| 25     | 60760.69 | 76501.88 | 125906.86 | 9.7836227 | 9.8836721  |
| 26     | 60783.79 | 76548.00 | 125934.89 | 9.7837878 | 9.8839338  |
| 27     | 60806.89 | 76594.14 | 125962.94 | 9.7839528 | 9.8841956  |
| 28     | 60829.98 | 76640.31 | 125991.02 | 9.7841177 | 9.8844572  |
| 29     | 60853.06 | 76686.49 | 126019.12 | 9.7842824 | 9.8847189  |
| 30     | 60876.14 | 76732.70 | 126047.24 | 9.7844471 | 9.8849805  |

# 52 Grad.

| Minute. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|---------|----------|-----------|-----------|-----------|------------|
| 60      | 79863.55 | 132704.48 | 166164.01 | 9.9023486 | 10.1228856 |
| 59      | 79846.04 | 132624.20 | 166099.90 | 9.9022534 | 10.1226228 |
| 58      | 79828.52 | 132543.97 | 166035.85 | 9.9021581 | 10.1223600 |
| 57      | 79811.00 | 132463.81 | 165971.87 | 9.9020628 | 10.1220973 |
| 56      | 79793.47 | 132383.71 | 165907.95 | 9.9019674 | 10.1218346 |
| 55      | 79775.93 | 132303.68 | 165844.09 | 9.9018719 | 10.1215719 |
| 54      | 79758.39 | 132223.70 | 165780.30 | 9.9017764 | 10.1213093 |
| 53      | 79740.84 | 132143.79 | 165716.57 | 9.9016808 | 10.1210467 |
| 52      | 79723.28 | 132063.93 | 165652.90 | 9.9015852 | 10.1207842 |
| 51      | 79705.72 | 131984.14 | 165589.29 | 9.9014895 | 10.1205218 |
| 50      | 79688.15 | 131904.41 | 165525.75 | 9.9013938 | 10.1202593 |
| 49      | 79670.57 | 131824.74 | 165462.27 | 9.9012980 | 10.1199969 |
| 48      | 79652.99 | 131745.13 | 165398.85 | 9.9012021 | 10.1197346 |
| 47      | 79635.40 | 131665.59 | 165335.50 | 9.9011062 | 10.1194723 |
| 46      | 79617.80 | 131586.10 | 165272.21 | 9.9010102 | 10.1192100 |
| 45      | 79600.20 | 131506.68 | 165208.98 | 9.9009142 | 10.1189478 |
| 44      | 79582.59 | 131427.31 | 165145.81 | 9.9008181 | 10.1186856 |
| 43      | 79564.97 | 131348.01 | 165082.70 | 9.9007219 | 10.1184235 |
| 42      | 79547.35 | 131268.76 | 165019.66 | 9.9006257 | 10.1181614 |
| 41      | 79529.72 | 131189.58 | 164956.68 | 9.9005294 | 10.1178993 |
| 40      | 79512.08 | 131110.46 | 164893.76 | 9.9004331 | 10.1176373 |
| 39      | 79494.43 | 131031.40 | 164830.90 | 9.9003367 | 10.1173754 |
| 38      | 79476.78 | 130952.39 | 164768.11 | 9.9002403 | 10.1171134 |
| 37      | 79459.12 | 130873.45 | 164705.37 | 9.9001438 | 10.1168516 |
| 36      | 79441.46 | 130794.57 | 164642.70 | 9.9000472 | 10.1165897 |
| 35      | 79423.79 | 130715.75 | 164580.09 | 9.8999506 | 10.1163279 |
| 34      | 79406.11 | 130636.99 | 164517.54 | 9.8998539 | 10.1160662 |
| 33      | 79388.43 | 130558.28 | 164455.06 | 9.8997572 | 10.1158044 |
| 32      | 79370.74 | 130479.64 | 164392.63 | 9.8996604 | 10.1155428 |
| 31      | 79353.04 | 130401.06 | 164330.27 | 9.8995636 | 10.1152811 |
| 30      | 79335.33 | 130322.54 | 164267.96 | 9.8994667 | 10.1150195 |

## 37 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log Sin.  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 70876.14 | 76732.70 | 126047.24 | 9.7844471 | 9.8849805  |
| 31     | 60899.22 | 76778.93 | 126075.39 | 9.7846117 | 9.8852420  |
| 32     | 60922.29 | 76825.17 | 126103.56 | 9.7847762 | 9.8855035  |
| 33     | 60945.35 | 76871.44 | 126131.75 | 9.7849406 | 9.8857650  |
| 34     | 60968.41 | 76917.73 | 126159.97 | 9.7851049 | 9.8860264  |
| 35     | 60991.47 | 76964.04 | 126188.20 | 9.7852691 | 9.8862878  |
| 36     | 61014.52 | 77010.37 | 126216.46 | 9.7854332 | 9.8865492  |
| 37     | 61037.56 | 77056.72 | 126244.75 | 9.7855972 | 9.8868105  |
| 38     | 61060.60 | 77103.09 | 126273.06 | 9.7857611 | 9.8870718  |
| 39     | 61083.63 | 77149.48 | 126301.40 | 9.7859249 | 9.8873330  |
| 40     | 61106.66 | 77195.89 | 126329.75 | 9.7860886 | 9.8875942  |
| 41     | 61129.68 | 77242.33 | 126358.13 | 9.7862522 | 9.8878554  |
| 42     | 61152.70 | 77288.79 | 126386.53 | 9.7864157 | 9.8881165  |
| 43     | 61175.72 | 77335.26 | 126414.96 | 9.7865791 | 9.8883775  |
| 44     | 61198.73 | 77381.75 | 126443.41 | 9.7867424 | 9.8886386  |
| 45     | 61221.73 | 77428.27 | 126471.88 | 9.7869056 | 9.8888996  |
| 46     | 61244.73 | 77474.81 | 126500.38 | 9.7870687 | 9.8891605  |
| 47     | 61267.72 | 77521.37 | 126528.90 | 9.7872317 | 9.8894214  |
| 48     | 61290.71 | 77567.95 | 126557.45 | 9.7873946 | 9.8896823  |
| 49     | 61313.69 | 77614.55 | 126586.01 | 9.7875574 | 9.8899432  |
| 50     | 61336.66 | 77661.17 | 126614.60 | 9.7877202 | 9.8902040  |
| 51     | 61359.63 | 77707.82 | 126643.22 | 9.7878828 | 9.8904647  |
| 52     | 61382.60 | 77754.48 | 126671.86 | 9.7880453 | 9.8907254  |
| 53     | 61405.56 | 77801.17 | 126700.52 | 9.7882077 | 9.8909861  |
| 54     | 61428.52 | 77847.88 | 126729.21 | 9.7883701 | 9.8912468  |
| 55     | 61451.47 | 77894.60 | 126757.92 | 9.7885323 | 9.8915074  |
| 56     | 61474.42 | 77941.35 | 126786.65 | 9.7886944 | 9.8917679  |
| 57     | 61497.36 | 77988.12 | 126815.41 | 9.7888565 | 9.8920285  |
| 58     | 61520.29 | 78034.92 | 126844.19 | 9.7890184 | 9.8922890  |
| 59     | 61543.22 | 78081.73 | 126872.99 | 9.7891802 | 9.8925494  |
| 60     | 61566.15 | 78128.56 | 126901.82 | 9.7893420 | 9.8928098  |

# 52 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 79335.33 | 130322.54 | 164267.96 | 9.8994667 | 10.1150195 |
| 29     | 79317.62 | 130244.07 | 164205.72 | 9.8993697 | 10.1147580 |
| 28     | 79299.90 | 130165.67 | 164143.54 | 9.8992727 | 10.1144965 |
| 27     | 79282.18 | 130087.32 | 164081.42 | 9.8991756 | 10.1142350 |
| 26     | 79264.45 | 130009.04 | 164019.36 | 9.8990784 | 10.1139736 |
| 25     | 79246.71 | 129930.81 | 163957.36 | 9.8989812 | 10.1137122 |
| 24     | 79228.96 | 129852.65 | 163895.42 | 9.8988840 | 10.1134508 |
| 23     | 79211.21 | 129774.54 | 163833.55 | 9.8987867 | 10.1131895 |
| 22     | 79193.45 | 129696.49 | 163771.73 | 9.8986893 | 10.1129282 |
| 21     | 79175.69 | 129618.50 | 163709.97 | 9.8985919 | 10.1126670 |
| 20     | 79157.92 | 129540.57 | 163648.28 | 9.8984944 | 10.1124058 |
| 19     | 79140.14 | 129462.69 | 163586.64 | 9.8983968 | 10.1121446 |
| 18     | 79122.35 | 129384.88 | 163525.07 | 9.8982992 | 10.1118835 |
| 17     | 79104.56 | 129307.12 | 163463.55 | 9.8982015 | 10.1116225 |
| 16     | 79086.76 | 129229.43 | 163402.10 | 9.8981038 | 10.1113614 |
| 15     | 79068.96 | 129151.79 | 163340.70 | 9.8980060 | 10.1111004 |
| 14     | 79051.15 | 129074.21 | 163279.37 | 9.8979082 | 10.1108395 |
| 13     | 79033.33 | 128996.69 | 163218.09 | 9.8978103 | 10.1105786 |
| 12     | 79015.50 | 128919.22 | 163156.88 | 9.8977123 | 10.1103177 |
| 11     | 78997.67 | 128841.82 | 163095.72 | 9.8976143 | 10.1100568 |
| 10     | 78979.83 | 128764.47 | 163034.62 | 9.8975162 | 10.1097960 |
| 9      | 78961.98 | 128687.18 | 162973.59 | 9.8974181 | 10.1095353 |
| 8      | 78944.13 | 128609.95 | 162912.61 | 9.8973199 | 10.1092746 |
| 7      | 78926.27 | 128532.77 | 162851.69 | 9.8972216 | 10.1090139 |
| 6      | 78908.41 | 128455.66 | 162790.83 | 9.8971233 | 10.1087532 |
| 5      | 78890.54 | 128378.60 | 162730.03 | 9.8970249 | 10.1084926 |
| 4      | 78872.66 | 128301.60 | 162669.29 | 9.8969265 | 10.1082321 |
| 3      | 78854.77 | 128224.66 | 162608.61 | 9.8968280 | 10.1079715 |
| 2      | 78836.88 | 128147.76 | 162547.99 | 9.8967294 | 10.1077110 |
| 1      | 78818.98 | 128070.93 | 162487.43 | 9.8966308 | 10.1074506 |
| 0      | 78801.07 | 127994.16 | 162426.92 | 9.8965321 | 10.1071902 |

## 38 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 61566.15 | 78128.56 | 126901.82 | 9.7893420 | 9.8928098  |
| 1      | 61589.07 | 78175.42 | 126930.67 | 9.7895036 | 9.8930702  |
| 2      | 61611.98 | 78222.29 | 126959.55 | 9.7896652 | 9.8933306  |
| 3      | 61634.89 | 78269.19 | 126988.45 | 9.7898266 | 9.8935909  |
| 4      | 61657.79 | 78316.11 | 127017.37 | 9.7899880 | 9.8938511  |
| 5      | 61680.69 | 78363.05 | 127046.32 | 9.7901493 | 9.8941114  |
| 6      | 61703.59 | 78410.02 | 127075.29 | 9.7903104 | 9.8943715  |
| 7      | 61726.48 | 78457.00 | 127104.29 | 9.7904715 | 9.8946317  |
| 8      | 61749.36 | 78504.00 | 127133.31 | 9.7906325 | 9.8948918  |
| 9      | 61772.24 | 78551.03 | 127162.35 | 9.7907933 | 9.8951519  |
| 10     | 61795.11 | 78598.08 | 127191.42 | 9.7909541 | 9.8954119  |
| 11     | 61817.98 | 78645.15 | 127220.51 | 9.7911148 | 9.8956719  |
| 12     | 61840.84 | 78692.24 | 127249.63 | 9.7912754 | 9.8959319  |
| 13     | 61863.70 | 78739.35 | 127278.77 | 9.7914359 | 9.8961918  |
| 14     | 61886.55 | 78786.49 | 127307.94 | 9.7915963 | 9.8964517  |
| 15     | 61909.40 | 78833.64 | 127337.12 | 9.7917566 | 9.8967116  |
| 16     | 61932.24 | 78880.82 | 127366.34 | 9.7919168 | 9.8969714  |
| 17     | 61955.07 | 78928.02 | 127395.57 | 9.7920769 | 9.8972312  |
| 18     | 61977.90 | 78975.24 | 127424.84 | 9.7922369 | 9.8974910  |
| 19     | 62000.73 | 79022.48 | 127454.12 | 9.7923968 | 9.8977507  |
| 20     | 62023.55 | 79069.75 | 127483.43 | 9.7925568 | 9.8980104  |
| 21     | 62046.36 | 79117.03 | 127512.76 | 9.7927163 | 9.8982700  |
| 22     | 62069.17 | 79164.34 | 127542.12 | 9.7928760 | 9.8985296  |
| 23     | 62091.98 | 79211.67 | 127571.50 | 9.7930355 | 9.8987892  |
| 24     | 62114.78 | 79259.02 | 127600.91 | 9.7931949 | 9.8990487  |
| 25     | 62137.57 | 79306.40 | 127630.34 | 9.7933543 | 9.8993082  |
| 26     | 62160.36 | 79353.79 | 127659.80 | 9.7935135 | 9.8995677  |
| 27     | 62183.14 | 79401.21 | 127689.28 | 9.7936727 | 9.8998271  |
| 28     | 62205.92 | 79448.65 | 127718.78 | 9.7938317 | 9.9000865  |
| 29     | 62228.69 | 79496.11 | 127748.31 | 9.7939907 | 9.9003459  |
| 30     | 62251.46 | 79543.59 | 127777.87 | 9.7941496 | 9.9006052  |

# 51 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 78801.07 | 127994.16 | 162426.92 | 9.8965321 | 10.1071902 |
| 59     | 78783.16 | 127917.45 | 162366.48 | 9.8964334 | 10.1069298 |
| 58     | 78765.24 | 127840.79 | 162306.09 | 9.8963346 | 10.1066694 |
| 57     | 78747.32 | 127764.19 | 162245.76 | 9.8962358 | 10.1064091 |
| 56     | 78729.39 | 127687.64 | 162185.49 | 9.8961369 | 10.1061489 |
| 55     | 78711.45 | 127611.16 | 162125.28 | 9.8960379 | 10.1058886 |
| 54     | 78693.50 | 127534.73 | 162065.13 | 9.8959389 | 10.1056285 |
| 53     | 78675.55 | 127458.36 | 162005.04 | 9.8958398 | 10.1053683 |
| 52     | 78657.59 | 127382.04 | 161945.00 | 9.8957406 | 10.1051082 |
| 51     | 78639.62 | 127305.78 | 161885.02 | 9.8956414 | 10.1048481 |
| 50     | 78621.65 | 127229.57 | 161825.10 | 9.8955422 | 10.1045881 |
| 49     | 78603.67 | 127153.42 | 161765.24 | 9.8954429 | 10.1043281 |
| 48     | 78585.69 | 127077.33 | 161705.44 | 9.8953435 | 10.1040681 |
| 47     | 78567.70 | 127001.30 | 161645.69 | 9.8952440 | 10.1038082 |
| 46     | 78549.70 | 126925.32 | 161586.00 | 9.8951445 | 10.1035483 |
| 45     | 78531.69 | 126849.39 | 161526.37 | 9.8950450 | 10.1032884 |
| 44     | 78513.68 | 126773.53 | 161466.80 | 9.8949453 | 10.1030286 |
| 43     | 78495.66 | 126697.72 | 161407.28 | 9.8948457 | 10.1027688 |
| 42     | 78477.64 | 126621.96 | 161347.83 | 9.8947459 | 10.1025090 |
| 41     | 78459.61 | 126546.26 | 161288.43 | 9.8946461 | 10.1022493 |
| 40     | 78441.57 | 126470.62 | 161229.08 | 9.8945463 | 10.1019896 |
| 39     | 78423.52 | 126395.03 | 161169.80 | 9.8944463 | 10.1017300 |
| 38     | 78405.47 | 126319.50 | 161110.57 | 9.8943464 | 10.1014704 |
| 37     | 78387.41 | 126244.02 | 161051.40 | 9.8942463 | 10.1012108 |
| 36     | 78369.35 | 126168.60 | 160992.28 | 9.8941462 | 10.1009513 |
| 35     | 78351.28 | 126093.23 | 160933.23 | 9.8940461 | 10.1006918 |
| 34     | 78333.20 | 126017.92 | 160874.23 | 9.8939458 | 10.1004323 |
| 33     | 78315.11 | 125942.67 | 160815.28 | 9.8938456 | 10.1001729 |
| 32     | 78297.02 | 125867.47 | 160756.40 | 9.8937452 | 10.0999135 |
| 31     | 78278.92 | 125792.32 | 160697.57 | 9.8936448 | 10.0996541 |
| 30     | 78260.82 | 125717.23 | 160638.79 | 9.8935444 | 10.0993948 |



## 38 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 62251.26 | 79543.59 | 127777.87 | 9.7941496 | 9.9006052  |
| 31     | 62274.22 | 79591.10 | 127807.45 | 9.7943083 | 9.9008645  |
| 32     | 62296.98 | 79638.62 | 127837.05 | 9.7944670 | 9.9011237  |
| 33     | 62319.73 | 79686.17 | 127866.67 | 9.7946256 | 9.9013830  |
| 34     | 62342.48 | 79733.74 | 127896.32 | 9.7947841 | 9.9016422  |
| 35     | 62365.22 | 79781.34 | 127926.00 | 9.7949425 | 9.9019013  |
| 36     | 62387.96 | 79828.95 | 127955.70 | 9.7951008 | 9.9021604  |
| 37     | 62410.69 | 79876.59 | 127985.43 | 9.7952590 | 9.9024195  |
| 38     | 62433.42 | 79924.25 | 128015.18 | 9.7954171 | 9.9026786  |
| 39     | 62456.13 | 79971.93 | 128044.95 | 9.7955751 | 9.9029376  |
| 40     | 62478.85 | 80019.63 | 128074.75 | 9.7957330 | 9.9031966  |
| 41     | 62501.56 | 80067.36 | 128104.57 | 9.7958909 | 9.9034555  |
| 42     | 62524.26 | 80115.11 | 128134.42 | 9.7960486 | 9.9037144  |
| 43     | 62546.96 | 80162.88 | 128164.30 | 9.7962062 | 9.9039733  |
| 44     | 62569.66 | 80210.67 | 128194.20 | 9.7963638 | 9.9042321  |
| 45     | 62592.35 | 80258.48 | 128224.12 | 9.7965212 | 9.9044910  |
| 46     | 62615.03 | 80306.32 | 128254.07 | 9.7966786 | 9.9047497  |
| 47     | 62637.71 | 80354.18 | 128284.04 | 9.7968359 | 9.9050085  |
| 48     | 62660.38 | 80402.06 | 128314.04 | 9.7969930 | 9.9052672  |
| 49     | 62683.05 | 80449.97 | 128344.06 | 9.7971501 | 9.9055259  |
| 50     | 62705.71 | 80497.90 | 128374.11 | 9.7973071 | 9.9057845  |
| 51     | 62728.37 | 80545.85 | 128404.18 | 9.7974640 | 9.9060431  |
| 52     | 62751.02 | 80593.82 | 128434.28 | 9.7976208 | 9.9063017  |
| 53     | 62773.66 | 80641.81 | 128464.40 | 9.7977775 | 9.9065603  |
| 54     | 62796.30 | 80689.83 | 128494.55 | 9.7979341 | 9.9068188  |
| 55     | 62818.94 | 80737.87 | 128524.72 | 9.7980906 | 9.9070773  |
| 56     | 62841.57 | 80785.93 | 128554.92 | 9.7982470 | 9.9073357  |
| 57     | 62864.20 | 80834.01 | 128585.14 | 9.7984034 | 9.9075941  |
| 58     | 62886.82 | 80882.12 | 128615.39 | 9.7985596 | 9.9078525  |
| 59     | 62909.43 | 80930.25 | 128645.66 | 9.7987158 | 9.9081109  |
| 60     | 62932.04 | 80978.40 | 128675.96 | 9.7988718 | 9.9083692  |

# 51 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 78260.82 | 125717.23 | 160638.79 | 9.8935444 | 10.0993948 |
| 29     | 78242.71 | 125642.19 | 160580.08 | 9.8934439 | 10.0991355 |
| 28     | 78224.59 | 125567.21 | 160521.42 | 9.8933433 | 10.0988763 |
| 27     | 78206.46 | 125492.29 | 160462.81 | 9.8932426 | 10.0986170 |
| 26     | 78188.33 | 125417.42 | 160404.26 | 9.8931419 | 10.0983578 |
| 25     | 78170.19 | 125342.60 | 160345.77 | 9.8930412 | 10.0980987 |
| 24     | 78152.05 | 125267.84 | 160287.34 | 9.8929404 | 10.0978396 |
| 23     | 78133.90 | 125193.13 | 160228.96 | 9.8928395 | 10.0975805 |
| 22     | 78115.74 | 125118.48 | 160170.64 | 9.8927385 | 10.0973214 |
| 21     | 78097.57 | 125043.88 | 160112.37 | 9.8926375 | 10.0970624 |
| 20     | 78079.40 | 124969.33 | 160054.16 | 9.8925365 | 10.0968034 |
| 19     | 78061.22 | 124894.84 | 159996.00 | 9.8924354 | 10.0965445 |
| 18     | 78043.04 | 124820.40 | 159937.90 | 9.8923342 | 10.0962856 |
| 17     | 78024.85 | 124746.02 | 159879.86 | 9.8922329 | 10.0960267 |
| 16     | 78006.65 | 124671.69 | 159821.87 | 9.8921316 | 10.0957679 |
| 15     | 77988.45 | 124597.42 | 159763.94 | 9.8920303 | 10.0955090 |
| 14     | 77970.24 | 124523.20 | 159706.06 | 9.8919289 | 10.0952503 |
| 13     | 77952.02 | 124449.03 | 159648.24 | 9.8918274 | 10.0949915 |
| 12     | 77933.80 | 124374.92 | 159590.47 | 9.8917258 | 10.0947328 |
| 11     | 77915.57 | 124300.86 | 159532.76 | 9.8916242 | 10.0944741 |
| 10     | 77897.33 | 124226.85 | 159475.11 | 9.8915226 | 10.0942155 |
| 9      | 77879.08 | 124152.90 | 159417.51 | 9.8914208 | 10.0939569 |
| 8      | 77860.83 | 124079.00 | 159359.96 | 9.8913191 | 10.0936983 |
| 7      | 77842.57 | 124005.15 | 159302.47 | 9.8912172 | 10.0934397 |
| 6      | 77824.31 | 123931.36 | 159245.04 | 9.8911153 | 10.0931812 |
| 5      | 77806.04 | 123857.62 | 159187.66 | 9.8910133 | 10.0929227 |
| 4      | 77787.77 | 123783.93 | 159130.33 | 9.8909113 | 10.0926643 |
| 3      | 77769.49 | 123710.30 | 159073.06 | 9.8908092 | 10.0924059 |
| 2      | 77751.20 | 123636.72 | 159015.84 | 9.8907071 | 10.0921475 |
| 1      | 77732.90 | 123563.19 | 158958.68 | 9.8906049 | 10.0918891 |
| 0      | 77714.60 | 123489.72 | 158901.57 | 9.8905026 | 10.0916308 |

# 39 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 62932.04 | 80978.40 | 128675.96 | 9.7988718 | 9.9083692  |
| 1      | 62954.64 | 81026.58 | 128706.28 | 9.7990278 | 9.9086275  |
| 2      | 62977.24 | 81074.78 | 128736.63 | 9.7991836 | 9.9088858  |
| 3      | 62999.83 | 81123.00 | 128767.00 | 9.7993394 | 9.9091440  |
| 4      | 63022.42 | 81171.24 | 128797.40 | 9.7994951 | 9.9094022  |
| 5      | 63045.00 | 81219.51 | 128827.82 | 9.7996507 | 9.9096603  |
| 6      | 63067.58 | 81267.80 | 128858.27 | 9.7998062 | 9.9099185  |
| 7      | 63090.15 | 81316.11 | 128888.75 | 9.7999616 | 9.9101766  |
| 8      | 63112.72 | 81364.44 | 128919.25 | 9.8001169 | 9.9104347  |
| 9      | 63135.28 | 81412.80 | 128949.77 | 9.8002721 | 9.9106927  |
| 10     | 63157.84 | 81461.18 | 128980.32 | 9.8004272 | 9.9109507  |
| 11     | 63180.39 | 81509.58 | 129010.90 | 9.8005823 | 9.9112087  |
| 12     | 63202.93 | 81558.01 | 129041.50 | 9.8007372 | 9.9114666  |
| 13     | 63225.47 | 81606.46 | 129072.13 | 9.8008921 | 9.9117245  |
| 14     | 63248.00 | 81654.93 | 129102.78 | 9.8010468 | 9.9119824  |
| 15     | 63270.53 | 81703.43 | 129133.46 | 9.8012015 | 9.9122403  |
| 16     | 63293.05 | 81751.95 | 129164.16 | 9.8013561 | 9.9124981  |
| 17     | 63315.57 | 81800.49 | 129194.89 | 9.8015106 | 9.9127559  |
| 18     | 63338.08 | 81849.05 | 129225.64 | 9.8016649 | 9.9130137  |
| 19     | 63360.59 | 81897.64 | 129256.42 | 9.8018192 | 9.9132714  |
| 20     | 63383.09 | 81946.25 | 129287.23 | 9.8019735 | 9.9135291  |
| 21     | 63405.59 | 81994.88 | 129318.06 | 9.8021276 | 9.9137868  |
| 22     | 63428.08 | 82043.54 | 129348.92 | 9.8022816 | 9.9140444  |
| 23     | 63450.57 | 82092.22 | 129379.80 | 9.8024355 | 9.9143020  |
| 24     | 63473.05 | 82140.93 | 129410.71 | 9.8025894 | 9.9145596  |
| 25     | 63495.53 | 82189.65 | 129441.64 | 9.8027431 | 9.9148171  |
| 26     | 63518.00 | 82238.40 | 129472.60 | 9.8028968 | 9.9150747  |
| 27     | 63540.46 | 82287.18 | 129503.59 | 9.8030504 | 9.9153322  |
| 28     | 63562.92 | 82335.97 | 129534.60 | 9.8032038 | 9.9155896  |
| 29     | 63585.37 | 82384.79 | 129565.64 | 9.8033572 | 9.9158471  |
| 30     | 63607.82 | 82433.64 | 129596.70 | 9.8035105 | 9.9161045  |

# 50 Grad.

| Minute. | Sinus    | Tang.     | Secant.   |  | Log. Sin. | Log. Tang. |
|---------|----------|-----------|-----------|--|-----------|------------|
| 60      | 77714.60 | 123489.82 | 158901.57 |  | 9.8905026 | 10.0916308 |
| 59      | 77696.29 | 123416.29 | 158844.52 |  | 9.8904003 | 10.0913725 |
| 58      | 77677.97 | 123342.92 | 158787.52 |  | 9.8902979 | 10.0911142 |
| 57      | 77659.65 | 123269.61 | 158730.58 |  | 9.8901954 | 10.0908560 |
| 56      | 77641.32 | 123196.34 | 158673.69 |  | 9.8900929 | 10.0905978 |
| 55      | 77622.98 | 123123.13 | 158616.85 |  | 9.8899903 | 10.0903397 |
| 54      | 77604.64 | 123049.97 | 158560.07 |  | 9.8898877 | 10.0900815 |
| 53      | 77586.29 | 122976.87 | 158503.34 |  | 9.8897850 | 10.0898234 |
| 52      | 77567.94 | 122903.81 | 158446.67 |  | 9.8896822 | 10.0895653 |
| 51      | 77549.58 | 122830.81 | 158390.05 |  | 9.8895794 | 10.0893073 |
| 50      | 77531.21 | 122757.86 | 158333.48 |  | 9.8894765 | 10.0890493 |
| 49      | 77512.83 | 122684.96 | 158276.97 |  | 9.8893736 | 10.0887913 |
| 48      | 77494.45 | 122612.11 | 158220.51 |  | 9.8892706 | 10.0885334 |
| 47      | 77476.06 | 122539.32 | 158164.11 |  | 9.8891675 | 10.0882755 |
| 46      | 77457.67 | 122466.58 | 158107.76 |  | 9.8890644 | 10.0880176 |
| 45      | 77439.27 | 122393.89 | 158051.46 |  | 9.8889612 | 10.0877597 |
| 44      | 77420.86 | 122321.25 | 157995.21 |  | 9.8888580 | 10.0875019 |
| 43      | 77402.44 | 122248.66 | 157939.02 |  | 9.8887547 | 10.0872441 |
| 42      | 77384.02 | 122176.13 | 157882.89 |  | 9.8886513 | 10.0869863 |
| 41      | 77365.59 | 122103.64 | 157826.80 |  | 9.8885479 | 10.0867286 |
| 40      | 77347.16 | 122031.21 | 157770.77 |  | 9.8884444 | 10.0864709 |
| 39      | 77328.72 | 121958.83 | 157714.79 |  | 9.8883408 | 10.0862132 |
| 38      | 77310.27 | 121886.50 | 157658.87 |  | 9.8882372 | 10.0859556 |
| 37      | 77291.82 | 121814.22 | 157603.00 |  | 9.8881335 | 10.0856980 |
| 36      | 77273.36 | 121741.99 | 157547.18 |  | 9.8880298 | 10.0854404 |
| 35      | 77254.89 | 121669.82 | 157491.41 |  | 9.8879260 | 10.0851829 |
| 34      | 77236.42 | 121597.69 | 157435.70 |  | 9.8878221 | 10.0849253 |
| 33      | 77217.94 | 121525.62 | 157380.04 |  | 9.8877182 | 10.0846678 |
| 32      | 77199.45 | 121453.59 | 157324.43 |  | 9.8876142 | 10.0844104 |
| 31      | 77180.96 | 121381.62 | 157268.87 |  | 9.8875102 | 10.0841529 |
| 30      | 77162.46 | 121309.70 | 157213.37 |  | 9.8874061 | 10.0838955 |

## 39 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 63607.82 | 82433.64 | 129596.70 | 9.8035105 | 9.9161045  |
| 31     | 63630.26 | 82482.51 | 129627.79 | 9.8036637 | 9.9163618  |
| 32     | 63652.70 | 82531.40 | 129658.90 | 9.8038168 | 9.9166192  |
| 33     | 63675.13 | 82580.31 | 129690.04 | 9.8039699 | 9.9168765  |
| 34     | 63697.56 | 82629.25 | 129721.21 | 9.8041228 | 9.9171338  |
| 35     | 63719.98 | 82678.21 | 129752.40 | 9.8042757 | 9.9173911  |
| 36     | 63742.40 | 82727.19 | 129783.62 | 9.8044284 | 9.9176485  |
| 37     | 63764.81 | 82776.20 | 129814.87 | 9.8045811 | 9.9179058  |
| 38     | 63787.21 | 82825.23 | 129846.14 | 9.8047336 | 9.9181627  |
| 39     | 63809.61 | 82874.29 | 129877.44 | 9.8048861 | 9.9184198  |
| 40     | 63832.01 | 82923.37 | 129908.76 | 9.8050385 | 9.9186769  |
| 41     | 63854.40 | 82972.47 | 129940.11 | 9.8051908 | 9.9189340  |
| 42     | 63876.78 | 83021.60 | 129971.48 | 9.8053430 | 9.9191911  |
| 43     | 63899.16 | 83070.75 | 130002.88 | 9.8054951 | 9.9194481  |
| 44     | 63921.53 | 83119.92 | 130034.31 | 9.8056472 | 9.9197051  |
| 45     | 63943.90 | 83169.12 | 130065.76 | 9.8057991 | 9.9199621  |
| 46     | 63966.26 | 83218.34 | 130097.24 | 9.8059510 | 9.9202191  |
| 47     | 63988.62 | 83267.59 | 130128.75 | 9.8061027 | 9.9204760  |
| 48     | 64010.97 | 83316.86 | 130160.28 | 9.8062544 | 9.9207329  |
| 49     | 64033.32 | 83366.15 | 130191.84 | 9.8064060 | 9.9209898  |
| 50     | 64055.66 | 83415.47 | 130223.43 | 9.8065575 | 9.9212466  |
| 51     | 64077.99 | 83464.81 | 130255.04 | 9.8067089 | 9.9215034  |
| 52     | 64100.32 | 83514.18 | 130286.68 | 9.8068602 | 9.9217602  |
| 53     | 64122.64 | 83563.57 | 130318.34 | 9.8070114 | 9.9220170  |
| 54     | 64144.96 | 83612.98 | 130350.03 | 9.8071626 | 9.9222737  |
| 55     | 64167.27 | 83662.42 | 130381.75 | 9.8073136 | 9.9225304  |
| 56     | 64189.58 | 83711.88 | 130413.49 | 9.8074646 | 9.9227871  |
| 57     | 64211.88 | 83761.36 | 130445.26 | 9.8076154 | 9.9230437  |
| 58     | 64234.18 | 83810.87 | 130477.06 | 9.8077662 | 9.9233004  |
| 59     | 64256.47 | 83860.40 | 130508.88 | 9.8079169 | 9.9235570  |
| 60     | 64278.76 | 83909.96 | 130540.73 | 9.8080675 | 9.9238135  |

## 50 Grad.

| Minut | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|-------|----------|-----------|-----------|-----------|------------|
| 30    | 77162.46 | 121309.70 | 157213.37 | 9.8874061 | 10.0838955 |
| 29    | 77143.95 | 121237.83 | 157157.92 | 9.8873019 | 10.0836382 |
| 28    | 77125.44 | 121166.01 | 157102.52 | 9.8871977 | 10.0833808 |
| 27    | 77106.92 | 121094.24 | 157047.17 | 9.8870934 | 10.0831235 |
| 26    | 77088.39 | 121022.52 | 156991.88 | 9.8869890 | 10.0828662 |
| 25    | 77069.86 | 120950.85 | 156936.64 | 9.8868846 | 10.0826089 |
| 24    | 77051.32 | 120879.23 | 156881.45 | 9.8867801 | 10.0823517 |
| 23    | 77032.78 | 120807.67 | 156826.31 | 9.8866756 | 10.0820945 |
| 22    | 77014.23 | 120736.15 | 156771.23 | 9.8865710 | 10.0818373 |
| 21    | 76995.67 | 120664.68 | 156716.19 | 9.8864663 | 10.0815802 |
| 20    | 76977.10 | 120593.27 | 156661.21 | 9.8863616 | 10.0813231 |
| 19    | 76958.53 | 120521.90 | 156606.28 | 9.8862568 | 10.0810660 |
| 18    | 76939.95 | 120450.58 | 156551.41 | 9.8861519 | 10.0808089 |
| 17    | 76921.37 | 120379.31 | 156496.58 | 9.8860470 | 10.0805519 |
| 16    | 76902.78 | 120308.10 | 156441.81 | 9.8859420 | 10.0802949 |
| 15    | 76884.18 | 120236.93 | 156387.08 | 9.8858370 | 10.0800379 |
| 14    | 76865.58 | 120165.81 | 156332.41 | 9.8857319 | 10.0797809 |
| 13    | 76846.97 | 120094.75 | 156277.79 | 9.8856267 | 10.0795240 |
| 12    | 76828.35 | 120023.73 | 156223.22 | 9.8855215 | 10.0792671 |
| 11    | 76809.73 | 119952.76 | 156168.70 | 9.8854162 | 10.0790102 |
| 10    | 76791.10 | 119881.84 | 156114.24 | 9.8853109 | 10.0787534 |
| 9     | 76772.46 | 119810.97 | 156059.82 | 9.8852055 | 10.0784966 |
| 8     | 76753.82 | 119740.15 | 156005.46 | 9.8851000 | 10.0782398 |
| 7     | 76735.17 | 119669.38 | 155951.15 | 9.8849945 | 10.0779830 |
| 6     | 76716.51 | 119598.66 | 155896.89 | 9.8848889 | 10.0777263 |
| 5     | 76697.85 | 119527.99 | 155842.67 | 9.8847832 | 10.0774696 |
| 4     | 76679.18 | 119457.36 | 155788.51 | 9.8846775 | 10.0772129 |
| 3     | 76660.51 | 119386.79 | 155734.41 | 9.8845717 | 10.0769563 |
| 2     | 76641.83 | 119316.26 | 155680.35 | 9.8844659 | 10.0766996 |
| 1     | 76623.14 | 119245.79 | 155626.34 | 9.8843599 | 10.0764430 |
| 0     | 76604.44 | 119175.36 | 155572.38 | 9.8842540 | 10.0761865 |

## 40 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 64278.76 | 83909.96 | 130540.73 | 9.8080675 | 9.9238135  |
| 1      | 64301.04 | 83959.54 | 130572.61 | 9.8082180 | 9.9240701  |
| 2      | 64323.32 | 84009.15 | 130604.51 | 9.8083684 | 9.9243266  |
| 3      | 64345.59 | 84058.78 | 130636.44 | 9.8085188 | 9.9245831  |
| 4      | 64367.85 | 84108.44 | 130668.39 | 9.8086690 | 9.9248396  |
| 5      | 64390.11 | 84158.12 | 130700.37 | 9.8088192 | 9.9250960  |
| 6      | 64412.36 | 84207.82 | 130732.38 | 9.8089692 | 9.9253524  |
| 7      | 64434.61 | 84257.55 | 130764.42 | 9.8091192 | 9.9256088  |
| 8      | 64456.85 | 84307.30 | 130796.49 | 9.8092691 | 9.9258652  |
| 9      | 64479.09 | 84357.08 | 130828.58 | 9.8094189 | 9.9261215  |
| 10     | 64501.32 | 84406.88 | 130860.70 | 9.8095686 | 9.9263778  |
| 11     | 64523.55 | 84456.70 | 130892.84 | 9.8097182 | 9.9266341  |
| 12     | 64545.77 | 84506.55 | 130925.01 | 9.8098678 | 9.9268904  |
| 13     | 64567.98 | 84556.43 | 130957.21 | 9.8100172 | 9.9271466  |
| 14     | 64590.19 | 84606.33 | 130989.43 | 9.8101666 | 9.9274028  |
| 15     | 64612.40 | 84656.25 | 131021.68 | 9.8103159 | 9.9276590  |
| 16     | 64634.60 | 84706.20 | 131053.96 | 9.8104650 | 9.9279152  |
| 17     | 64656.79 | 84756.17 | 131086.26 | 9.8106141 | 9.9281713  |
| 18     | 64678.98 | 84806.17 | 131118.59 | 9.8107631 | 9.9284274  |
| 19     | 64701.16 | 84856.19 | 131150.95 | 9.8109121 | 9.9286835  |
| 20     | 64723.34 | 84906.24 | 131183.34 | 9.8110609 | 9.9289396  |
| 21     | 64745.51 | 84956.31 | 131215.75 | 9.8112096 | 9.9291956  |
| 22     | 64767.67 | 85006.40 | 131248.19 | 9.8113583 | 9.9294516  |
| 23     | 64789.83 | 85056.52 | 131280.66 | 9.8115069 | 9.9297076  |
| 24     | 64811.99 | 85106.67 | 131313.16 | 9.8116554 | 9.9299636  |
| 25     | 64834.14 | 85156.84 | 131345.68 | 9.8118038 | 9.9302195  |
| 26     | 64856.28 | 85207.04 | 131378.23 | 9.8119521 | 9.9304755  |
| 27     | 64878.42 | 85257.26 | 131410.81 | 9.8121003 | 9.9307314  |
| 28     | 64900.55 | 85307.50 | 131443.41 | 9.8122484 | 9.9309872  |
| 29     | 64922.68 | 85357.77 | 131476.04 | 9.8123965 | 9.9312431  |
| 30     | 64944.80 | 85408.07 | 131508.70 | 9.8125444 | 9.9314989  |

# 49 Grad.

| Minuti. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|---------|----------|-----------|-----------|-----------|------------|
| 60      | 76604.44 | 119175.36 | 155572.38 | 9.8842540 | 10.0761865 |
| 59      | 76585.74 | 119104.98 | 155518.48 | 9.8841479 | 10.0759299 |
| 58      | 76567.03 | 119034.65 | 155464.62 | 9.8840418 | 10.0756734 |
| 57      | 76548.32 | 118964.37 | 155410.81 | 9.8839357 | 10.0754169 |
| 56      | 76529.60 | 118894.14 | 155357.06 | 9.8838294 | 10.0751604 |
| 55      | 76510.87 | 118823.95 | 155303.35 | 9.8837232 | 10.0749040 |
| 54      | 76492.14 | 118753.82 | 155249.70 | 9.8836168 | 10.0746476 |
| 53      | 76473.40 | 118683.73 | 155196.09 | 9.8835104 | 10.0743912 |
| 52      | 76454.65 | 118613.69 | 155142.54 | 9.8834039 | 10.0741348 |
| 51      | 76435.90 | 118543.70 | 155089.04 | 9.8832974 | 10.0738785 |
| 50      | 76417.14 | 118473.76 | 155035.58 | 9.8831908 | 10.0736222 |
| 49      | 76398.37 | 118403.87 | 154982.18 | 9.8830841 | 10.0733659 |
| 48      | 76379.60 | 118334.02 | 154928.82 | 9.8829774 | 10.0731096 |
| 47      | 76360.82 | 118264.22 | 154875.52 | 9.8828706 | 10.0728534 |
| 46      | 76342.04 | 118194.47 | 154822.26 | 9.8827638 | 10.0725972 |
| 45      | 76323.25 | 118124.77 | 154769.06 | 9.8826568 | 10.0723410 |
| 44      | 76304.45 | 118055.12 | 154715.90 | 9.8825499 | 10.0720848 |
| 43      | 76285.64 | 117985.51 | 154662.80 | 9.8824428 | 10.0718287 |
| 42      | 76266.83 | 117915.95 | 154609.74 | 9.8823357 | 10.0715726 |
| 41      | 76248.01 | 117846.44 | 154556.73 | 9.8822285 | 10.0713165 |
| 40      | 76229.19 | 117776.98 | 154503.78 | 9.8821213 | 10.0710604 |
| 39      | 76210.36 | 117707.56 | 154450.87 | 9.8820140 | 10.0708044 |
| 38      | 76191.52 | 117638.20 | 154398.01 | 9.8819067 | 10.0705484 |
| 37      | 76172.68 | 117568.88 | 154345.20 | 9.8817992 | 10.0702924 |
| 36      | 76153.83 | 117499.60 | 154292.44 | 9.8816918 | 10.0700364 |
| 35      | 76134.97 | 117430.38 | 154239.73 | 9.8815842 | 10.0697805 |
| 34      | 76116.11 | 117361.20 | 154187.06 | 9.8814766 | 10.0695245 |
| 33      | 76097.24 | 117292.07 | 154134.45 | 9.8813689 | 10.0692686 |
| 32      | 76078.37 | 117222.98 | 154081.89 | 9.8812612 | 10.0690128 |
| 31      | 76059.49 | 117153.95 | 154029.37 | 9.8811534 | 10.0687569 |
| 30      | 76040.60 | 117084.96 | 153976.90 | 9.8810455 | 10.0685011 |



# 40 Grad

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 64944.80 | 85408.07 | 131508.70 | 9.8125444 | 9.9314989  |
| 31     | 64966.92 | 85458.39 | 131541.39 | 9.8126923 | 9.9317547  |
| 32     | 64989.03 | 85508.73 | 131574.10 | 9.8128401 | 9.9320105  |
| 33     | 65011.14 | 85559.10 | 131606.84 | 9.8129878 | 9.9322662  |
| 34     | 65033.24 | 85609.50 | 131639.61 | 9.8131354 | 9.9325220  |
| 35     | 65055.33 | 85659.92 | 131672.41 | 9.8132829 | 9.9327777  |
| 36     | 65077.42 | 85710.37 | 131705.23 | 9.8134303 | 9.9330334  |
| 37     | 65099.50 | 85760.84 | 131738.08 | 9.8135777 | 9.9332890  |
| 38     | 65121.58 | 85811.33 | 131770.96 | 9.8137250 | 9.9335446  |
| 39     | 65143.66 | 85861.85 | 131803.86 | 9.8138721 | 9.9338003  |
| 40     | 65165.72 | 85912.40 | 131836.79 | 9.8140192 | 9.9340559  |
| 41     | 65187.78 | 85962.97 | 131869.75 | 9.8141662 | 9.9343114  |
| 42     | 65209.84 | 86013.57 | 131902.74 | 9.8143131 | 9.9345670  |
| 43     | 65231.89 | 86064.19 | 131935.76 | 9.8144600 | 9.9348225  |
| 44     | 65253.94 | 86114.84 | 131968.81 | 9.8146067 | 9.9350780  |
| 45     | 65275.98 | 86165.51 | 132001.88 | 9.8147534 | 9.9353335  |
| 46     | 65298.01 | 86216.21 | 132034.98 | 9.8148999 | 9.9355889  |
| 47     | 65320.04 | 86266.93 | 132068.11 | 9.8150464 | 9.9358444  |
| 48     | 65342.06 | 86317.68 | 132101.26 | 9.8151928 | 9.9360998  |
| 49     | 65364.08 | 86368.46 | 132134.44 | 9.8153391 | 9.9363552  |
| 50     | 65386.09 | 86419.26 | 132167.65 | 9.8154854 | 9.9366105  |
| 51     | 65408.10 | 86470.09 | 132200.89 | 9.8156315 | 9.9368659  |
| 52     | 65430.10 | 86520.94 | 132234.16 | 9.8157776 | 9.9371212  |
| 53     | 65452.09 | 86571.81 | 132267.45 | 9.8159235 | 9.9373765  |
| 54     | 65474.08 | 86622.71 | 132300.77 | 9.8160694 | 9.9376318  |
| 55     | 65496.06 | 86673.64 | 132334.12 | 9.8162152 | 9.9378871  |
| 56     | 65518.04 | 86724.60 | 132367.50 | 9.8163609 | 9.9381423  |
| 57     | 65540.01 | 86775.58 | 132400.91 | 9.8165066 | 9.9383975  |
| 58     | 65561.98 | 86826.59 | 132434.35 | 9.8166521 | 9.9386527  |
| 59     | 65583.94 | 86877.62 | 132467.81 | 9.8167975 | 9.9389079  |
| 60     | 65605.90 | 86928.68 | 132501.30 | 9.8169429 | 9.9391631  |

# 49 Grad.

| Min. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|------|----------|-----------|-----------|-----------|------------|
| 30   | 76040.60 | 117084.96 | 153976.90 | 9.8810455 | 10.0685011 |
| 29   | 76021.70 | 117016.01 | 153924.49 | 9.8809376 | 10.0682453 |
| 28   | 76002.80 | 116947.12 | 153872.12 | 9.8808296 | 10.0679895 |
| 27   | 75983.89 | 116878.27 | 153819.80 | 9.8807215 | 10.0677338 |
| 26   | 75964.98 | 116809.47 | 153767.52 | 9.8806134 | 10.0674780 |
| 25   | 75946.06 | 116740.71 | 153715.30 | 9.8805052 | 10.0672223 |
| 24   | 75927.13 | 116672.00 | 153663.12 | 9.8803970 | 10.0669666 |
| 23   | 75908.20 | 116603.34 | 153611.00 | 9.8802887 | 10.0667110 |
| 22   | 75889.26 | 116534.72 | 153558.92 | 9.8801803 | 10.0664554 |
| 21   | 75870.31 | 116466.15 | 153506.89 | 9.8800719 | 10.0661997 |
| 20   | 75851.36 | 116397.63 | 153454.91 | 9.8799634 | 10.0659441 |
| 19   | 75832.40 | 116329.16 | 153402.97 | 9.8798548 | 10.0656886 |
| 18   | 75813.43 | 116260.73 | 153351.09 | 9.8797462 | 10.0654330 |
| 17   | 75794.46 | 116192.34 | 153299.25 | 9.8796375 | 10.0651775 |
| 16   | 75775.48 | 116124.00 | 153247.46 | 9.8795287 | 10.0649220 |
| 15   | 75756.50 | 116055.71 | 153195.72 | 9.8794199 | 10.0646665 |
| 14   | 75737.51 | 115987.47 | 153144.03 | 9.8793110 | 10.0644111 |
| 13   | 75718.51 | 115919.27 | 153092.38 | 9.8792021 | 10.0641556 |
| 12   | 75699.50 | 115851.11 | 153040.78 | 9.8790930 | 10.0639002 |
| 11   | 75680.49 | 115783.01 | 152989.23 | 9.8789840 | 10.0636448 |
| 10   | 75661.47 | 115714.95 | 152937.73 | 9.8788748 | 10.0633895 |
| 9    | 75642.45 | 115646.93 | 152886.27 | 9.8787656 | 10.0631341 |
| 8    | 75623.42 | 115578.96 | 152834.87 | 9.8786563 | 10.0628788 |
| 7    | 75604.39 | 115511.04 | 152783.51 | 9.8785470 | 10.0626235 |
| 6    | 75585.35 | 115443.16 | 152732.19 | 9.8784376 | 10.0623682 |
| 5    | 75566.30 | 115375.32 | 152680.93 | 9.8783281 | 10.0621129 |
| 4    | 75547.24 | 115307.54 | 152629.71 | 9.8782186 | 10.0618577 |
| 3    | 75528.18 | 115239.79 | 152578.54 | 9.8781090 | 10.0616025 |
| 2    | 75509.11 | 115172.10 | 152527.41 | 9.8779994 | 10.0613473 |
| 1    | 75490.04 | 115104.45 | 152476.34 | 9.8778896 | 10.0610921 |
| 0    | 75470.96 | 115036.84 | 152425.31 | 9.8777799 | 10.0608369 |

## 41 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang |
|--------|----------|----------|-----------|-----------|-----------|
| 0      | 65605.90 | 6028.69  | 132501.30 | 9.8169429 | 9.9391631 |
| 1      | 65627.85 | 86979.76 | 132534.82 | 9.8170882 | 9.9394182 |
| 2      | 65649.80 | 87030.87 | 132568.37 | 9.8172334 | 9.9396733 |
| 3      | 65671.74 | 87082.00 | 132601.94 | 9.8173785 | 9.9399284 |
| 4      | 65693.67 | 87133.16 | 132635.54 | 9.8175235 | 9.9401835 |
| 5      | 65715.60 | 87184.35 | 132669.18 | 9.8176685 | 9.9404385 |
| 6      | 65737.52 | 87235.56 | 132702.84 | 9.8178133 | 9.9406936 |
| 7      | 65759.44 | 87286.80 | 132736.53 | 9.8179581 | 9.9409486 |
| 8      | 65781.35 | 87338.06 | 132770.25 | 9.8181028 | 9.9412036 |
| 9      | 65803.26 | 87389.35 | 132803.99 | 9.8182474 | 9.9414585 |
| 10     | 65825.16 | 87440.67 | 132837.76 | 9.8183919 | 9.9417135 |
| 11     | 65847.06 | 87492.01 | 132871.56 | 9.8185364 | 9.9419684 |
| 12     | 65868.95 | 87543.38 | 132905.39 | 9.8186807 | 9.9422233 |
| 13     | 65890.83 | 87594.78 | 132939.25 | 9.8188250 | 9.9424782 |
| 14     | 65912.71 | 87646.20 | 132973.14 | 9.8189692 | 9.9427331 |
| 15     | 65934.58 | 87697.65 | 133007.06 | 9.8191133 | 9.9429879 |
| 16     | 65956.45 | 87749.12 | 133041.00 | 9.8192573 | 9.9432428 |
| 17     | 65978.31 | 87800.62 | 133074.97 | 9.8194012 | 9.9434976 |
| 18     | 66000.17 | 87852.15 | 133108.97 | 9.8195450 | 9.9437524 |
| 19     | 66022.02 | 87903.70 | 133143.00 | 9.8196888 | 9.9440072 |
| 20     | 66043.86 | 87955.28 | 133177.06 | 9.8198325 | 9.9442619 |
| 21     | 66065.70 | 88006.89 | 133211.15 | 9.8199761 | 9.9445166 |
| 22     | 66087.53 | 88058.52 | 133245.27 | 9.8201196 | 9.9447714 |
| 23     | 66109.36 | 88110.18 | 133279.42 | 9.8202630 | 9.9450261 |
| 24     | 66131.18 | 88161.86 | 133313.59 | 9.8204063 | 9.9452807 |
| 25     | 66153.00 | 88213.57 | 133347.79 | 9.8205496 | 9.9455354 |
| 26     | 66174.81 | 88265.31 | 133382.02 | 9.8206927 | 9.9457900 |
| 27     | 66196.62 | 88317.07 | 133416.28 | 9.8208358 | 9.9460447 |
| 28     | 66218.42 | 88368.86 | 133450.57 | 9.8209788 | 9.9462993 |
| 29     | 66240.22 | 88420.68 | 133484.89 | 9.8211217 | 9.9465539 |
| 30     | 66262.01 | 88472.53 | 133519.24 | 9.8212646 | 9.9468084 |

# 48 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 75470.96 | 115036.84 | 152425.31 | 9.8777799 | 10.0608369 |
| 59     | 75451.87 | 114969.28 | 152374.33 | 9.8776700 | 10.0605818 |
| 58     | 75432.78 | 114901.76 | 152323.39 | 9.8775601 | 10.0603267 |
| 57     | 75413.68 | 114834.29 | 152272.50 | 9.8774501 | 10.0600716 |
| 56     | 75394.57 | 114766.87 | 152221.66 | 9.8773401 | 10.0598165 |
| 55     | 75375.46 | 114699.49 | 152170.87 | 9.8772300 | 10.0595615 |
| 54     | 75356.34 | 114632.15 | 152120.12 | 9.8771198 | 10.0593064 |
| 53     | 75337.21 | 114564.86 | 152069.42 | 9.8770096 | 10.0590514 |
| 52     | 75318.08 | 114497.62 | 152018.76 | 9.8768993 | 10.0587964 |
| 51     | 75298.94 | 114430.41 | 151968.15 | 9.8767889 | 10.0585415 |
| 50     | 75279.80 | 114463.26 | 151917.59 | 9.8766785 | 10.0582865 |
| 49     | 75260.65 | 114296.15 | 151867.08 | 9.8765680 | 10.0580316 |
| 48     | 75241.49 | 114229.08 | 151816.61 | 9.8764574 | 10.0577767 |
| 47     | 75222.33 | 114162.06 | 151766.19 | 9.8763468 | 10.0575218 |
| 46     | 75203.16 | 114095.08 | 151715.81 | 9.8762361 | 10.0572669 |
| 45     | 75183.98 | 114028.15 | 151665.48 | 9.8761253 | 10.0570121 |
| 44     | 75164.80 | 113961.26 | 151615.20 | 9.8760145 | 10.0567572 |
| 43     | 75145.61 | 113894.41 | 151564.96 | 9.8759036 | 10.0565024 |
| 42     | 75126.41 | 113827.61 | 151514.77 | 9.8757927 | 10.0562476 |
| 41     | 75107.21 | 113760.85 | 151464.62 | 9.8756816 | 10.0559928 |
| 40     | 75088.00 | 113694.14 | 151414.52 | 9.8755706 | 10.0557381 |
| 39     | 75068.79 | 113627.47 | 151364.47 | 9.8754594 | 10.0554834 |
| 38     | 75049.57 | 113560.85 | 151314.46 | 9.8753482 | 10.0552286 |
| 37     | 75030.34 | 113494.27 | 151264.50 | 9.8752369 | 10.0549739 |
| 36     | 75011.11 | 113427.73 | 151214.59 | 9.8751265 | 10.0547193 |
| 35     | 74991.87 | 113361.24 | 151164.72 | 9.8750142 | 10.0544646 |
| 34     | 74972.62 | 113294.79 | 151114.89 | 9.8749027 | 10.0542100 |
| 33     | 74953.37 | 113228.39 | 151065.11 | 9.8747912 | 10.0539553 |
| 32     | 74934.11 | 113162.03 | 151015.38 | 9.8746795 | 10.0537007 |
| 31     | 74914.84 | 113095.71 | 150965.69 | 9.8745679 | 10.0534461 |
| 30     | 74895.57 | 113029.44 | 150916.05 | 9.8744561 | 10.0531916 |

## 41 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log Sin.  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 66262.01 | 88472.53 | 133519.24 | 9.8212646 | 9.9468084  |
| 31     | 66283.79 | 88524.40 | 133553.62 | 9.8214073 | 9.9470630  |
| 32     | 66305.57 | 88576.30 | 133588.03 | 9.8215500 | 9.9473175  |
| 33     | 66327.34 | 88628.22 | 133622.46 | 9.8216926 | 9.9475720  |
| 34     | 66349.11 | 88680.17 | 133656.92 | 9.8218351 | 9.9478265  |
| 35     | 66370.87 | 88732.15 | 133691.41 | 9.8219775 | 9.9480810  |
| 36     | 66392.62 | 88784.16 | 133725.94 | 9.8221198 | 9.9483355  |
| 37     | 66414.37 | 88836.20 | 133760.49 | 9.8222621 | 9.9485899  |
| 38     | 66436.11 | 88888.26 | 133795.07 | 9.8224042 | 9.9488443  |
| 39     | 66457.85 | 88949.34 | 133829.68 | 9.8225463 | 9.9490987  |
| 40     | 66479.59 | 88992.45 | 133864.32 | 9.8226883 | 9.9493531  |
| 41     | 66501.32 | 89044.59 | 133898.99 | 9.8228302 | 9.9496075  |
| 42     | 66523.04 | 89096.75 | 133933.69 | 9.8229721 | 9.9498619  |
| 43     | 66544.75 | 89148.94 | 133968.42 | 9.8231138 | 9.9501162  |
| 44     | 66566.46 | 89201.16 | 134003.17 | 9.8232555 | 9.9503705  |
| 45     | 66588.17 | 89253.41 | 134037.95 | 9.8233971 | 9.9506248  |
| 46     | 66609.87 | 89305.69 | 134072.76 | 9.8235386 | 9.9508791  |
| 47     | 66631.56 | 89357.99 | 134107.61 | 9.8236800 | 9.9511334  |
| 48     | 66653.25 | 89410.32 | 134142.48 | 9.8238213 | 9.9513876  |
| 49     | 66674.93 | 89462.68 | 134177.38 | 9.8239626 | 9.9516419  |
| 50     | 66696.61 | 89515.06 | 134212.32 | 9.8241037 | 9.9518961  |
| 51     | 66718.28 | 89567.47 | 134247.28 | 9.8242448 | 9.9521503  |
| 52     | 66739.94 | 89619.91 | 134282.27 | 9.8243858 | 9.9524045  |
| 53     | 66761.60 | 89672.38 | 134317.29 | 9.8245267 | 9.9526587  |
| 54     | 66783.26 | 89724.87 | 134352.34 | 9.8246676 | 9.9529128  |
| 55     | 66804.91 | 89777.39 | 134387.42 | 9.8248083 | 9.9531670  |
| 56     | 66826.55 | 89829.94 | 134422.53 | 9.8249490 | 9.9534211  |
| 57     | 66848.18 | 89882.52 | 134457.67 | 9.8250896 | 9.9536752  |
| 58     | 66869.81 | 89935.12 | 134492.84 | 9.8252301 | 9.9539293  |
| 59     | 66891.44 | 89987.75 | 134528.04 | 9.8253705 | 9.9541834  |
| 60     | 66913.06 | 90040.41 | 134563.27 | 9.8255109 | 9.9544374  |

# 48 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 74895.57 | 113029.44 | 150916.05 | 9.8744561 | 10.0531916 |
| 29     | 74876.29 | 112963.21 | 150896.45 | 9.8743443 | 10.0529370 |
| 28     | 74857.01 | 112897.02 | 150816.90 | 9.8742325 | 10.0526825 |
| 27     | 74837.72 | 112830.88 | 150767.39 | 9.8741205 | 10.0524280 |
| 26     | 74818.42 | 112764.78 | 150717.93 | 9.8740085 | 10.0521735 |
| 25     | 74799.12 | 112698.72 | 150668.52 | 9.8738965 | 10.0519190 |
| 24     | 74779.81 | 112632.71 | 150619.15 | 9.8737844 | 10.0516645 |
| 23     | 74760.49 | 112566.74 | 150569.82 | 9.8736722 | 10.0514101 |
| 22     | 74741.17 | 112500.81 | 150520.54 | 9.8735599 | 10.0511557 |
| 21     | 74721.84 | 112434.93 | 150471.31 | 9.8734476 | 10.0509013 |
| 20     | 74702.51 | 112369.09 | 150422.11 | 9.8733352 | 10.0506469 |
| 19     | 74683.17 | 112303.29 | 150372.97 | 9.8732227 | 10.0503925 |
| 18     | 74663.82 | 112237.54 | 150323.87 | 9.8731102 | 10.0501381 |
| 17     | 74644.46 | 112171.83 | 150274.81 | 9.8729976 | 10.0498838 |
| 16     | 74625.10 | 112106.16 | 150225.80 | 9.8728849 | 10.0496295 |
| 15     | 74605.74 | 112040.53 | 150176.83 | 9.8727722 | 10.0493752 |
| 14     | 74586.37 | 111974.95 | 150127.91 | 9.8726594 | 10.0491209 |
| 13     | 74566.99 | 111909.41 | 150079.03 | 9.8725466 | 10.0488666 |
| 12     | 74547.60 | 111843.91 | 150030.20 | 9.8724337 | 10.0486124 |
| 11     | 74528.21 | 111778.46 | 149981.41 | 9.8723207 | 10.0483581 |
| 10     | 74508.81 | 111713.05 | 149932.67 | 9.8722076 | 10.0481039 |
| 9      | 74489.40 | 111647.68 | 149883.97 | 9.8720945 | 10.0478497 |
| 8      | 74469.99 | 111582.35 | 149835.31 | 9.8719813 | 10.0475955 |
| 7      | 74450.57 | 111517.06 | 149786.70 | 9.8718681 | 10.0473413 |
| 6      | 74431.15 | 111451.82 | 149738.13 | 9.8717548 | 10.0470872 |
| 5      | 74411.72 | 111386.62 | 149689.61 | 9.8716414 | 10.0468330 |
| 4      | 74392.29 | 111321.46 | 149641.13 | 9.8715279 | 10.0465789 |
| 3      | 74372.85 | 111256.35 | 149592.70 | 9.8714144 | 10.0463248 |
| 2      | 74353.40 | 111191.27 | 149544.30 | 9.8713008 | 10.0460707 |
| 1      | 74333.94 | 111126.24 | 149495.96 | 9.8711872 | 10.0458166 |
| 0      | 74314.48 | 111061.25 | 149447.65 | 9.8710735 | 10.0455626 |

## 42 Grad.

| Minut. | Sinus.   | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 66913.06 | 90040.41 | 134563.27 | 9.8255109 | 9.9544374  |
| 1      | 66934.67 | 90093.09 | 134598.53 | 9.8256512 | 9.9546915  |
| 2      | 66956.28 | 90145.80 | 134633.82 | 9.8257913 | 9.9549455  |
| 3      | 66977.88 | 90198.54 | 134669.14 | 9.8259314 | 9.9551995  |
| 4      | 66999.48 | 90251.31 | 134704.49 | 9.8260715 | 9.9554535  |
| 5      | 67021.07 | 90304.11 | 134739.87 | 9.8262114 | 9.9557075  |
| 6      | 67042.66 | 90356.94 | 134775.28 | 9.8263512 | 9.9559615  |
| 7      | 67064.24 | 90409.79 | 134810.72 | 9.8264910 | 9.9562154  |
| 8      | 67085.82 | 90462.67 | 134846.19 | 9.8266307 | 9.9564694  |
| 9      | 67107.39 | 90515.58 | 134881.69 | 9.8267703 | 9.9567233  |
| 10     | 67128.95 | 90568.51 | 134917.21 | 9.8269098 | 9.9569772  |
| 11     | 67150.51 | 90621.47 | 134952.77 | 9.8270493 | 9.9572311  |
| 12     | 67172.06 | 90674.46 | 134988.36 | 9.8271887 | 9.9574850  |
| 13     | 67193.61 | 90727.48 | 135023.98 | 9.8273279 | 9.9577389  |
| 14     | 67215.15 | 90780.53 | 135059.63 | 9.8274671 | 9.9579927  |
| 15     | 67236.68 | 90833.60 | 135095.31 | 9.8276063 | 9.9582465  |
| 16     | 67258.21 | 90886.71 | 135131.02 | 9.8277453 | 9.9585004  |
| 17     | 67279.73 | 90939.84 | 135166.76 | 9.8278843 | 9.9587542  |
| 18     | 67301.25 | 90993.00 | 135202.54 | 9.8280231 | 9.9590080  |
| 19     | 67322.76 | 91046.19 | 135238.34 | 9.8281619 | 9.9592618  |
| 20     | 67344.27 | 91099.41 | 135274.17 | 9.8283000 | 9.9595155  |
| 21     | 67365.77 | 91152.65 | 135310.03 | 9.8284393 | 9.9597693  |
| 22     | 67387.27 | 91205.92 | 135345.93 | 9.8285778 | 9.9600230  |
| 23     | 67408.76 | 91259.22 | 135381.86 | 9.8287163 | 9.9602767  |
| 24     | 67430.24 | 91312.55 | 135417.81 | 9.8288547 | 9.9605305  |
| 25     | 67451.72 | 91365.91 | 135453.79 | 9.8289930 | 9.9607842  |
| 26     | 67473.19 | 91419.29 | 135489.80 | 9.8291312 | 9.9610378  |
| 27     | 67494.66 | 91472.70 | 135525.85 | 9.8292694 | 9.9612915  |
| 28     | 67516.12 | 91526.15 | 135561.93 | 9.8294075 | 9.9615452  |
| 29     | 67537.57 | 91579.62 | 135598.03 | 9.8295454 | 9.9617978  |
| 30     | 67559.02 | 91633.12 | 135634.17 | 9.8296833 | 9.9620525  |

# 47 Grad.

| Minut. | Sinus.   | Tang.     | Secant.   | Log. Sin. | Log. Tang' |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 74314.48 | 111061.25 | 149447.65 | 9.8710735 | 10.0455626 |
| 59     | 74295.01 | 110996.30 | 149399.40 | 9.8709597 | 10.0453085 |
| 58     | 74275.54 | 110931.40 | 149351.18 | 9.8708458 | 10.0450545 |
| 57     | 74256.06 | 110866.53 | 149303.01 | 9.8707319 | 10.0448005 |
| 56     | 74236.57 | 110801.71 | 149254.88 | 9.8706179 | 10.0445465 |
| 55     | 74217.08 | 110736.93 | 149206.80 | 9.8705039 | 10.0442925 |
| 54     | 74197.58 | 110672.19 | 149158.75 | 9.8703898 | 10.0440385 |
| 53     | 74178.08 | 110607.50 | 149110.76 | 9.8702756 | 10.0437846 |
| 52     | 74158.57 | 110542.84 | 149062.80 | 9.8701613 | 10.0435306 |
| 51     | 74139.05 | 110478.23 | 149014.89 | 9.8700470 | 10.0432767 |
| 50     | 74119.53 | 110413.65 | 148967.03 | 9.8699326 | 10.0430228 |
| 49     | 74100.00 | 110349.12 | 148919.20 | 9.8698182 | 10.0427689 |
| 48     | 74080.46 | 110284.63 | 148871.42 | 9.8697037 | 10.0425150 |
| 47     | 74060.92 | 110220.16 | 148823.69 | 9.8695891 | 10.0422611 |
| 46     | 74041.37 | 110155.78 | 148775.99 | 9.8694744 | 10.0420073 |
| 45     | 74021.81 | 110091.41 | 148728.34 | 9.8693597 | 10.0417535 |
| 44     | 74002.25 | 110027.09 | 148680.73 | 9.8692449 | 10.0414996 |
| 43     | 73982.68 | 109962.81 | 148633.17 | 9.8691301 | 10.0412458 |
| 42     | 73963.11 | 109898.56 | 148585.65 | 9.8690152 | 10.0409920 |
| 41     | 73943.53 | 109834.36 | 148538.17 | 9.8689002 | 10.0407382 |
| 40     | 73923.94 | 109770.20 | 148490.73 | 9.8687851 | 10.0404845 |
| 39     | 73904.35 | 109706.08 | 148443.34 | 9.8686700 | 10.0402307 |
| 38     | 73884.75 | 109642.01 | 148395.99 | 9.8685548 | 10.0399770 |
| 37     | 73865.15 | 109577.97 | 148348.68 | 9.8684396 | 10.0397233 |
| 36     | 73845.54 | 109513.97 | 148301.42 | 9.8683242 | 10.0394695 |
| 35     | 73825.92 | 109450.02 | 148254.20 | 9.8682088 | 10.0392158 |
| 34     | 73806.29 | 109386.10 | 148207.02 | 9.8680934 | 10.0389622 |
| 33     | 73786.66 | 109322.23 | 148159.88 | 9.8679779 | 10.0387085 |
| 32     | 73767.02 | 109258.40 | 148112.78 | 9.8678623 | 10.0384548 |
| 31     | 73747.38 | 109194.60 | 148065.73 | 9.8677466 | 10.0382012 |
| 30     | 73727.73 | 109130.85 | 148018.72 | 9.8676309 | 10.0379475 |



# 42 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 67559.02 | 91633.12 | 135634.17 | 9.8296833 | 9.9620525  |
| 31     | 67580.46 | 91686.65 | 135670.34 | 9.8298212 | 9.9623061  |
| 32     | 67601.90 | 91740.20 | 135706.54 | 9.8299580 | 9.9625597  |
| 33     | 67623.33 | 91793.79 | 135742.77 | 9.8300966 | 9.9628133  |
| 34     | 67644.76 | 91847.40 | 135779.03 | 9.8302342 | 9.9630669  |
| 35     | 67666.18 | 91901.04 | 135815.32 | 9.8303717 | 9.9633201  |
| 36     | 67687.60 | 91954.71 | 135851.64 | 9.8305091 | 9.9635740  |
| 37     | 67709.01 | 92008.41 | 135888.00 | 9.8306464 | 9.9638275  |
| 38     | 67730.41 | 92062.14 | 135924.38 | 9.8307837 | 9.9640811  |
| 39     | 67751.81 | 92115.90 | 135960.80 | 9.8309209 | 9.9643346  |
| 40     | 67773.20 | 92169.68 | 135997.25 | 9.8310580 | 9.9645881  |
| 41     | 67794.59 | 92223.50 | 136033.72 | 9.8311950 | 9.9648416  |
| 42     | 67815.97 | 92277.34 | 136070.23 | 9.8313320 | 9.9650951  |
| 43     | 67837.34 | 92331.22 | 136106.77 | 9.8314688 | 9.9653486  |
| 44     | 67858.71 | 92385.12 | 136143.34 | 9.8316056 | 9.9656020  |
| 45     | 67880.07 | 92439.05 | 136179.95 | 9.8317423 | 9.9658555  |
| 46     | 67901.43 | 92493.01 | 136216.58 | 9.8318789 | 9.9661089  |
| 47     | 67922.78 | 92547.00 | 136253.24 | 9.8320155 | 9.9663623  |
| 48     | 67944.13 | 92601.01 | 136289.94 | 9.8321519 | 9.9666157  |
| 49     | 67965.47 | 92655.06 | 136326.67 | 9.8322883 | 9.9668692  |
| 50     | 67986.81 | 92709.14 | 136363.43 | 9.8324246 | 9.9671225  |
| 51     | 68008.14 | 92763.24 | 136400.22 | 9.8325609 | 9.9673759  |
| 52     | 68029.46 | 92817.38 | 136437.04 | 9.8326970 | 9.9676293  |
| 53     | 68050.78 | 92871.54 | 136473.89 | 9.8328331 | 9.9678827  |
| 54     | 68072.09 | 92925.73 | 136510.78 | 9.8329691 | 9.9681360  |
| 55     | 68093.39 | 92979.96 | 136547.70 | 9.8331050 | 9.9683893  |
| 56     | 68114.69 | 93034.21 | 136584.64 | 9.8332408 | 9.9686427  |
| 57     | 68135.99 | 93088.49 | 136621.62 | 9.8333766 | 9.9688960  |
| 58     | 68157.28 | 93142.80 | 136658.63 | 9.8335122 | 9.9691493  |
| 59     | 68178.56 | 93197.14 | 136695.67 | 9.8336478 | 9.9694026  |
| 60     | 68199.84 | 93251.51 | 136732.75 | 9.8337833 | 9.9696559  |

# 47 Grad.

| Minus | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|-------|----------|-----------|-----------|-----------|------------|
| 30    | 73727.73 | 109130.85 | 148018.72 | 9.8676309 | 10.0379475 |
| 29    | 73708.08 | 109067.14 | 147971.76 | 9.8675151 | 10.0376939 |
| 28    | 73688.42 | 109003.47 | 147924.83 | 9.8673992 | 10.0374403 |
| 27    | 73688.75 | 108939.83 | 147877.95 | 9.8672833 | 10.0371867 |
| 26    | 73649.07 | 108876.24 | 147831.11 | 9.8671673 | 10.0369331 |
| 25    | 73629.39 | 108812.69 | 147784.31 | 9.8670512 | 10.0366796 |
| 24    | 73609.71 | 108749.18 | 147737.55 | 9.8669351 | 10.0364260 |
| 23    | 73590.02 | 108685.71 | 147690.84 | 9.8668189 | 10.0361725 |
| 22    | 73570.32 | 108622.28 | 147644.17 | 9.8667026 | 10.0359189 |
| 21    | 73550.61 | 108558.89 | 147597.54 | 9.8665863 | 10.0356654 |
| 20    | 73530.90 | 108495.54 | 147550.95 | 9.8664699 | 10.0354119 |
| 19    | 73511.18 | 108432.23 | 147504.40 | 9.8663534 | 10.0351584 |
| 18    | 73491.46 | 108368.96 | 147457.90 | 9.8662369 | 10.0349049 |
| 17    | 73471.73 | 108305.73 | 147411.44 | 9.8661203 | 10.0346514 |
| 16    | 73451.99 | 108242.54 | 147365.01 | 9.8660036 | 10.0343980 |
| 15    | 73432.25 | 108179.39 | 147318.64 | 9.8658868 | 10.0341445 |
| 14    | 73412.50 | 108116.28 | 147272.30 | 9.8657700 | 10.0338911 |
| 13    | 73392.75 | 108053.21 | 147226.00 | 9.8656531 | 10.0336377 |
| 12    | 73372.99 | 107990.18 | 147179.75 | 9.8655362 | 10.0333843 |
| 11    | 73353.22 | 107927.18 | 147133.53 | 9.8654192 | 10.0331308 |
| 10    | 73333.45 | 107864.23 | 147087.36 | 9.8653021 | 10.0328775 |
| 9     | 73313.67 | 107801.32 | 147041.23 | 9.8651849 | 10.0326241 |
| 8     | 73293.88 | 107738.44 | 146995.14 | 9.8650677 | 10.0323707 |
| 7     | 73274.09 | 107675.61 | 146949.10 | 9.8649504 | 10.0321173 |
| 6     | 73254.29 | 107612.82 | 146903.09 | 9.8648331 | 10.0318640 |
| 5     | 73234.48 | 107550.06 | 146857.13 | 9.8647156 | 10.0316107 |
| 4     | 73214.67 | 107487.34 | 146811.20 | 9.8645981 | 10.0313573 |
| 3     | 73194.85 | 107424.67 | 146765.32 | 9.8644806 | 10.0311040 |
| 2     | 73175.03 | 107361.03 | 146719.48 | 9.8643629 | 10.0308507 |
| 1     | 73155.20 | 107299.43 | 146673.68 | 9.8642452 | 10.0305974 |
| 0     | 73135.37 | 107236.87 | 146627.92 | 9.8641275 | 10.0303441 |

## 43 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 68199.84 | 93251.51 | 136732.75 | 9.8337833 | 9.9696559  |
| 1      | 68221.11 | 93305.91 | 136769.85 | 9.8339188 | 9.9699091  |
| 2      | 68242.37 | 93360.34 | 136806.99 | 9.8340541 | 9.9701624  |
| 3      | 68263.63 | 93414.79 | 136844.16 | 9.8341894 | 9.9704157  |
| 4      | 68284.88 | 93469.28 | 136881.36 | 9.8343246 | 9.9706689  |
| 5      | 68306.13 | 93523.80 | 136918.59 | 9.8344597 | 9.9709221  |
| 6      | 68327.37 | 93578.34 | 136955.86 | 9.8345948 | 9.9711754  |
| 7      | 68348.61 | 93632.92 | 136993.15 | 9.8347297 | 9.9714286  |
| 8      | 68369.84 | 93687.53 | 137030.48 | 9.8348646 | 9.9716818  |
| 9      | 68391.07 | 93742.16 | 137067.84 | 9.8349994 | 9.9719350  |
| 10     | 68412.29 | 93796.83 | 137105.23 | 9.8351341 | 9.9721882  |
| 11     | 68433.50 | 93851.52 | 137142.66 | 9.8352688 | 9.9724413  |
| 12     | 68454.71 | 93906.25 | 137180.11 | 9.8354033 | 9.9726945  |
| 13     | 68475.91 | 93961.01 | 137217.60 | 9.8355378 | 9.9729477  |
| 14     | 68497.11 | 94015.79 | 137255.12 | 9.8356722 | 9.9732008  |
| 15     | 68518.30 | 94070.61 | 137292.68 | 9.8358066 | 9.9734539  |
| 16     | 68539.48 | 94125.45 | 137330.26 | 9.8359408 | 9.9737071  |
| 17     | 68560.66 | 94180.33 | 137367.88 | 9.8360750 | 9.9739602  |
| 18     | 68581.83 | 94235.23 | 137405.53 | 9.8362091 | 9.9742133  |
| 19     | 68603.00 | 94290.17 | 137443.21 | 9.8363431 | 9.9744664  |
| 20     | 68624.16 | 94345.13 | 137480.92 | 9.8364771 | 9.9747195  |
| 21     | 68645.32 | 94400.13 | 137518.67 | 9.8366109 | 9.9749726  |
| 22     | 68666.47 | 94455.16 | 137556.45 | 9.8367447 | 9.9752257  |
| 23     | 68687.61 | 94510.21 | 137594.26 | 9.8368784 | 9.9754787  |
| 24     | 68708.75 | 94565.30 | 137632.10 | 9.8370121 | 9.9757318  |
| 25     | 68729.88 | 94620.42 | 137669.98 | 9.8371456 | 9.9759849  |
| 26     | 68751.01 | 94675.56 | 137707.89 | 9.8372791 | 9.9762379  |
| 27     | 68772.13 | 94730.74 | 137745.83 | 9.8374125 | 9.9764909  |
| 28     | 68793.24 | 94785.95 | 137783.80 | 9.8375458 | 9.9767440  |
| 29     | 68814.35 | 94841.19 | 137821.81 | 9.8376790 | 9.9769970  |
| 30     | 68835.45 | 94896.46 | 137859.85 | 9.8378122 | 9.9772500  |

## 46 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 73135.37 | 107236.87 | 146627.92 | 9.8641275 | 10.0303441 |
| 59     | 73115.53 | 107174.35 | 146582.20 | 9.8640096 | 10.0300909 |
| 58     | 73095.68 | 107111.87 | 146536.52 | 9.8638917 | 10.0298376 |
| 57     | 73075.83 | 107049.43 | 146490.88 | 9.8637737 | 10.0295843 |
| 56     | 73055.97 | 106987.02 | 146445.29 | 9.8636557 | 10.0293311 |
| 55     | 73036.10 | 106924.66 | 146399.73 | 9.8635376 | 10.0290779 |
| 54     | 73016.23 | 106862.33 | 146354.22 | 9.8634194 | 10.0288246 |
| 53     | 72996.35 | 106800.04 | 146308.75 | 9.8633011 | 10.0285714 |
| 52     | 72976.46 | 106737.79 | 146263.31 | 9.8631828 | 10.0283182 |
| 51     | 72956.57 | 106675.58 | 146217.92 | 9.8630644 | 10.0280650 |
| 50     | 72936.67 | 106613.41 | 146172.57 | 9.8629460 | 10.0278118 |
| 49     | 72916.77 | 106551.28 | 146127.26 | 9.8628274 | 10.0275587 |
| 48     | 72896.86 | 106489.18 | 146081.98 | 9.8627088 | 10.0273055 |
| 47     | 72876.94 | 106427.13 | 146036.75 | 9.8625902 | 10.0270523 |
| 46     | 72857.02 | 106365.11 | 145991.56 | 9.8624714 | 10.0267992 |
| 45     | 72837.09 | 106303.13 | 145946.41 | 9.8623526 | 10.0265461 |
| 44     | 72817.16 | 106241.19 | 145901.30 | 9.8622338 | 10.0262929 |
| 43     | 72797.22 | 106179.29 | 145856.23 | 9.8621148 | 10.0260398 |
| 42     | 72777.27 | 106117.42 | 145811.20 | 9.8619958 | 10.0257867 |
| 41     | 72757.32 | 106055.60 | 145766.21 | 9.8618767 | 10.0255336 |
| 40     | 72737.36 | 105993.81 | 145721.27 | 9.8617576 | 10.0252805 |
| 39     | 72717.40 | 105932.06 | 145676.36 | 9.8616383 | 10.0250274 |
| 38     | 72697.43 | 105870.34 | 145631.49 | 9.8615190 | 10.0247743 |
| 37     | 72677.45 | 105808.67 | 145586.66 | 9.8613997 | 10.0245213 |
| 36     | 72657.47 | 105747.03 | 145541.87 | 9.8612803 | 10.0242682 |
| 35     | 72637.48 | 105685.44 | 145497.12 | 9.8611608 | 10.0240151 |
| 34     | 72617.48 | 105623.88 | 145452.41 | 9.8610412 | 10.0237621 |
| 33     | 72597.48 | 105562.35 | 145407.74 | 9.8609215 | 10.0235091 |
| 32     | 72577.47 | 105500.87 | 145363.11 | 9.8608018 | 10.0232560 |
| 31     | 72557.46 | 105439.42 | 145318.52 | 9.8606821 | 10.0230030 |
| 30     | 72537.44 | 105378.01 | 145273.97 | 9.8605622 | 10.0227500 |

# 43 Grad.

| Minut. | Sinus    | Tang.    | Secant    | Log Sin.  | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 30     | 68835.45 | 94896.06 | 137859.85 | 9.8378122 | 9.9772500  |
| 31     | 68856.55 | 94951.76 | 137897.92 | 9.8379453 | 9.9775030  |
| 32     | 68877.64 | 95007.09 | 137936.02 | 9.8380783 | 9.9777560  |
| 33     | 68898.73 | 95062.45 | 137974.16 | 9.8382112 | 9.9780090  |
| 34     | 68919.81 | 95117.84 | 138012.33 | 9.8383441 | 9.9782620  |
| 35     | 68940.89 | 95173.26 | 138050.53 | 9.8384769 | 9.9785149  |
| 36     | 68961.96 | 95228.71 | 138088.77 | 9.5386096 | 9.9787679  |
| 37     | 68983.02 | 95284.20 | 138127.04 | 9.8387422 | 9.9790209  |
| 38     | 69004.07 | 95339.71 | 138165.34 | 9.8388747 | 9.9792738  |
| 39     | 69025.12 | 95395.26 | 138203.67 | 9.8390072 | 9.9795268  |
| 40     | 69046.17 | 95450.83 | 138242.04 | 9.8391396 | 9.9797797  |
| 41     | 69067.21 | 95506.44 | 138280.44 | 9.8392719 | 9.9800326  |
| 42     | 69088.24 | 95562.08 | 138318.87 | 9.8394041 | 9.9802856  |
| 43     | 69109.27 | 95617.74 | 138357.34 | 9.8395363 | 9.9805385  |
| 44     | 69130.29 | 95673.44 | 138395.84 | 9.8396684 | 9.9807914  |
| 45     | 69151.31 | 95729.17 | 138434.37 | 9.8398004 | 9.9810443  |
| 46     | 69172.32 | 95784.94 | 138472.94 | 9.8399323 | 9.9812972  |
| 47     | 69193.32 | 95840.73 | 138511.54 | 9.8400642 | 9.9815501  |
| 48     | 69214.32 | 95896.55 | 138550.37 | 9.8401959 | 9.9818030  |
| 49     | 69235.31 | 95952.41 | 138588.83 | 9.8403276 | 9.9820559  |
| 50     | 69256.30 | 96008.29 | 138627.53 | 9.8404593 | 9.9823087  |
| 51     | 69277.28 | 96064.21 | 138666.26 | 9.8405908 | 9.9825616  |
| 52     | 69298.25 | 96120.16 | 138705.03 | 9.8407223 | 9.9828145  |
| 53     | 69319.22 | 96176.14 | 138743.83 | 9.8408537 | 9.9830673  |
| 54     | 69340.18 | 96232.15 | 138782.66 | 9.8409850 | 9.9833202  |
| 55     | 69361.14 | 96288.19 | 138821.53 | 9.8411162 | 9.9835730  |
| 56     | 69382.09 | 96344.27 | 138860.42 | 9.8412474 | 9.9838259  |
| 57     | 69403.04 | 96400.37 | 138899.36 | 9.8413785 | 9.9840787  |
| 58     | 69423.98 | 96456.51 | 138938.32 | 9.8415095 | 9.9843315  |
| 59     | 69444.91 | 96512.68 | 138977.32 | 9.8416404 | 9.9845844  |
| 60     | 69465.84 | 96568.88 | 139016.36 | 9.8417713 | 9.9848372  |

# 46 Grad.

| Minut. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 30     | 72537.44 | 105378.01 | 145273.94 | 9.8605622 | 10.0227500 |
| 29     | 72517.41 | 105316.64 | 145229.46 | 9.8604423 | 10.0224970 |
| 28     | 72497.38 | 105255.31 | 145184.98 | 9.8603223 | 10.0222440 |
| 27     | 72477.34 | 105194.01 | 145140.55 | 9.8602022 | 10.0219910 |
| 26     | 72457.29 | 105132.75 | 145096.16 | 9.8600821 | 10.0217380 |
| 25     | 72437.24 | 105071.73 | 145051.81 | 9.8599619 | 10.0214851 |
| 24     | 72417.18 | 105010.34 | 145007.49 | 9.8598416 | 10.0212321 |
| 23     | 72397.12 | 104949.20 | 144963.22 | 9.8597213 | 10.0209791 |
| 22     | 72377.05 | 104888.09 | 144918.98 | 9.8596009 | 10.0207262 |
| 21     | 72356.98 | 104827.02 | 144874.78 | 9.8594804 | 10.0204732 |
| 20     | 72336.90 | 104765.98 | 144830.63 | 9.8593599 | 10.0202203 |
| 19     | 72316.81 | 104704.98 | 144786.51 | 9.8592393 | 10.0199674 |
| 18     | 72296.71 | 104644.02 | 144742.43 | 9.8591186 | 10.0197144 |
| 17     | 72276.61 | 104583.10 | 144698.39 | 9.8589978 | 10.0194615 |
| 16     | 72256.51 | 104522.21 | 144654.39 | 9.8588770 | 10.0192086 |
| 15     | 72236.40 | 104461.36 | 144610.43 | 9.8587561 | 10.0189557 |
| 14     | 72216.28 | 104400.55 | 144566.51 | 9.8586351 | 10.0187028 |
| 13     | 72196.15 | 104339.77 | 144522.62 | 9.8585141 | 10.0184499 |
| 12     | 72176.02 | 104279.04 | 144478.78 | 9.8583929 | 10.0181970 |
| 11     | 72155.88 | 104218.33 | 144434.97 | 9.8582718 | 10.0179441 |
| 10     | 72135.74 | 104157.67 | 144391.20 | 9.8581505 | 10.0176913 |
| 9      | 72115.59 | 104097.04 | 144347.48 | 9.8580292 | 10.0174384 |
| 8      | 72095.44 | 104036.45 | 144303.79 | 9.8579078 | 10.0171855 |
| 7      | 72075.28 | 103975.89 | 144260.13 | 9.8577863 | 10.0169327 |
| 6      | 72055.11 | 103915.37 | 144216.52 | 9.8576648 | 10.0166798 |
| 5      | 72034.94 | 103854.89 | 144172.95 | 9.8575432 | 10.0164270 |
| 4      | 72014.76 | 103794.45 | 144129.41 | 9.8574215 | 10.0161741 |
| 3      | 71994.57 | 103734.04 | 144085.91 | 9.8572998 | 10.0159213 |
| 2      | 71974.38 | 103673.67 | 144042.46 | 9.8571779 | 10.0156685 |
| 1      | 71954.18 | 103613.33 | 143999.04 | 9.8570561 | 10.0154156 |
| 0      | 71933.98 | 103553.03 | 143955.65 | 9.8569341 | 10.0151628 |

## 44 Grad.

| Minut. | Sinus    | Tang.    | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|----------|-----------|-----------|------------|
| 0      | 69465.84 | 96568.88 | 139016.36 | 9.8417713 | 9.9848372  |
| 1      | 69486.76 | 96625.11 | 139055.43 | 9.8419021 | 9.9850900  |
| 2      | 69507.67 | 96681.37 | 139094.53 | 9.8420328 | 9.9853428  |
| 3      | 69528.58 | 96737.67 | 139133.66 | 9.8421634 | 9.9855956  |
| 4      | 69549.49 | 96794.00 | 139172.83 | 9.8422939 | 9.9858484  |
| 5      | 69570.39 | 96850.35 | 139212.03 | 9.8424244 | 9.9861012  |
| 6      | 69591.28 | 96906.74 | 139251.27 | 9.8425548 | 9.9863540  |
| 7      | 69612.17 | 96963.16 | 139290.54 | 9.8426851 | 9.9866068  |
| 8      | 69633.05 | 97019.62 | 139329.85 | 9.8428154 | 9.9868596  |
| 9      | 69653.92 | 97076.10 | 139369.18 | 9.8429456 | 9.9871123  |
| 10     | 69674.79 | 97132.62 | 139408.56 | 9.8430757 | 9.9873651  |
| 11     | 69695.65 | 97189.17 | 139447.96 | 9.8432057 | 9.9876179  |
| 12     | 69716.51 | 97245.75 | 139487.40 | 9.8433356 | 9.9878706  |
| 13     | 69737.36 | 97302.36 | 139526.88 | 9.8434655 | 9.9881234  |
| 14     | 69758.21 | 97359.01 | 139566.39 | 9.8435953 | 9.9883761  |
| 15     | 69779.05 | 97415.69 | 139605.93 | 9.8437250 | 9.9886289  |
| 16     | 69799.88 | 97472.40 | 139645.51 | 9.8438547 | 9.9888816  |
| 17     | 69820.71 | 97529.14 | 139685.12 | 9.8439842 | 9.9891344  |
| 18     | 69841.53 | 97585.91 | 139724.77 | 9.8441137 | 9.9893871  |
| 19     | 69862.34 | 97642.72 | 139764.45 | 9.8442432 | 9.9896399  |
| 20     | 69883.15 | 97699.56 | 139804.16 | 9.8443725 | 9.9898926  |
| 21     | 69903.96 | 97756.43 | 139843.91 | 9.8445018 | 9.9901453  |
| 22     | 69924.76 | 97813.33 | 139883.69 | 9.8447601 | 9.9903981  |
| 23     | 69945.55 | 97870.27 | 139923.51 | 9.8447601 | 9.9906908  |
| 24     | 69966.33 | 97927.24 | 139963.36 | 9.8448891 | 9.9909035  |
| 25     | 79987.11 | 97984.24 | 140003.25 | 9.8450181 | 9.9911562  |
| 26     | 70007.89 | 98041.27 | 140043.17 | 9.8451470 | 9.9914089  |
| 27     | 70028.66 | 98098.33 | 140083.13 | 9.8452758 | 9.9916616  |
| 28     | 70049.42 | 98155.43 | 140123.12 | 9.8454045 | 9.9919143  |
| 29     | 70070.18 | 98212.56 | 140163.15 | 9.8455332 | 9.9921670  |
| 30     | 70090.93 | 98269.73 | 140203.21 | 9.8456618 | 9.9924197  |

## 45 Grad.

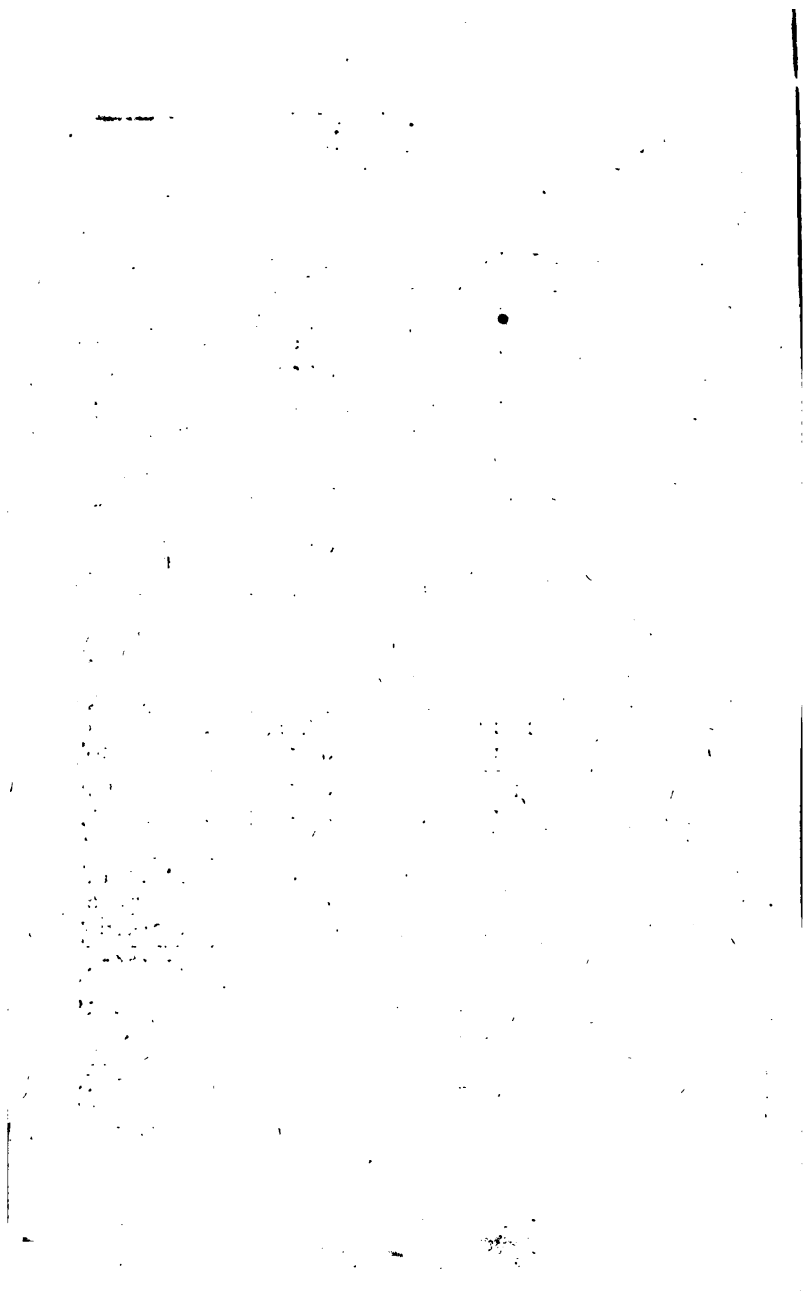
| Minuti | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|--------|----------|-----------|-----------|-----------|------------|
| 60     | 71933.98 | 103553.03 | 143955.65 | 9.8569341 | 10.0151628 |
| 59     | 71913.77 | 103492.77 | 143912.31 | 9.8568121 | 10.0149100 |
| 58     | 71893.55 | 103432.54 | 143869.00 | 9.8566900 | 10.0146572 |
| 57     | 71873.33 | 103372.35 | 143825.74 | 9.8565678 | 10.0144044 |
| 56     | 71853.10 | 103312.20 | 143782.51 | 9.8564455 | 10.0141516 |
| 55     | 71832.87 | 103252.08 | 143739.32 | 9.8563232 | 10.0138988 |
| 54     | 71812.63 | 103191.99 | 143696.16 | 9.8562008 | 10.0136460 |
| 53     | 71792.38 | 103131.95 | 143653.05 | 9.8560784 | 10.0133932 |
| 52     | 71772.13 | 103071.94 | 143609.97 | 9.8559558 | 10.0131404 |
| 51     | 71751.87 | 103011.96 | 143566.93 | 9.8558332 | 10.0128877 |
| 50     | 71731.61 | 102952.03 | 143523.93 | 9.8557106 | 10.0126349 |
| 49     | 71711.34 | 102892.12 | 143480.97 | 9.8555878 | 10.0123821 |
| 48     | 71691.06 | 102832.26 | 143438.05 | 9.8554650 | 10.0121294 |
| 47     | 71670.78 | 102772.43 | 143395.16 | 9.8553421 | 10.0118766 |
| 46     | 71650.49 | 102712.63 | 143352.31 | 9.8552192 | 10.0116239 |
| 45     | 71630.19 | 102652.87 | 143309.50 | 9.8550961 | 10.0113711 |
| 44     | 71609.89 | 102593.15 | 143266.72 | 9.8549730 | 10.0111184 |
| 43     | 71589.58 | 102533.46 | 143223.99 | 9.8548499 | 10.0108656 |
| 42     | 71569.27 | 102473.81 | 143181.29 | 9.8547266 | 10.0106129 |
| 41     | 71548.95 | 102414.19 | 143138.63 | 9.8546033 | 10.0103601 |
| 40     | 71528.63 | 102354.61 | 143096.00 | 9.8544799 | 10.0101074 |
| 39     | 71508.30 | 102295.06 | 143053.42 | 9.8543564 | 10.0098547 |
| 38     | 71487.96 | 102235.55 | 143010.87 | 9.8542329 | 10.0096019 |
| 37     | 71467.62 | 102176.08 | 142968.36 | 9.8541093 | 10.0093492 |
| 36     | 71447.27 | 102116.64 | 142925.88 | 9.8539856 | 10.0090965 |
| 35     | 71426.91 | 102057.23 | 142883.44 | 9.8538619 | 10.0088438 |
| 34     | 71406.55 | 101997.86 | 142841.04 | 9.8537381 | 10.0085911 |
| 33     | 71386.18 | 101938.53 | 142798.68 | 9.8536142 | 10.0083384 |
| 32     | 71365.81 | 101879.23 | 142756.36 | 9.8534902 | 10.0080857 |
| 31     | 71345.43 | 101819.97 | 142714.07 | 9.8533662 | 10.0078330 |
| 30     | 71325.05 | 101760.74 | 142671.82 | 9.8532421 | 10.0075803 |



| Minute | 44 Grad. |           |           |           |            |
|--------|----------|-----------|-----------|-----------|------------|
|        | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
| 30     | 70090.93 | 98269.73  | 140203.21 | 9.8456618 | 9.9924197  |
| 31     | 70111.67 | 98326.92  | 140243.30 | 9.8457903 | 9.9926724  |
| 32     | 70132.41 | 98384.15  | 140283.43 | 9.8459188 | 9.9929251  |
| 33     | 70153.14 | 98441.41  | 140323.60 | 9.8460471 | 9.9931778  |
| 34     | 70173.87 | 98498.71  | 140363.80 | 9.8461754 | 9.9934305  |
| 35     | 70194.59 | 98556.03  | 140404.03 | 9.8463036 | 9.9936832  |
| 36     | 70215.30 | 98613.39  | 140444.30 | 9.8464318 | 9.9939359  |
| 37     | 70236.01 | 98670.79  | 140484.60 | 9.8465599 | 9.9941886  |
| 38     | 70256.71 | 98728.21  | 140524.94 | 9.8466879 | 9.9944413  |
| 39     | 70277.41 | 98785.67  | 140565.32 | 9.8468158 | 9.9946940  |
| 40     | 70298.10 | 98843.16  | 140605.73 | 9.8469436 | 9.9949466  |
| 41     | 70318.79 | 98900.69  | 140646.17 | 9.8470714 | 9.9951993  |
| 42     | 70339.47 | 98958.25  | 140686.65 | 9.8471991 | 9.9954520  |
| 43     | 70360.14 | 99015.84  | 140727.17 | 9.8473267 | 9.9957047  |
| 44     | 70380.81 | 99073.46  | 140767.72 | 9.8474543 | 9.9959573  |
| 45     | 70401.47 | 99131.12  | 140808.31 | 9.8475817 | 9.9962100  |
| 46     | 70422.13 | 99188.81  | 140848.93 | 9.8477091 | 9.9964627  |
| 47     | 70442.78 | 99246.54  | 140889.58 | 9.8478365 | 9.9967154  |
| 48     | 70463.42 | 99304.29  | 140930.28 | 9.8479637 | 9.9969680  |
| 49     | 70484.06 | 99362.08  | 140971.00 | 9.8480909 | 9.9972207  |
| 50     | 70504.69 | 99419.91  | 141011.77 | 9.8482180 | 9.9974734  |
| 51     | 70525.32 | 99477.77  | 141052.56 | 9.8483450 | 9.9977260  |
| 52     | 70545.94 | 99535.66  | 141093.40 | 9.8484720 | 9.9979787  |
| 53     | 70566.55 | 99593.58  | 141134.27 | 9.8485989 | 9.9982314  |
| 54     | 70587.16 | 99651.54  | 141175.17 | 9.8487257 | 9.9984840  |
| 55     | 70607.76 | 99709.53  | 141216.11 | 9.8488524 | 9.9987367  |
| 56     | 70628.35 | 99767.56  | 141257.09 | 9.8489791 | 9.9989893  |
| 57     | 70648.94 | 99825.62  | 141298.10 | 9.8491057 | 9.9992420  |
| 58     | 70669.53 | 99883.71  | 141339.15 | 9.8492322 | 9.9994947  |
| 59     | 70690.11 | 99941.84  | 141380.24 | 9.8493586 | 9.9997473  |
| 60     | 70710.68 | 100000.00 | 141421.36 | 9.8494850 | 10.0000000 |

# 45 Grad.

| Minute. | Sinus    | Tang.     | Secant.   | Log. Sin. | Log. Tang. |
|---------|----------|-----------|-----------|-----------|------------|
| 30      | 71325.05 | 101760.74 | 142671.82 | 9.8532421 | 10.0075803 |
| 29      | 71304.66 | 101701.55 | 142629.61 | 9.8531179 | 10.0073276 |
| 28      | 71284.26 | 101642.39 | 142587.43 | 9.8529936 | 10.0070749 |
| 27      | 71263.85 | 101583.26 | 142545.29 | 9.8528693 | 10.0068222 |
| 26      | 71243.44 | 101524.17 | 142503.19 | 9.8527449 | 10.0065695 |
| 25      | 71223.02 | 101465.12 | 142461.12 | 9.8526204 | 10.0063168 |
| 24      | 71202.60 | 101406.10 | 142419.09 | 9.8524959 | 10.0060641 |
| 23      | 71182.17 | 101347.12 | 142377.10 | 9.8523713 | 10.0058114 |
| 22      | 71161.74 | 101288.17 | 142335.14 | 9.8522466 | 10.0055587 |
| 21      | 71141.30 | 101229.25 | 142293.23 | 9.8521218 | 10.0053060 |
| 20      | 71120.86 | 101170.37 | 142251.34 | 9.8519970 | 10.0050534 |
| 19      | 71100.41 | 101111.53 | 142209.50 | 9.8518721 | 10.0048007 |
| 18      | 71079.95 | 101052.72 | 142167.69 | 9.8517471 | 10.0045480 |
| 17      | 71059.48 | 100993.94 | 142125.92 | 9.8516220 | 10.0042953 |
| 16      | 71039.01 | 100935.20 | 142084.18 | 9.8514969 | 10.0040427 |
| 15      | 71018.54 | 100876.49 | 142042.48 | 9.8513717 | 10.0037900 |
| 14      | 70998.06 | 100817.82 | 142000.82 | 9.8512465 | 10.0035373 |
| 13      | 70977.57 | 100759.18 | 141959.19 | 9.8511211 | 10.0032846 |
| 12      | 70957.07 | 100700.58 | 141917.61 | 9.8509957 | 10.0030320 |
| 11      | 70936.57 | 100642.01 | 141876.05 | 9.8508702 | 10.0027793 |
| 10      | 70916.07 | 100583.47 | 141834.54 | 9.8507446 | 10.0025266 |
| 9       | 70895.56 | 100524.97 | 141793.05 | 9.8506190 | 10.0022740 |
| 8       | 70875.04 | 100466.51 | 141751.61 | 9.8504933 | 10.0020213 |
| 7       | 70854.51 | 100408.07 | 141710.20 | 9.8503675 | 10.0017686 |
| 6       | 70833.98 | 100349.68 | 141668.83 | 9.8502417 | 10.0015160 |
| 5       | 70813.45 | 100291.31 | 141627.49 | 9.8501157 | 10.0012633 |
| 4       | 70792.91 | 100232.98 | 141586.19 | 9.8499897 | 10.0010107 |
| 3       | 70772.36 | 100174.69 | 141544.93 | 9.8498637 | 10.0007580 |
| 2       | 70751.80 | 100116.42 | 141503.70 | 9.8497375 | 10.0005053 |
| 1       | 70731.24 | 100058.19 | 141462.51 | 9.8496113 | 10.0002527 |
| 0       | 70710.68 | 100000.00 | 141421.36 | 9.8494850 | 10.0000000 |



**T A B U L A**  
**LOGARITHMORUM**

**P R O**

**NUMERIS NATURALI SERIE**

**CRESCENTIBUS A 1**

**USQUE AD 10000.**

A. I. H. A. T.

THE UNIVERSITY OF CHICAGO

1914

THE UNIVERSITY OF CHICAGO

THE UNIVERSITY OF CHICAGO

THE UNIVERSITY OF CHICAGO

| N. | Logarithb. | N. | Logarithb. | N.  | Logarithb. |
|----|------------|----|------------|-----|------------|
| 1  | 0.0000000  | 34 | 1.5314789  | 67  | 1.8260748  |
| 2  | 0.3010300  | 35 | 1.5440680  | 68  | 1.8325089  |
| 3  | 0.4771212  | 36 | 1.5563025  | 69  | 1.8388491  |
| 4  | 0.6020600  | 37 | 1.5682017  | 70  | 1.8450980  |
| 5  | 0.6989700  | 38 | 1.5797836  | 71  | 1.8512583  |
| 6  | 0.7781512  | 39 | 1.5910646  | 72  | 1.8573325  |
| 7  | 0.8450980  | 40 | 1.6020600  | 73  | 1.8633229  |
| 8  | 0.9030900  | 41 | 1.6127839  | 74  | 1.8692317  |
| 9  | 0.9542425  | 42 | 1.6232493  | 75  | 1.8750613  |
| 10 | 1.0000000  | 43 | 1.6334685  | 76  | 1.8808136  |
| 11 | 1.0413927  | 44 | 1.6434527  | 77  | 1.8864907  |
| 12 | 1.0791812  | 45 | 1.6532125  | 78  | 1.8920946  |
| 13 | 1.1139433  | 46 | 1.6627578  | 79  | 1.8976271  |
| 14 | 1.1461280  | 47 | 1.6720979  | 80  | 1.9030900  |
| 15 | 1.1760913  | 48 | 1.6812412  | 81  | 1.9084850  |
| 16 | 1.2041200  | 49 | 1.6901961  | 82  | 1.9138138  |
| 17 | 1.2304489  | 50 | 1.6989700  | 83  | 1.9190781  |
| 18 | 1.2552725  | 51 | 1.7075702  | 84  | 1.9242793  |
| 19 | 1.2787536  | 52 | 1.7160033  | 85  | 1.9294189  |
| 20 | 1.3010300  | 53 | 1.7242759  | 86  | 1.9344984  |
| 21 | 1.3222193  | 54 | 1.7323938  | 87  | 1.9395192  |
| 22 | 1.3424227  | 55 | 1.7403627  | 88  | 1.9444827  |
| 23 | 1.3617278  | 56 | 1.7481880  | 89  | 1.9493900  |
| 24 | 1.3802112  | 57 | 1.7558748  | 90  | 1.9542425  |
| 25 | 1.3979400  | 58 | 1.7634280  | 91  | 1.9590414  |
| 26 | 1.4149733  | 59 | 1.7708520  | 92  | 1.9637878  |
| 27 | 1.4313638  | 60 | 1.7781512  | 93  | 1.9684829  |
| 28 | 1.4471580  | 61 | 1.7853298  | 94  | 1.9731278  |
| 29 | 1.4623980  | 62 | 1.7923917  | 95  | 1.9777236  |
| 30 | 1.4771212  | 63 | 1.7993405  | 96  | 1.9822712  |
| 31 | 1.4913617  | 64 | 1.8061800  | 97  | 1.9867717  |
| 32 | 1.5051500  | 65 | 1.8129133  | 98  | 1.9912261  |
| 33 | 1.5185139  | 66 | 1.8195439  | 99  | 1.9956352  |
| 34 | 1.5314789  | 67 | 1.8260748  | 100 | 2.0000000  |

| N.  | Logarithm. | N.  | Logarithm. | N.  | Logarithm. |
|-----|------------|-----|------------|-----|------------|
| 101 | 2.0043314  | 134 | 2.1271048  | 167 | 2.2227165  |
| 102 | 2.0086002  | 135 | 2.1303338  | 168 | 2.2253093  |
| 103 | 2.0128372  | 136 | 2.1335389  | 169 | 2.2278867  |
| 104 | 2.0170333  | 137 | 2.1367206  | 170 | 2.2304489  |
| 105 | 2.0211893  | 138 | 2.1398791  | 171 | 2.2329961  |
| 106 | 2.0253059  | 139 | 2.1430148  | 172 | 2.2355284  |
| 107 | 2.0293838  | 140 | 2.1461280  | 173 | 2.2380461  |
| 108 | 2.0334238  | 141 | 2.1492191  | 174 | 2.2405492  |
| 109 | 2.0374265  | 142 | 2.1522883  | 175 | 2.2430380  |
| 110 | 2.0413927  | 143 | 2.1553360  | 176 | 2.2455127  |
| 111 | 2.0453230  | 144 | 2.1583625  | 177 | 2.2479733  |
| 112 | 2.0492180  | 145 | 2.1613680  | 178 | 2.2504200  |
| 113 | 2.0530784  | 146 | 2.1643528  | 179 | 2.2528530  |
| 114 | 2.0569048  | 147 | 2.1673173  | 180 | 2.2552725  |
| 115 | 2.0606978  | 148 | 2.1702617  | 181 | 2.2576786  |
| 116 | 2.0644580  | 149 | 2.1731863  | 182 | 2.2600714  |
| 117 | 2.0681859  | 150 | 2.1760913  | 183 | 2.2624511  |
| 118 | 2.0718820  | 151 | 2.1789769  | 184 | 2.2648178  |
| 119 | 2.0755470  | 152 | 2.1818436  | 185 | 2.2671717  |
| 120 | 2.0791812  | 153 | 2.1846914  | 186 | 2.2695129  |
| 121 | 2.0827854  | 154 | 2.1875207  | 187 | 2.2718416  |
| 122 | 2.0863598  | 155 | 2.1903317  | 188 | 2.2741578  |
| 123 | 2.0899051  | 156 | 2.1931246  | 189 | 2.2764618  |
| 124 | 2.0934217  | 157 | 2.1958996  | 190 | 2.2787536  |
| 125 | 2.0969100  | 158 | 2.1986571  | 191 | 2.2810334  |
| 126 | 2.1003705  | 159 | 2.2013971  | 192 | 2.2833012  |
| 127 | 2.1038037  | 160 | 2.2041200  | 193 | 2.2855573  |
| 128 | 2.1072100  | 161 | 2.2068259  | 194 | 2.2878017  |
| 129 | 2.1105897  | 162 | 2.2095150  | 195 | 2.2900346  |
| 130 | 2.1139433  | 163 | 2.2121876  | 196 | 2.2922561  |
| 131 | 2.1172713  | 164 | 2.2148438  | 197 | 2.2944662  |
| 132 | 2.1205739  | 165 | 2.2174839  | 198 | 2.2966652  |
| 133 | 2.1238516  | 166 | 2.2201081  | 199 | 2.2988531  |
| 134 | 2.1271048  | 167 | 2.2227165  | 200 | 2.3010300  |

| N.  | Logarithh. | N.  | Logarithh. | N.  | Logarithh. |
|-----|------------|-----|------------|-----|------------|
| 201 | 2.3031961  | 234 | 2.3692159  | 267 | 2.4265113  |
| 202 | 2.3053514  | 235 | 2.3710679  | 268 | 2.4281348  |
| 203 | 2.3074960  | 236 | 2.3729120  | 269 | 2.4297523  |
| 204 | 2.3096302  | 237 | 2.3747483  | 270 | 2.4313638  |
| 205 | 2.3117539  | 238 | 2.3765770  | 271 | 2.4329693  |
| 206 | 2.3138672  | 239 | 2.3783979  | 272 | 2.4345689  |
| 207 | 2.3159703  | 240 | 2.3802112  | 273 | 2.4361626  |
| 208 | 2.3180633  | 241 | 2.3820170  | 274 | 2.4377506  |
| 209 | 2.3201463  | 242 | 2.3838154  | 275 | 2.4393327  |
| 210 | 2.3222193  | 243 | 2.3856063  | 276 | 2.4409091  |
| 211 | 2.3242824  | 244 | 2.3873898  | 277 | 2.4424798  |
| 212 | 2.3263359  | 245 | 2.3891661  | 278 | 2.4440448  |
| 213 | 2.3283796  | 246 | 2.3909355  | 279 | 2.4456042  |
| 214 | 2.3304138  | 247 | 2.3926969  | 280 | 2.4471580  |
| 215 | 2.3324385  | 248 | 2.3944517  | 281 | 2.4487063  |
| 216 | 2.3344537  | 249 | 2.3961993  | 282 | 2.4502491  |
| 217 | 2.3364597  | 250 | 2.3979400  | 283 | 2.4517864  |
| 218 | 2.3384565  | 251 | 2.3996737  | 284 | 2.4533183  |
| 219 | 2.3404441  | 252 | 2.4014005  | 285 | 2.4548449  |
| 220 | 2.3424227  | 253 | 2.4031205  | 286 | 2.4563660  |
| 221 | 2.3443923  | 254 | 2.4048337  | 287 | 2.4578819  |
| 222 | 2.3463530  | 255 | 2.4065402  | 288 | 2.4593925  |
| 223 | 2.3483049  | 256 | 2.4082400  | 289 | 2.4608978  |
| 224 | 2.3502480  | 257 | 2.4099331  | 290 | 2.4623980  |
| 225 | 2.3521825  | 258 | 2.4116197  | 291 | 2.4638930  |
| 226 | 2.3541084  | 259 | 2.4132998  | 292 | 2.4653828  |
| 227 | 2.3560259  | 260 | 2.4149733  | 293 | 2.4668676  |
| 228 | 2.3579348  | 261 | 2.4166405  | 294 | 2.4683473  |
| 229 | 2.3598355  | 262 | 2.4183013  | 295 | 2.4698220  |
| 230 | 2.3617278  | 263 | 2.4199557  | 296 | 2.4712917  |
| 231 | 2.3636120  | 264 | 2.4216039  | 297 | 2.4727564  |
| 232 | 2.3654880  | 265 | 2.4232459  | 298 | 2.4742163  |
| 233 | 2.3673559  | 266 | 2.4248816  | 299 | 2.4756712  |
| 234 | 2.3692159  | 267 | 2.4265113  | 300 | 2.4771212  |



| N.  | Logarith. | N.  | Logarith. | N.  | Logarith. |
|-----|-----------|-----|-----------|-----|-----------|
| 301 | 2.4785665 | 334 | 2.5237465 | 367 | 2.5646661 |
| 302 | 2.4800069 | 335 | 2.5250448 | 368 | 2.5658478 |
| 303 | 2.4814426 | 336 | 2.5263393 | 369 | 2.5670264 |
| 304 | 2.4828736 | 337 | 2.5276299 | 370 | 2.5682017 |
| 305 | 2.4842998 | 338 | 2.5289167 | 371 | 2.5693739 |
| 306 | 2.4857214 | 339 | 2.5301997 | 372 | 2.5705429 |
| 307 | 2.4871384 | 340 | 2.5314789 | 373 | 2.5717088 |
| 308 | 2.4885507 | 341 | 2.5327544 | 374 | 2.5728716 |
| 309 | 2.4899585 | 342 | 2.5340261 | 375 | 2.5740313 |
| 310 | 2.4913617 | 343 | 2.5352941 | 376 | 2.5751878 |
| 311 | 2.4927604 | 344 | 2.5365584 | 377 | 2.5763413 |
| 312 | 2.4941546 | 345 | 2.5378191 | 378 | 2.5774918 |
| 313 | 2.4955443 | 346 | 2.5390761 | 379 | 2.5786392 |
| 314 | 2.4969296 | 347 | 2.5403295 | 380 | 2.5797836 |
| 315 | 2.4983105 | 348 | 2.5415792 | 381 | 2.5809250 |
| 316 | 2.4996871 | 349 | 2.5428254 | 382 | 2.5820634 |
| 317 | 2.5010593 | 350 | 2.5440680 | 383 | 2.5831989 |
| 318 | 2.5024271 | 351 | 2.5453071 | 384 | 2.5843312 |
| 319 | 2.5037907 | 352 | 2.5465427 | 385 | 2.5854607 |
| 320 | 2.5051500 | 353 | 2.5477747 | 386 | 2.5865873 |
| 321 | 2.5065050 | 354 | 2.5490033 | 387 | 2.5877110 |
| 322 | 2.5078559 | 355 | 2.5502283 | 388 | 2.5888317 |
| 323 | 2.5092025 | 356 | 2.5514500 | 389 | 2.5899496 |
| 324 | 2.5105450 | 357 | 2.5526682 | 390 | 2.5910646 |
| 325 | 2.5118834 | 358 | 2.5538830 | 391 | 2.5921768 |
| 326 | 2.5132176 | 359 | 2.5550944 | 392 | 2.5932861 |
| 327 | 2.5145477 | 360 | 2.5563025 | 393 | 2.5943925 |
| 328 | 2.5158738 | 361 | 2.5575072 | 394 | 2.5954962 |
| 329 | 2.5171959 | 362 | 2.5587086 | 395 | 2.5965971 |
| 330 | 2.5185139 | 363 | 2.5599066 | 396 | 2.5976952 |
| 331 | 2.5198280 | 364 | 2.5611014 | 397 | 2.5987905 |
| 332 | 2.5211381 | 365 | 2.5622929 | 398 | 2.5998831 |
| 333 | 2.5224442 | 366 | 2.5634811 | 399 | 2.6009729 |
| 334 | 2.5237465 | 367 | 2.5646661 | 400 | 2.6020600 |

| N.  | Logarithm. | N.  | Logarithm. | N.  | Logarithm. |
|-----|------------|-----|------------|-----|------------|
| 401 | 2.6031444  | 434 | 2.6374897  | 467 | 2.6693169  |
| 402 | 2.6042260  | 435 | 2.6384893  | 468 | 2.6702458  |
| 403 | 2.6053050  | 436 | 2.6394865  | 469 | 2.6711728  |
| 404 | 2.6063814  | 437 | 2.6404814  | 470 | 2.6720979  |
| 405 | 2.6074550  | 438 | 2.6414741  | 471 | 2.6730209  |
| 406 | 2.6085260  | 439 | 2.6424645  | 472 | 2.6739420  |
| 407 | 2.6095944  | 440 | 2.6434527  | 473 | 2.6748611  |
| 408 | 2.6106602  | 441 | 2.6444386  | 474 | 2.6757783  |
| 409 | 2.6117233  | 442 | 2.6454223  | 475 | 2.6766936  |
| 410 | 2.6127839  | 443 | 2.6464037  | 476 | 2.6776069  |
| 411 | 2.6138418  | 444 | 2.6473830  | 477 | 2.6785184  |
| 412 | 2.6148972  | 445 | 2.6483600  | 478 | 2.6794279  |
| 413 | 2.6159500  | 446 | 2.6493349  | 479 | 2.6803355  |
| 414 | 2.6170003  | 447 | 2.6503075  | 480 | 2.6812412  |
| 415 | 2.6180481  | 448 | 2.6512780  | 481 | 2.6821451  |
| 416 | 2.6190933  | 449 | 2.6522463  | 482 | 2.6830470  |
| 417 | 2.6201360  | 450 | 2.6532125  | 483 | 2.6839471  |
| 418 | 2.6211763  | 451 | 2.6541765  | 484 | 2.6848454  |
| 419 | 2.6222140  | 452 | 2.6551384  | 485 | 2.6857417  |
| 420 | 2.6232493  | 453 | 2.6560982  | 486 | 2.6866363  |
| 421 | 2.6242821  | 454 | 2.6570558  | 487 | 2.6875290  |
| 422 | 2.6253124  | 455 | 2.6580114  | 488 | 2.6884198  |
| 423 | 2.6263404  | 456 | 2.6589648  | 489 | 2.6893089  |
| 424 | 2.6273659  | 457 | 2.6599162  | 490 | 2.6901961  |
| 425 | 2.6283889  | 458 | 2.6608655  | 491 | 2.6910815  |
| 426 | 2.6294096  | 459 | 2.6618127  | 492 | 2.6919651  |
| 427 | 2.6304279  | 460 | 2.6627578  | 493 | 2.6928469  |
| 428 | 2.6314438  | 461 | 2.6637009  | 494 | 2.6937269  |
| 429 | 2.6324573  | 462 | 2.6646420  | 495 | 2.6946052  |
| 430 | 2.6334685  | 463 | 2.6655810  | 496 | 2.6954817  |
| 431 | 2.6344773  | 464 | 2.6665180  | 497 | 2.6963564  |
| 432 | 2.6354837  | 465 | 2.6674529  | 498 | 2.6972293  |
| 433 | 2.6364879  | 466 | 2.6683859  | 499 | 2.6981005  |
| 434 | 2.6374897  | 467 | 2.6693169  | 500 | 2.6989700  |

| N.  | Logarith. | N.  | Logarith. | N.  | Logarith. |
|-----|-----------|-----|-----------|-----|-----------|
| 501 | 2.6998377 | 534 | 2.7275413 | 567 | 2.7535831 |
| 502 | 2.7007037 | 535 | 2.7283538 | 568 | 2.7543483 |
| 503 | 2.7015680 | 536 | 2.7291648 | 569 | 2.7551123 |
| 504 | 2.7024305 | 537 | 2.7299743 | 570 | 2.7558748 |
| 505 | 2.7032914 | 538 | 2.7307823 | 571 | 2.7566361 |
| 506 | 2.7041505 | 539 | 2.7315888 | 572 | 2.7573960 |
| 507 | 2.7050080 | 540 | 2.7323938 | 573 | 2.7581546 |
| 508 | 2.7058637 | 541 | 2.7331973 | 574 | 2.7589119 |
| 509 | 2.7067178 | 542 | 2.7339993 | 575 | 2.7596678 |
| 510 | 2.7075702 | 543 | 2.7347998 | 576 | 2.7604225 |
| 511 | 2.7084209 | 544 | 2.7355989 | 577 | 2.7611758 |
| 512 | 2.7092700 | 545 | 2.7363965 | 578 | 2.7619278 |
| 513 | 2.7101174 | 546 | 2.7371926 | 579 | 2.7626786 |
| 514 | 2.7109631 | 547 | 2.7379873 | 580 | 2.7634280 |
| 515 | 2.7118072 | 548 | 2.7387806 | 581 | 2.7641761 |
| 516 | 2.7126497 | 549 | 2.7395723 | 582 | 2.7649130 |
| 517 | 2.7134905 | 550 | 2.7403627 | 583 | 2.7656685 |
| 518 | 2.7143298 | 551 | 2.7411516 | 584 | 2.7664128 |
| 519 | 2.7151674 | 552 | 2.7419391 | 585 | 2.7671559 |
| 520 | 2.7160033 | 553 | 2.7427251 | 586 | 2.7678976 |
| 521 | 2.7168377 | 554 | 2.7435098 | 587 | 2.7686381 |
| 522 | 2.7176705 | 555 | 2.7442930 | 588 | 2.7693773 |
| 523 | 2.7185017 | 556 | 2.7450748 | 589 | 2.7701153 |
| 524 | 2.7193313 | 557 | 2.7458552 | 590 | 2.7708520 |
| 525 | 2.7201593 | 558 | 2.7466342 | 591 | 2.7715875 |
| 526 | 2.7209857 | 559 | 2.7474118 | 592 | 2.7723217 |
| 527 | 2.7218106 | 560 | 2.7481880 | 593 | 2.7730547 |
| 528 | 2.7226339 | 561 | 2.7489629 | 594 | 2.7737864 |
| 529 | 2.7234557 | 562 | 2.7497363 | 595 | 2.7745170 |
| 530 | 2.7242759 | 563 | 2.7505084 | 596 | 2.7752463 |
| 531 | 2.7250945 | 564 | 2.7512791 | 597 | 2.7759743 |
| 532 | 2.7259116 | 565 | 2.7520484 | 598 | 2.7767012 |
| 533 | 2.7267272 | 566 | 2.7528164 | 599 | 2.7774268 |
| 534 | 2.7275413 | 567 | 2.7535831 | 600 | 2.7781512 |

| N.  | Logarith. | N.  | Logarith. | N.  | Logarith. |
|-----|-----------|-----|-----------|-----|-----------|
| 601 | 2.7788745 | 634 | 2.8020893 | 667 | 2.8241258 |
| 602 | 2.7795965 | 635 | 2.8027737 | 668 | 2.8247765 |
| 603 | 2.7803173 | 636 | 2.8034571 | 669 | 2.8254261 |
| 604 | 2.7810360 | 637 | 2.8041394 | 670 | 2.8260748 |
| 605 | 2.7817554 | 638 | 2.8048207 | 671 | 2.8267225 |
| 606 | 2.7824726 | 639 | 2.8055009 | 672 | 2.8273693 |
| 607 | 2.7831887 | 640 | 2.8061800 | 673 | 2.8280151 |
| 608 | 2.7839036 | 641 | 2.8068580 | 674 | 2.8286599 |
| 609 | 2.7846173 | 642 | 2.8075350 | 675 | 2.8293038 |
| 610 | 2.7853298 | 643 | 2.8082110 | 676 | 2.8299467 |
| 611 | 2.7860412 | 644 | 2.8088859 | 677 | 2.8305887 |
| 612 | 2.7867514 | 645 | 2.8095597 | 678 | 2.8312297 |
| 613 | 2.7874605 | 646 | 2.8102325 | 679 | 2.8318699 |
| 614 | 2.7881684 | 647 | 2.8109043 | 680 | 2.8325089 |
| 615 | 2.7888751 | 648 | 2.8115750 | 681 | 2.8331471 |
| 616 | 2.7895807 | 649 | 2.8122447 | 682 | 2.8337844 |
| 617 | 2.7902852 | 650 | 2.8129134 | 683 | 2.8344207 |
| 618 | 2.7909885 | 651 | 2.8135810 | 684 | 2.8350561 |
| 619 | 2.7916906 | 652 | 2.8142476 | 685 | 2.8356906 |
| 620 | 2.7923917 | 653 | 2.8149132 | 686 | 2.8363241 |
| 621 | 2.7930916 | 654 | 2.8155777 | 687 | 2.8369567 |
| 622 | 2.7937904 | 655 | 2.8162419 | 688 | 2.8375884 |
| 623 | 2.7944880 | 656 | 2.8169038 | 689 | 2.8382192 |
| 624 | 2.7951846 | 657 | 2.8175654 | 690 | 2.8388491 |
| 625 | 2.7958800 | 658 | 2.8182259 | 691 | 2.8394780 |
| 626 | 2.7965744 | 659 | 2.8188854 | 692 | 2.8401061 |
| 627 | 2.7972675 | 660 | 2.8195439 | 693 | 2.8407332 |
| 628 | 2.7979596 | 661 | 2.8202015 | 694 | 2.8413595 |
| 629 | 2.7986506 | 662 | 2.8208580 | 695 | 2.8419845 |
| 630 | 2.7993405 | 663 | 2.8215135 | 696 | 2.8426092 |
| 631 | 2.8000294 | 664 | 2.8221681 | 697 | 2.8432354 |
| 632 | 2.8007171 | 665 | 2.8228216 | 698 | 2.8438554 |
| 633 | 2.8014037 | 666 | 2.8234742 | 699 | 2.8444772 |
| 634 | 2.8020893 | 667 | 2.8241258 | 700 | 2.8450980 |

| N.  | Logarith. | N.  | Logarith. | N.  | Logarith. |
|-----|-----------|-----|-----------|-----|-----------|
| 701 | 2.8457180 | 734 | 2.8656961 | 767 | 2.8847954 |
| 702 | 2.8463371 | 735 | 2.8662873 | 768 | 2.8853612 |
| 703 | 2.8469553 | 736 | 2.8668778 | 769 | 2.8859263 |
| 704 | 2.8475727 | 737 | 2.8674675 | 770 | 2.8864907 |
| 705 | 2.8481891 | 738 | 2.8680564 | 771 | 2.8870544 |
| 706 | 2.8488047 | 739 | 2.8686444 | 772 | 2.8876173 |
| 707 | 2.8494194 | 740 | 2.8692317 | 773 | 2.8881795 |
| 708 | 2.8500333 | 741 | 2.8698182 | 774 | 2.8887410 |
| 709 | 2.8506462 | 742 | 2.8704039 | 775 | 2.8893017 |
| 710 | 2.8512583 | 743 | 2.8709888 | 776 | 2.8898617 |
| 711 | 2.8518696 | 744 | 2.8715720 | 777 | 2.8904210 |
| 712 | 2.8524800 | 745 | 2.8721563 | 778 | 2.8909796 |
| 713 | 2.8530895 | 746 | 2.8727388 | 779 | 2.8915375 |
| 714 | 2.8536982 | 747 | 2.8733206 | 780 | 2.8920946 |
| 715 | 2.8543060 | 748 | 2.8739016 | 781 | 2.8926510 |
| 716 | 2.8549130 | 749 | 2.8744818 | 782 | 2.8932067 |
| 717 | 2.8555191 | 750 | 2.8750613 | 783 | 2.8937618 |
| 718 | 2.8561244 | 751 | 2.8756399 | 784 | 2.8943161 |
| 719 | 2.8567289 | 752 | 2.8762178 | 785 | 2.8948696 |
| 720 | 2.8573325 | 753 | 2.8767950 | 786 | 2.8954225 |
| 721 | 2.8579353 | 754 | 2.8773713 | 787 | 2.8959747 |
| 722 | 2.8585372 | 755 | 2.8779469 | 788 | 2.8965262 |
| 723 | 2.8591383 | 756 | 2.8785218 | 789 | 2.8970770 |
| 724 | 2.8597386 | 757 | 2.8790959 | 790 | 2.8976271 |
| 725 | 2.8603380 | 758 | 2.8796692 | 791 | 2.8981765 |
| 726 | 2.8609366 | 759 | 2.8802418 | 792 | 2.8987252 |
| 727 | 2.8615344 | 760 | 2.8808136 | 793 | 2.8992732 |
| 728 | 2.8621314 | 761 | 2.8813847 | 794 | 2.8998205 |
| 729 | 2.8627275 | 762 | 2.8819550 | 795 | 2.9003671 |
| 730 | 2.8633229 | 763 | 2.8825245 | 796 | 2.9009131 |
| 731 | 2.8639174 | 764 | 2.8830934 | 797 | 2.9014583 |
| 732 | 2.8645111 | 765 | 2.8836614 | 798 | 2.9020029 |
| 733 | 2.8651040 | 766 | 2.8842288 | 799 | 2.9025468 |
| 734 | 2.8656961 | 767 | 2.8847954 | 800 | 2.9030900 |

| N.  | Logarith. | N.  | Logarith. | N.  | Logarith. |
|-----|-----------|-----|-----------|-----|-----------|
| 801 | 2.9036325 | 834 | 2.9211660 | 867 | 2.9380191 |
| 802 | 2.9041744 | 835 | 2.9216865 | 868 | 2.9385197 |
| 803 | 2.9047155 | 836 | 2.9222063 | 869 | 2.9390198 |
| 804 | 2.9052560 | 837 | 2.9227254 | 870 | 2.9395192 |
| 805 | 2.9057959 | 838 | 2.9232440 | 871 | 2.9400181 |
| 806 | 2.9063350 | 839 | 2.9237620 | 872 | 2.9405165 |
| 807 | 2.9068735 | 840 | 2.9242793 | 873 | 2.9410142 |
| 808 | 2.9074114 | 841 | 2.9247960 | 874 | 2.9415114 |
| 809 | 2.9079485 | 842 | 2.9253121 | 875 | 2.9420080 |
| 810 | 2.9084850 | 843 | 2.9258276 | 876 | 2.9425041 |
| 811 | 2.9090208 | 844 | 2.9263424 | 877 | 2.9429996 |
| 812 | 2.9095560 | 845 | 2.9268567 | 878 | 2.9434945 |
| 813 | 2.9100905 | 846 | 2.9273704 | 879 | 2.9439889 |
| 814 | 2.9106244 | 847 | 2.9278834 | 880 | 2.9444827 |
| 815 | 2.9111576 | 848 | 2.9283958 | 881 | 2.9449759 |
| 816 | 2.9116901 | 849 | 2.9289077 | 882 | 2.9454686 |
| 817 | 2.9122220 | 850 | 2.9294189 | 883 | 2.9459607 |
| 818 | 2.9127533 | 851 | 2.9299296 | 884 | 2.9464523 |
| 819 | 2.9132839 | 852 | 2.9304396 | 885 | 2.9469433 |
| 820 | 2.9138138 | 853 | 2.9309490 | 886 | 2.9474337 |
| 821 | 2.9143431 | 854 | 2.9314579 | 887 | 2.9479236 |
| 822 | 2.9148718 | 855 | 2.9319661 | 888 | 2.9484130 |
| 823 | 2.9153998 | 856 | 2.9324738 | 889 | 2.9489018 |
| 824 | 2.9159272 | 857 | 2.9329808 | 890 | 2.9493900 |
| 825 | 2.9164539 | 858 | 2.9334873 | 891 | 2.9498777 |
| 826 | 2.9169800 | 859 | 2.9339932 | 892 | 2.9503648 |
| 827 | 2.9175055 | 860 | 2.9344984 | 893 | 2.9508514 |
| 828 | 2.9180303 | 861 | 2.9350031 | 894 | 2.9513375 |
| 829 | 2.9185545 | 862 | 2.9355073 | 895 | 2.9518230 |
| 830 | 2.9190781 | 863 | 2.9360108 | 896 | 2.9523080 |
| 831 | 2.9196010 | 864 | 2.9365137 | 897 | 2.9527924 |
| 832 | 2.9201233 | 865 | 2.9370161 | 898 | 2.9532763 |
| 833 | 2.9206450 | 866 | 2.9375179 | 899 | 2.9537597 |
| 834 | 2.9211660 | 867 | 2.9380191 | 900 | 2.9542425 |

| N.  | Logarithb. | N.  | Logarithb. | N.   | Logarithb. |
|-----|------------|-----|------------|------|------------|
| 901 | 2.9547248  | 934 | 2.9703469  | 967  | 2.9854265  |
| 902 | 2.9552065  | 935 | 2.9708116  | 968  | 2.9858753  |
| 903 | 2.9556877  | 936 | 2.9712758  | 969  | 2.9863238  |
| 904 | 2.9561684  | 937 | 2.9717396  | 970  | 2.9867717  |
| 905 | 2.9566486  | 938 | 2.9722028  | 971  | 2.9872192  |
| 906 | 2.9571282  | 939 | 2.9726656  | 972  | 2.9876663  |
| 907 | 2.9576073  | 940 | 2.9731278  | 973  | 2.9881128  |
| 908 | 2.9580858  | 941 | 2.9735896  | 974  | 2.9885589  |
| 909 | 2.9585639  | 942 | 2.9740509  | 975  | 2.9890046  |
| 910 | 2.9590414  | 943 | 2.9745117  | 976  | 2.9894498  |
| 911 | 2.9595184  | 944 | 2.9749720  | 977  | 2.9898946  |
| 912 | 2.9599948  | 945 | 2.9754318  | 978  | 2.9903388  |
| 913 | 2.9604708  | 946 | 2.9758911  | 979  | 2.9907827  |
| 914 | 2.9609462  | 947 | 2.9763500  | 980  | 2.9912261  |
| 915 | 2.9614211  | 948 | 2.9768083  | 981  | 2.9916690  |
| 916 | 2.9618955  | 949 | 2.9772662  | 982  | 2.9921115  |
| 917 | 2.9623693  | 950 | 2.9777236  | 983  | 2.9925535  |
| 918 | 2.9628427  | 951 | 2.9781805  | 984  | 2.9929951  |
| 919 | 2.9633155  | 952 | 2.9786369  | 985  | 2.9934362  |
| 920 | 2.9637878  | 953 | 2.9790929  | 986  | 2.9938769  |
| 921 | 2.9642596  | 954 | 2.9795484  | 987  | 2.9943171  |
| 922 | 2.9647309  | 955 | 2.9800034  | 988  | 2.9947569  |
| 923 | 2.9652017  | 956 | 2.9804579  | 989  | 2.9951963  |
| 924 | 2.9656720  | 957 | 2.9809119  | 990  | 2.9956352  |
| 925 | 2.9661417  | 958 | 2.9813655  | 991  | 2.9960736  |
| 926 | 2.9666110  | 959 | 2.9818186  | 992  | 2.9965117  |
| 927 | 2.9670797  | 960 | 2.9822712  | 993  | 2.9969492  |
| 928 | 2.9675480  | 961 | 2.9827234  | 994  | 2.9973864  |
| 929 | 2.9680157  | 962 | 2.9831751  | 995  | 2.9978231  |
| 930 | 2.9684829  | 963 | 2.9836263  | 996  | 2.9982593  |
| 931 | 2.9689497  | 964 | 2.9840770  | 997  | 2.9986951  |
| 932 | 2.9694159  | 965 | 2.9845273  | 998  | 2.9991305  |
| 933 | 2.9698816  | 966 | 2.9849771  | 999  | 2.9995655  |
| 934 | 2.9703469  | 967 | 2.9854265  | 1000 | 3.0000000  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 1001 | 3.0004341 | 1034 | 3.0145205 | 1067 | 3.0281644 |
| 1002 | 3.0008677 | 1035 | 3.0149403 | 1068 | 3.0285712 |
| 1003 | 3.0013009 | 1036 | 3.0153597 | 1069 | 3.0289777 |
| 1004 | 3.0017337 | 1037 | 3.0157787 | 1070 | 3.0293838 |
| 1005 | 3.0021661 | 1038 | 3.0161973 | 1071 | 3.0297895 |
| 1006 | 3.0025980 | 1039 | 3.0166155 | 1072 | 3.0301948 |
| 1007 | 3.0030295 | 1040 | 3.0170333 | 1073 | 3.0305997 |
| 1008 | 3.0034605 | 1041 | 3.0174507 | 1074 | 3.0310043 |
| 1009 | 3.0038912 | 1042 | 3.0178677 | 1075 | 3.0314085 |
| 1010 | 3.0043214 | 1043 | 3.0182843 | 1076 | 3.0318123 |
| 1011 | 3.0047511 | 1044 | 3.0187005 | 1077 | 3.0322157 |
| 1012 | 3.0051805 | 1045 | 3.0191163 | 1078 | 3.0326188 |
| 1013 | 3.0056094 | 1046 | 3.0195317 | 1079 | 3.0330214 |
| 1014 | 3.0060379 | 1047 | 3.0199467 | 1080 | 3.0334237 |
| 1015 | 3.0064660 | 1048 | 3.0203613 | 1081 | 3.0338257 |
| 1016 | 3.0068937 | 1049 | 3.0207755 | 1082 | 3.0342273 |
| 1017 | 3.0073209 | 1050 | 3.0211893 | 1083 | 3.0346284 |
| 1018 | 3.0077478 | 1051 | 3.0216027 | 1084 | 3.0350293 |
| 1019 | 3.0081742 | 1052 | 3.0220157 | 1085 | 3.0354297 |
| 1020 | 3.0086002 | 1053 | 3.0224284 | 1086 | 3.0358298 |
| 1021 | 3.0090257 | 1054 | 3.0228406 | 1087 | 3.0362295 |
| 1022 | 3.0094509 | 1055 | 3.0232524 | 1088 | 3.0366289 |
| 1023 | 3.0098756 | 1056 | 3.0236639 | 1089 | 3.0370279 |
| 1024 | 3.0102999 | 1057 | 3.0240750 | 1090 | 3.0374265 |
| 1025 | 3.0107239 | 1058 | 3.0244857 | 1091 | 3.0378247 |
| 1026 | 3.0111474 | 1059 | 3.0248960 | 1092 | 3.0382226 |
| 1027 | 3.0115704 | 1060 | 3.0253059 | 1093 | 3.0386201 |
| 1028 | 3.0119931 | 1061 | 3.0257154 | 1094 | 3.0390173 |
| 1029 | 3.0124154 | 1062 | 3.0261245 | 1095 | 3.0394141 |
| 1030 | 3.0128372 | 1063 | 3.0265333 | 1096 | 3.0398105 |
| 1031 | 3.0132587 | 1064 | 3.0269416 | 1097 | 3.0402066 |
| 1032 | 3.0136797 | 1065 | 3.0273496 | 1098 | 3.0406023 |
| 1033 | 3.0141003 | 1066 | 3.0277572 | 1099 | 3.0409977 |
| 1034 | 3.0145205 | 1067 | 3.0281644 | 1100 | 3.0413927 |



| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 1101 | 3.0417873 | 1134 | 3.0546130 | 1167 | 3.0670708 |
| 1102 | 3.0421816 | 1135 | 3.0549958 | 1168 | 3.0674428 |
| 1103 | 3.0425755 | 1136 | 3.0553783 | 1169 | 3.0678145 |
| 1104 | 3.0429691 | 1137 | 3.0557604 | 1170 | 3.0681859 |
| 1105 | 3.0433623 | 1138 | 3.0561423 | 1171 | 3.0685569 |
| 1106 | 3.0437551 | 1139 | 3.0565237 | 1172 | 3.0689276 |
| 1107 | 3.0441476 | 1140 | 3.0569048 | 1173 | 3.0692980 |
| 1108 | 3.0445398 | 1141 | 3.0572856 | 1174 | 3.0696681 |
| 1109 | 3.0449315 | 1142 | 3.0576661 | 1175 | 3.0700379 |
| 1110 | 3.0453230 | 1143 | 3.0580462 | 1176 | 3.0704073 |
| 1111 | 3.0457140 | 1144 | 3.0584260 | 1177 | 3.0707765 |
| 1112 | 3.0461048 | 1145 | 3.0588055 | 1178 | 3.0711453 |
| 1113 | 3.0464952 | 1146 | 3.0591846 | 1179 | 3.0715138 |
| 1114 | 3.0468852 | 1147 | 3.0595634 | 1180 | 3.0718820 |
| 1115 | 3.0472749 | 1148 | 3.0599419 | 1181 | 3.0722499 |
| 1116 | 3.0476642 | 1149 | 3.0603200 | 1182 | 3.0726175 |
| 1117 | 3.0480532 | 1150 | 3.0606978 | 1183 | 3.0729847 |
| 1118 | 3.0484418 | 1151 | 3.0610753 | 1184 | 3.0733517 |
| 1119 | 3.0488301 | 1152 | 3.0614525 | 1185 | 3.0737183 |
| 1120 | 3.0492180 | 1153 | 3.0618293 | 1186 | 3.0740847 |
| 1121 | 3.0496056 | 1154 | 3.0622058 | 1187 | 3.0744507 |
| 1122 | 3.0499928 | 1155 | 3.0625820 | 1188 | 3.0748164 |
| 1123 | 3.0503797 | 1156 | 3.0629578 | 1189 | 3.0751818 |
| 1124 | 3.0507663 | 1157 | 3.0633334 | 1190 | 3.0755470 |
| 1125 | 3.0511525 | 1158 | 3.0637085 | 1191 | 3.0759118 |
| 1126 | 3.0515384 | 1159 | 3.0640834 | 1192 | 3.0762762 |
| 1127 | 3.0519239 | 1160 | 3.0644580 | 1193 | 3.0766404 |
| 1128 | 3.0523091 | 1161 | 3.0648322 | 1194 | 3.0770043 |
| 1129 | 3.0526939 | 1162 | 3.0652061 | 1195 | 3.0773679 |
| 1130 | 3.0530784 | 1163 | 3.0655797 | 1196 | 3.0777312 |
| 1131 | 3.0534626 | 1164 | 3.0659530 | 1197 | 3.0780941 |
| 1132 | 3.0538464 | 1165 | 3.0663259 | 1198 | 3.0784568 |
| 1133 | 3.0542299 | 1166 | 3.0666985 | 1199 | 3.0788192 |
| 1134 | 3.0546130 | 1167 | 3.0670708 | 1200 | 3.0791812 |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 1201 | 3.0795430  | 1234 | 3.0913151  | 1267 | 3.1027766  |
| 1202 | 3.0799045  | 1235 | 3.0916669  | 1268 | 3.1031192  |
| 1203 | 3.0802656  | 1236 | 3.0920185  | 1269 | 3.1034616  |
| 1204 | 3.0806265  | 1237 | 3.0923697  | 1270 | 3.1038037  |
| 1205 | 3.0809870  | 1238 | 3.0927206  | 1271 | 3.1041455  |
| 1206 | 3.0813473  | 1239 | 3.0930713  | 1272 | 3.1044871  |
| 1207 | 3.0817073  | 1240 | 3.0934217  | 1273 | 3.1048284  |
| 1208 | 3.0820669  | 1241 | 3.0937718  | 1274 | 3.1051694  |
| 1209 | 3.0824263  | 1242 | 3.0941216  | 1275 | 3.1055102  |
| 1210 | 3.0827854  | 1243 | 3.0944711  | 1276 | 3.1058507  |
| 1211 | 3.0831441  | 1244 | 3.0948204  | 1277 | 3.1061909  |
| 1212 | 3.0835026  | 1245 | 3.0951693  | 1278 | 3.1065308  |
| 1213 | 3.0838608  | 1246 | 3.0955180  | 1279 | 3.1068705  |
| 1214 | 3.0842187  | 1247 | 3.0958664  | 1280 | 3.1072100  |
| 1215 | 3.0845763  | 1248 | 3.0962146  | 1281 | 3.1075491  |
| 1216 | 3.0849336  | 1249 | 3.0965624  | 1282 | 3.1078880  |
| 1217 | 3.0852906  | 1250 | 3.0969100  | 1283 | 3.1082266  |
| 1218 | 3.0856473  | 1251 | 3.0972573  | 1284 | 3.1085650  |
| 1219 | 3.0860037  | 1252 | 3.0976042  | 1285 | 3.1089031  |
| 1220 | 3.0863598  | 1253 | 3.0979511  | 1286 | 3.1092410  |
| 1221 | 3.0867156  | 1254 | 3.0982975  | 1287 | 3.1095785  |
| 1222 | 3.0870712  | 1255 | 3.0986437  | 1288 | 3.1099159  |
| 1223 | 3.0874264  | 1256 | 3.0989896  | 1289 | 3.1102529  |
| 1224 | 3.0877814  | 1257 | 3.0993353  | 1290 | 3.1105897  |
| 1225 | 3.0881361  | 1258 | 3.0996806  | 1291 | 3.1109262  |
| 1226 | 3.0884905  | 1259 | 3.1000257  | 1292 | 3.1112625  |
| 1227 | 3.0888446  | 1260 | 3.1003705  | 1293 | 3.1115985  |
| 1228 | 3.0891984  | 1261 | 3.1007151  | 1294 | 3.1119343  |
| 1229 | 3.0895519  | 1262 | 3.1010593  | 1295 | 3.1122698  |
| 1230 | 3.0899051  | 1263 | 3.1014033  | 1296 | 3.1126050  |
| 1231 | 3.0902580  | 1264 | 3.1017471  | 1297 | 3.1129400  |
| 1232 | 3.0906107  | 1265 | 3.1020905  | 1298 | 3.1132747  |
| 1233 | 3.0909631  | 1266 | 3.1024337  | 1299 | 3.1136091  |
| 1234 | 3.0913151  | 1267 | 3.1027766  | 1300 | 3.1139433  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 1301 | 3.1142773  | 1334 | 3.1251558  | 1367 | 3.1357685  |
| 1302 | 3.1146110  | 1335 | 3.1254813  | 1368 | 3.1360861  |
| 1303 | 3.1149444  | 1336 | 3.1258064  | 1369 | 3.1364034  |
| 1304 | 3.1152776  | 1337 | 3.1261314  | 1370 | 3.1367206  |
| 1305 | 3.1156105  | 1338 | 3.1264561  | 1371 | 3.1370374  |
| 1306 | 3.1159432  | 1339 | 3.1267806  | 1372 | 3.1373541  |
| 1307 | 3.1162756  | 1340 | 3.1271048  | 1373 | 3.1376705  |
| 1308 | 3.1166077  | 1341 | 3.1274288  | 1374 | 3.1379867  |
| 1309 | 3.1169396  | 1342 | 3.1277525  | 1375 | 3.1383027  |
| 1310 | 3.1172713  | 1343 | 3.1280760  | 1376 | 3.1386184  |
| 1311 | 3.1176027  | 1344 | 3.1283993  | 1377 | 3.1389339  |
| 1312 | 3.1179338  | 1345 | 3.1287223  | 1378 | 3.1392492  |
| 1313 | 3.1182647  | 1346 | 3.1290450  | 1379 | 3.1395643  |
| 1314 | 3.1185954  | 1347 | 3.1293676  | 1380 | 3.1398791  |
| 1315 | 3.1189257  | 1348 | 3.1296899  | 1381 | 3.1401937  |
| 1316 | 3.1192559  | 1349 | 3.1300119  | 1382 | 3.1405080  |
| 1317 | 3.1195858  | 1350 | 3.1303338  | 1383 | 3.1408222  |
| 1318 | 3.1199154  | 1351 | 3.1306553  | 1384 | 3.1411361  |
| 1319 | 3.1202448  | 1352 | 3.1309767  | 1385 | 3.1414498  |
| 1320 | 3.1205739  | 1353 | 3.1312978  | 1386 | 3.1417632  |
| 1321 | 3.1209028  | 1354 | 3.1316187  | 1387 | 3.1420765  |
| 1322 | 3.1212314  | 1355 | 3.1319393  | 1388 | 3.1423895  |
| 1323 | 3.1215598  | 1356 | 3.1322597  | 1389 | 3.1427022  |
| 1324 | 3.1218880  | 1357 | 3.1325798  | 1390 | 3.1430148  |
| 1325 | 3.1222159  | 1358 | 3.1328998  | 1391 | 3.1433271  |
| 1326 | 3.1225435  | 1359 | 3.1332195  | 1392 | 3.1436392  |
| 1327 | 3.1228709  | 1360 | 3.1335389  | 1393 | 3.1439511  |
| 1328 | 3.1231981  | 1361 | 3.1338581  | 1394 | 3.1442628  |
| 1329 | 3.1235250  | 1362 | 3.1341771  | 1395 | 3.1445742  |
| 1330 | 3.1238516  | 1363 | 3.1344958  | 1396 | 3.1448854  |
| 1331 | 3.1241780  | 1364 | 3.1348144  | 1397 | 3.1451964  |
| 1332 | 3.1245042  | 1365 | 3.1351326  | 1398 | 3.1455072  |
| 1333 | 3.1248301  | 1366 | 3.1354507  | 1399 | 3.1458177  |
| 1334 | 3.1251558  | 1367 | 3.1357685  | 1400 | 3.1461280  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 1401 | 3.1464381 | 1434 | 3.1565491 | 1467 | 3.1664301 |
| 1402 | 3.1467480 | 1435 | 3.1568519 | 1468 | 3.1667260 |
| 1403 | 3.1470577 | 1436 | 3.1571544 | 1469 | 3.1670218 |
| 1404 | 3.1473671 | 1437 | 3.1574568 | 1470 | 3.1673173 |
| 1405 | 3.1476763 | 1438 | 3.1577589 | 1471 | 3.1676127 |
| 1406 | 3.1479853 | 1439 | 3.1580608 | 1472 | 3.1679078 |
| 1407 | 3.1482941 | 1440 | 3.1583625 | 1473 | 3.1682027 |
| 1408 | 3.1486026 | 1441 | 3.1586640 | 1474 | 3.1684975 |
| 1409 | 3.1489110 | 1442 | 3.1589653 | 1475 | 3.1687920 |
| 1410 | 3.1492191 | 1443 | 3.1592663 | 1476 | 3.1690863 |
| 1411 | 3.1495270 | 1444 | 3.1595672 | 1477 | 3.1693805 |
| 1412 | 3.1498347 | 1445 | 3.1598678 | 1478 | 3.1696744 |
| 1413 | 3.1501422 | 1446 | 3.1601683 | 1479 | 3.1699682 |
| 1414 | 3.1504494 | 1447 | 3.1604685 | 1480 | 3.1702617 |
| 1415 | 3.1507564 | 1448 | 3.1607686 | 1481 | 3.1705550 |
| 1416 | 3.1510632 | 1449 | 3.1610684 | 1482 | 3.1708482 |
| 1417 | 3.1513698 | 1450 | 3.1613680 | 1483 | 3.1711411 |
| 1418 | 3.1516762 | 1451 | 3.1616674 | 1484 | 3.1714339 |
| 1419 | 3.1519824 | 1452 | 3.1619666 | 1485 | 3.1717264 |
| 1420 | 3.1522883 | 1453 | 3.1622656 | 1486 | 3.1720188 |
| 1421 | 3.1525941 | 1454 | 3.1625644 | 1487 | 3.1723110 |
| 1422 | 3.1528996 | 1455 | 3.1628630 | 1488 | 3.1726029 |
| 1423 | 3.1532049 | 1456 | 3.1631614 | 1489 | 3.1728947 |
| 1424 | 3.1535100 | 1457 | 3.1634595 | 1490 | 3.1731863 |
| 1425 | 3.1538149 | 1458 | 3.1637575 | 1491 | 3.1734776 |
| 1426 | 3.1541195 | 1459 | 3.1640553 | 1492 | 3.1737688 |
| 1427 | 3.1544240 | 1460 | 3.1643528 | 1493 | 3.1740598 |
| 1428 | 3.1547282 | 1461 | 3.1646502 | 1494 | 3.1743506 |
| 1429 | 3.1550322 | 1462 | 3.1649474 | 1495 | 3.1746412 |
| 1430 | 3.1553360 | 1463 | 3.1652443 | 1496 | 3.1749316 |
| 1431 | 3.1556396 | 1464 | 3.1655411 | 1497 | 3.1752218 |
| 1432 | 3.1559430 | 1465 | 3.1658376 | 1498 | 3.1755118 |
| 1433 | 3.1562462 | 1466 | 3.1661340 | 1499 | 3.1758016 |
| 1434 | 3.1565491 | 1467 | 3.1664301 | 1500 | 3.1760913 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 1501 | 3.1763807 | 1534 | 3.1858253 | 1567 | 3.1950690 |
| 1502 | 3.1766699 | 1535 | 3.1861084 | 1568 | 3.1953460 |
| 1503 | 3.1769590 | 1536 | 3.1863912 | 1569 | 3.1956229 |
| 1504 | 3.1772478 | 1537 | 3.1866739 | 1570 | 3.1958996 |
| 1505 | 3.1775365 | 1538 | 3.1869563 | 1571 | 3.1961762 |
| 1506 | 3.1778250 | 1539 | 3.1872386 | 1572 | 3.1964525 |
| 1507 | 3.1781132 | 1540 | 3.1875207 | 1573 | 3.1967287 |
| 1508 | 3.1784013 | 1541 | 3.1878026 | 1574 | 3.1970047 |
| 1509 | 3.1786892 | 1542 | 3.1880844 | 1575 | 3.1972806 |
| 1510 | 3.1789769 | 1543 | 3.1883659 | 1576 | 3.1975562 |
| 1511 | 3.1792645 | 1544 | 3.1886473 | 1577 | 3.1978317 |
| 1512 | 3.1795518 | 1545 | 3.1889285 | 1578 | 3.1981070 |
| 1513 | 3.1798389 | 1546 | 3.1892095 | 1579 | 3.1983821 |
| 1514 | 3.1801259 | 1547 | 3.1894903 | 1580 | 3.1986571 |
| 1515 | 3.1804126 | 1548 | 3.1897709 | 1581 | 3.1989319 |
| 1516 | 3.1806992 | 1549 | 3.1900514 | 1582 | 3.1992065 |
| 1517 | 3.1809856 | 1550 | 3.1903317 | 1583 | 3.1994809 |
| 1518 | 3.1812718 | 1551 | 3.1906118 | 1584 | 3.1997552 |
| 1519 | 3.1815578 | 1552 | 3.1908917 | 1585 | 3.2000293 |
| 1520 | 3.1818436 | 1553 | 3.1911714 | 1586 | 3.2003032 |
| 1521 | 3.1821292 | 1554 | 3.1914510 | 1587 | 3.2005769 |
| 1522 | 3.1824146 | 1555 | 3.1917304 | 1588 | 3.2008505 |
| 1523 | 3.1826999 | 1556 | 3.1920096 | 1589 | 3.2011239 |
| 1524 | 3.1829850 | 1557 | 3.1922886 | 1590 | 3.2013971 |
| 1525 | 3.1832698 | 1558 | 3.1925674 | 1591 | 3.2016702 |
| 1526 | 3.1835545 | 1559 | 3.1928461 | 1592 | 3.2019431 |
| 1527 | 3.1838390 | 1560 | 3.1931246 | 1593 | 3.2022158 |
| 1528 | 3.1841233 | 1561 | 3.1934029 | 1594 | 3.2024883 |
| 1529 | 3.1844075 | 1562 | 3.1936810 | 1595 | 3.2027607 |
| 1530 | 3.1846914 | 1563 | 3.1939590 | 1596 | 3.2030329 |
| 1531 | 3.1849752 | 1564 | 3.1942367 | 1597 | 3.2033049 |
| 1532 | 3.1852588 | 1565 | 3.1945143 | 1598 | 3.2035768 |
| 1533 | 3.1855421 | 1566 | 3.1947917 | 1599 | 3.2038485 |
| 1534 | 3.1858253 | 1567 | 3.1950690 | 1600 | 3.2041200 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 1601 | 3.2043913  | 1634 | 3.2132521  | 1667 | 3.2219356  |
| 1602 | 3.2046625  | 1635 | 3.2135178  | 1668 | 3.2221960  |
| 1603 | 3.2049335  | 1636 | 3.2137833  | 1669 | 3.2224563  |
| 1604 | 3.2052044  | 1637 | 3.2140487  | 1670 | 3.2227165  |
| 1605 | 3.2054750  | 1638 | 3.2143139  | 1671 | 3.2229764  |
| 1606 | 3.2057455  | 1639 | 3.2145789  | 1672 | 3.2232363  |
| 1607 | 3.2060159  | 1640 | 3.2148438  | 1673 | 3.2234959  |
| 1608 | 3.2062860  | 1641 | 3.2151086  | 1674 | 3.2237555  |
| 1609 | 3.2065560  | 1642 | 3.2153732  | 1675 | 3.2240148  |
| 1610 | 3.2068259  | 1643 | 3.2156376  | 1676 | 3.2242740  |
| 1611 | 3.2070955  | 1644 | 3.2159018  | 1677 | 3.2245331  |
| 1612 | 3.2073650  | 1645 | 3.2161659  | 1678 | 3.2247920  |
| 1613 | 3.2076344  | 1646 | 3.2164298  | 1679 | 3.2250507  |
| 1614 | 3.2079035  | 1647 | 3.2166936  | 1680 | 3.2253093  |
| 1615 | 3.2081725  | 1648 | 3.2169572  | 1681 | 3.2255677  |
| 1616 | 3.2084414  | 1649 | 3.2172206  | 1682 | 3.2258260  |
| 1617 | 3.2087100  | 1650 | 3.2174839  | 1683 | 3.2260841  |
| 1618 | 3.2089785  | 1651 | 3.2177471  | 1684 | 3.2263421  |
| 1619 | 3.2092468  | 1652 | 3.2180100  | 1685 | 3.2265999  |
| 1620 | 3.2095150  | 1653 | 3.2182728  | 1686 | 3.2268576  |
| 1621 | 3.2097830  | 1654 | 3.2185355  | 1687 | 3.2271151  |
| 1622 | 3.2100508  | 1655 | 3.2187980  | 1688 | 3.2273724  |
| 1623 | 3.2103185  | 1656 | 3.2190603  | 1689 | 3.2276296  |
| 1624 | 3.2105860  | 1657 | 3.2193225  | 1690 | 3.2278867  |
| 1625 | 3.2108534  | 1658 | 3.2195845  | 1691 | 3.2281436  |
| 1626 | 3.2111205  | 1659 | 3.2198464  | 1692 | 3.2284004  |
| 1627 | 3.2113876  | 1660 | 3.2201081  | 1693 | 3.2286570  |
| 1628 | 3.2116544  | 1661 | 3.2203696  | 1694 | 3.2289134  |
| 1629 | 3.2119211  | 1662 | 3.2206310  | 1695 | 3.2291697  |
| 1630 | 3.2121876  | 1663 | 3.2208922  | 1696 | 3.2294258  |
| 1631 | 3.2124540  | 1664 | 3.2211533  | 1697 | 3.2296818  |
| 1632 | 3.2127201  | 1665 | 3.2214142  | 1698 | 3.2299377  |
| 1633 | 3.2129862  | 1666 | 3.2216750  | 1699 | 3.2301934  |
| 1634 | 3.2132521  | 1667 | 3.2219356  | 1700 | 3.2304489  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 1701 | 3.2307043 | 1734 | 3.2390491 | 1767 | 3.2472365 |
| 1702 | 3.2309596 | 1735 | 3.2392995 | 1768 | 3.2474823 |
| 1703 | 3.2312146 | 1736 | 3.2395497 | 1769 | 3.2477278 |
| 1704 | 2.2314696 | 1737 | 3.2397998 | 1770 | 3.2479733 |
| 1705 | 3.2317244 | 1738 | 3.2400498 | 1771 | 3.2482186 |
| 1706 | 3.2319790 | 1739 | 3.2402996 | 1772 | 3.2484637 |
| 1707 | 3.2322335 | 1740 | 3.2405492 | 1773 | 3.2487087 |
| 1708 | 3.2324879 | 1741 | 3.2407988 | 1774 | 3.2489536 |
| 1709 | 3.2327421 | 1742 | 3.2410481 | 1775 | 3.2491984 |
| 1710 | 3.2329961 | 1743 | 3.2412974 | 1776 | 3.2494430 |
| 1711 | 3.2332500 | 1744 | 3.2415465 | 1777 | 3.2496874 |
| 1712 | 3.2335038 | 1745 | 3.2417954 | 1778 | 3.2499318 |
| 1713 | 3.2337574 | 1746 | 3.2420442 | 1779 | 3.2501759 |
| 1714 | 3.2340108 | 1747 | 3.2422929 | 1780 | 3.2504200 |
| 1715 | 3.2342641 | 1748 | 3.2425414 | 1781 | 3.2506639 |
| 1716 | 3.2345173 | 1749 | 3.2427898 | 1782 | 3.2509077 |
| 1717 | 3.2347703 | 1750 | 3.2430380 | 1783 | 3.2511513 |
| 1718 | 3.2350232 | 1751 | 3.2432861 | 1784 | 3.2513948 |
| 1719 | 3.2352759 | 1752 | 3.2435341 | 1785 | 3.2516382 |
| 1720 | 3.2355284 | 1753 | 3.2437819 | 1786 | 3.2518815 |
| 1721 | 3.2357809 | 1754 | 3.2440296 | 1787 | 3.2521246 |
| 1722 | 3.2360331 | 1755 | 3.2442771 | 1788 | 3.2523675 |
| 1723 | 3.2362853 | 1756 | 3.2445245 | 1789 | 3.2526103 |
| 1724 | 3.2365373 | 1757 | 3.2447718 | 1790 | 3.2528530 |
| 1725 | 3.2367891 | 1758 | 3.2450189 | 1791 | 3.2530956 |
| 1726 | 3.2370408 | 1759 | 3.2452658 | 1792 | 3.2533380 |
| 1727 | 3.2372923 | 1760 | 3.2455127 | 1793 | 3.2535803 |
| 1728 | 3.2375437 | 1761 | 3.2457594 | 1794 | 3.2538224 |
| 1729 | 3.2377950 | 1762 | 3.2460059 | 1795 | 3.2540645 |
| 1730 | 3.2380461 | 1763 | 3.2462523 | 1796 | 3.2543063 |
| 1731 | 3.2382971 | 1764 | 3.2464986 | 1797 | 3.2545481 |
| 1732 | 3.2385479 | 1765 | 3.2467447 | 1798 | 3.2547897 |
| 1733 | 3.2387986 | 1766 | 3.2469907 | 1799 | 3.2550312 |
| 1734 | 3.2390491 | 1767 | 3.2472365 | 1800 | 3.2552725 |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 1801 | 3.2555137  | 1834 | 3.2633993  | 1867 | 3.2711443  |
| 1802 | 3.2557548  | 1835 | 3.2636361  | 1868 | 3.2713769  |
| 1803 | 3.2559957  | 1836 | 3.2638727  | 1869 | 3.2716093  |
| 1804 | 3.2562365  | 1837 | 3.2641092  | 1870 | 3.2718416  |
| 1805 | 3.2564772  | 1838 | 3.2643455  | 1871 | 3.2720738  |
| 1806 | 3.2567177  | 1839 | 3.2645817  | 1872 | 3.2723058  |
| 1807 | 3.2569582  | 1840 | 3.2648178  | 1873 | 3.2725378  |
| 1808 | 3.2571984  | 1841 | 3.2650538  | 1874 | 3.2727696  |
| 1809 | 3.2574386  | 1842 | 3.2652896  | 1875 | 3.2730013  |
| 1810 | 3.2576786  | 1843 | 3.2655253  | 1876 | 3.2732328  |
| 1811 | 3.2579184  | 1844 | 3.2657609  | 1877 | 3.2734643  |
| 1812 | 3.2581582  | 1845 | 3.2659964  | 1878 | 3.2736956  |
| 1813 | 3.2583978  | 1846 | 3.2662317  | 1879 | 3.2739268  |
| 1814 | 3.2586373  | 1847 | 3.2664669  | 1880 | 3.2741578  |
| 1815 | 3.2588766  | 1848 | 3.2667020  | 1881 | 3.2743888  |
| 1816 | 3.2591158  | 1849 | 3.2669369  | 1882 | 3.2746196  |
| 1817 | 3.2593549  | 1850 | 3.2671717  | 1883 | 3.2748503  |
| 1818 | 3.2595939  | 1851 | 3.2674064  | 1884 | 3.2750809  |
| 1819 | 3.2598327  | 1852 | 3.2676410  | 1885 | 3.2753113  |
| 1820 | 3.2600714  | 1853 | 3.2678754  | 1886 | 3.2755417  |
| 1821 | 3.2603099  | 1854 | 3.2681097  | 1887 | 3.2757719  |
| 1822 | 3.2605484  | 1855 | 3.2683439  | 1888 | 3.2760020  |
| 1823 | 3.2607867  | 1856 | 3.2685780  | 1889 | 3.2762320  |
| 1824 | 3.2610248  | 1857 | 3.2688119  | 1890 | 3.2764618  |
| 1825 | 3.2612629  | 1858 | 3.2690457  | 1891 | 3.2766915  |
| 1826 | 3.2615008  | 1859 | 3.2692794  | 1892 | 3.2769211  |
| 1827 | 3.2617385  | 1860 | 3.2695129  | 1893 | 3.2771506  |
| 1828 | 3.2619762  | 1861 | 3.2697464  | 1894 | 3.2773800  |
| 1829 | 3.2622137  | 1862 | 3.2699797  | 1895 | 3.2776092  |
| 1830 | 3.2624511  | 1863 | 3.2702128  | 1896 | 3.2778383  |
| 1831 | 3.2626883  | 1864 | 3.2704459  | 1897 | 3.2780673  |
| 1832 | 3.2629255  | 1865 | 3.2706788  | 1898 | 3.2782962  |
| 1833 | 3.2631625  | 1866 | 3.2709116  | 1899 | 3.2785250  |
| 1834 | 3.2633993  | 1867 | 3.2711443  | 1900 | 3.2787536  |



| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 1901 | 3.2789821  | 1934 | 3.2864565  | 1967 | 3.2938044  |
| 1902 | 3.2792105  | 1935 | 3.2866810  | 1968 | 3.2940251  |
| 1903 | 3.2794388  | 1936 | 3.2869054  | 1969 | 3.2942457  |
| 1904 | 3.2796669  | 1937 | 3.2871296  | 1970 | 3.2944662  |
| 1905 | 3.2798950  | 1938 | 3.2873538  | 1971 | 3.2946866  |
| 1906 | 3.2801229  | 1939 | 3.2875778  | 1972 | 3.2949069  |
| 1907 | 3.2803507  | 1940 | 3.2878017  | 1973 | 3.2951271  |
| 1908 | 3.2805784  | 1941 | 3.2880255  | 1974 | 3.2953471  |
| 1909 | 3.2808059  | 1942 | 3.2882492  | 1975 | 3.2955671  |
| 1910 | 3.2810334  | 1943 | 3.2884728  | 1976 | 3.2957869  |
| 1911 | 3.2812607  | 1944 | 3.2886963  | 1977 | 3.2960067  |
| 1912 | 3.2814879  | 1945 | 3.2889196  | 1978 | 3.2962263  |
| 1913 | 3.2817150  | 1946 | 3.2891428  | 1979 | 3.2964458  |
| 1914 | 3.2819419  | 1947 | 3.2893659  | 1980 | 3.2966652  |
| 1915 | 3.2821688  | 1948 | 3.2895889  | 1981 | 3.2968845  |
| 1916 | 3.2823955  | 1949 | 3.2898118  | 1982 | 3.2971036  |
| 1917 | 3.2826221  | 1950 | 3.2900346  | 1983 | 3.2973227  |
| 1918 | 3.2828486  | 1951 | 3.2902573  | 1984 | 3.2975417  |
| 1919 | 3.2830750  | 1952 | 3.2904798  | 1985 | 3.2977605  |
| 1920 | 3.2833012  | 1953 | 3.2907022  | 1986 | 3.2979792  |
| 1921 | 3.2835274  | 1954 | 3.2909246  | 1987 | 3.2981979  |
| 1922 | 3.2837534  | 1955 | 3.2911468  | 1988 | 3.2984164  |
| 1923 | 3.2839793  | 1956 | 3.2913688  | 1989 | 3.2986348  |
| 1924 | 3.2842051  | 1957 | 3.2915908  | 1990 | 3.2988531  |
| 1925 | 3.2844307  | 1958 | 3.2918127  | 1991 | 3.2990713  |
| 1926 | 3.2846563  | 1959 | 3.2920344  | 1992 | 3.2992893  |
| 1927 | 3.2848817  | 1960 | 3.2922561  | 1993 | 3.2995073  |
| 1928 | 3.2851070  | 1961 | 3.2924776  | 1994 | 3.2997251  |
| 1929 | 3.2853322  | 1962 | 3.2926990  | 1995 | 3.2999429  |
| 1930 | 3.2855573  | 1963 | 3.2929203  | 1996 | 3.3001605  |
| 1931 | 3.2857823  | 1964 | 3.2931415  | 1997 | 3.3003781  |
| 1932 | 3.2860071  | 1965 | 3.2933626  | 1998 | 3.3005955  |
| 1933 | 3.2862318  | 1966 | 3.2935835  | 1999 | 3.3008128  |
| 1934 | 3.2864565  | 1967 | 3.2938044  | 2000 | 3.3010300  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 2001 | 3.3012471  | 2034 | 3.3083509  | 2067 | 3.3153405  |
| 2002 | 3.3014641  | 2035 | 3.3085644  | 2068 | 3.3155505  |
| 2003 | 3.3016809  | 2036 | 3.3087778  | 2069 | 3.3157605  |
| 2004 | 3.3018977  | 2037 | 3.3089910  | 2070 | 3.3159703  |
| 2005 | 3.3021144  | 2038 | 3.3092042  | 2071 | 3.3161801  |
| 2006 | 3.3023309  | 2039 | 3.3094172  | 2072 | 3.3163897  |
| 2007 | 3.3025474  | 2040 | 3.3096302  | 2073 | 3.3165993  |
| 2008 | 3.3027637  | 2041 | 3.3098430  | 2074 | 3.3168087  |
| 2009 | 3.3029799  | 2042 | 3.3100557  | 2075 | 3.3170181  |
| 2010 | 3.3031961  | 2043 | 3.3102684  | 2076 | 3.3172273  |
| 2011 | 3.3034121  | 2044 | 3.3104809  | 2077 | 3.3174365  |
| 2012 | 3.3036280  | 2045 | 3.3106933  | 2078 | 3.3176455  |
| 2013 | 3.3038438  | 2046 | 3.3109056  | 2079 | 3.3178545  |
| 2014 | 3.3040595  | 2047 | 3.3111178  | 2080 | 3.3180633  |
| 2015 | 3.3042751  | 2048 | 3.3113299  | 2081 | 3.3182721  |
| 2016 | 3.3044905  | 2049 | 3.3115420  | 2082 | 3.3184807  |
| 2017 | 3.3047059  | 2050 | 3.3117539  | 2083 | 3.3186893  |
| 2018 | 3.3049212  | 2051 | 3.3119657  | 2084 | 3.3188977  |
| 2019 | 3.3051363  | 2052 | 3.3121774  | 2085 | 3.3191061  |
| 2020 | 3.3053514  | 2053 | 3.3123889  | 2086 | 3.3193143  |
| 2021 | 3.3055663  | 2054 | 3.3126004  | 2087 | 3.3195224  |
| 2022 | 3.3057812  | 2055 | 3.3128118  | 2088 | 3.3197305  |
| 2023 | 3.3059959  | 2056 | 3.3130231  | 2089 | 3.3199384  |
| 2024 | 3.3062105  | 2057 | 3.3132343  | 2090 | 3.3201463  |
| 2025 | 3.3064250  | 2058 | 3.3134454  | 2091 | 3.3203540  |
| 2026 | 3.3066394  | 2059 | 3.3136563  | 2092 | 3.3205617  |
| 2027 | 3.3068537  | 2060 | 3.3138672  | 2093 | 3.3207692  |
| 2028 | 3.3070679  | 2061 | 3.3140780  | 2094 | 3.3209767  |
| 2029 | 3.3072820  | 2062 | 3.3142887  | 2095 | 3.3211840  |
| 2030 | 3.3074960  | 2063 | 3.3144992  | 2096 | 3.3213913  |
| 2031 | 3.3077099  | 2064 | 3.3147097  | 2097 | 3.3215984  |
| 2032 | 3.3079237  | 2065 | 3.3149200  | 2098 | 3.3218055  |
| 2033 | 3.3081374  | 2066 | 3.3151303  | 2099 | 3.3220124  |
| 2034 | 3.3083509  | 2067 | 3.3153405  | 2100 | 3.3222193  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 2101 | 3.3224260  | 2134 | 3.3291944  | 2167 | 3.3358589  |
| 2102 | 3.3226327  | 2135 | 3.3293979  | 2168 | 3.3360593  |
| 2103 | 3.3228393  | 2136 | 3.3296012  | 2169 | 3.3362596  |
| 2104 | 3.3230457  | 2137 | 3.3298045  | 2170 | 3.3364597  |
| 2105 | 3.3232521  | 2138 | 3.3300077  | 2171 | 3.3366598  |
| 2106 | 3.3234584  | 2139 | 3.3302108  | 2172 | 3.3368598  |
| 2107 | 3.3236644  | 2140 | 3.3304138  | 2173 | 3.3370597  |
| 2108 | 3.3238706  | 2141 | 3.3306167  | 2174 | 3.3372595  |
| 2109 | 3.3240766  | 2142 | 3.3308195  | 2175 | 3.3374593  |
| 2110 | 3.3242825  | 2143 | 3.3310222  | 2176 | 3.3376589  |
| 2111 | 3.3244882  | 2144 | 3.3312248  | 2177 | 3.3378584  |
| 2112 | 3.3246939  | 2145 | 3.3314273  | 2178 | 3.3380579  |
| 2113 | 3.3248995  | 2146 | 3.3316297  | 2179 | 3.3382572  |
| 2114 | 3.3251050  | 2147 | 3.3318320  | 2180 | 3.3384565  |
| 2115 | 3.3253104  | 2148 | 3.3320343  | 2181 | 3.3386557  |
| 2116 | 3.3255157  | 2149 | 3.3322364  | 2182 | 3.3388547  |
| 2117 | 3.3257209  | 2150 | 3.3324385  | 2183 | 3.3390537  |
| 2118 | 3.3259260  | 2151 | 3.3326404  | 2184 | 3.3392526  |
| 2119 | 3.3261310  | 2152 | 3.3328423  | 2185 | 3.3394514  |
| 2120 | 3.3263359  | 2153 | 3.3330440  | 2186 | 3.3396501  |
| 2121 | 3.3265407  | 2154 | 3.3332457  | 2187 | 3.3398488  |
| 2122 | 3.3267454  | 2155 | 3.3334473  | 2188 | 3.3400473  |
| 2123 | 3.3269500  | 2156 | 3.3336488  | 2189 | 3.3402458  |
| 2124 | 3.3271545  | 2157 | 3.3338501  | 2190 | 3.3404441  |
| 2125 | 3.3273589  | 2158 | 3.3340514  | 2191 | 3.3406424  |
| 2126 | 3.3275633  | 2159 | 3.3342526  | 2192 | 3.3408405  |
| 2127 | 3.3277675  | 2160 | 3.3344537  | 2193 | 3.3410386  |
| 2128 | 3.3279716  | 2161 | 3.3346548  | 2194 | 3.3412366  |
| 2129 | 3.3281757  | 2162 | 3.3348557  | 2195 | 3.3414345  |
| 2130 | 3.3283796  | 2163 | 3.3350565  | 2196 | 3.3416323  |
| 2131 | 3.3285834  | 2164 | 3.3352572  | 2197 | 3.3418301  |
| 2132 | 3.3287872  | 2165 | 3.3354579  | 2198 | 3.3420277  |
| 2133 | 3.3289909  | 2166 | 3.3356585  | 2199 | 3.3422252  |
| 2134 | 3.3291944  | 2167 | 3.3358589  | 2200 | 3.3424227  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 2201 | 3.3426200  | 2234 | 3.3490832  | 2267 | 3.3554515  |
| 2202 | 3.3428173  | 2235 | 3.3492775  | 2268 | 3.3556430  |
| 2203 | 3.3430145  | 2236 | 3.3494718  | 2269 | 3.3558345  |
| 2204 | 3.3432116  | 2237 | 3.3496660  | 2270 | 3.3560259  |
| 2205 | 3.3434086  | 2238 | 3.3498601  | 2271 | 3.3562171  |
| 2206 | 3.3436055  | 2239 | 3.3500541  | 2272 | 3.3564083  |
| 2207 | 3.3438023  | 2240 | 3.3502480  | 2273 | 3.3565994  |
| 2208 | 3.3439991  | 2241 | 3.3504419  | 2274 | 3.3567905  |
| 2209 | 3.3441957  | 2242 | 3.3506356  | 2275 | 3.3569814  |
| 2210 | 3.3443923  | 2243 | 3.3508293  | 2276 | 3.3571723  |
| 2211 | 3.3445887  | 2244 | 3.3510228  | 2277 | 3.3573630  |
| 2212 | 3.3447851  | 2245 | 3.3512163  | 2278 | 3.3575537  |
| 2213 | 3.3449814  | 2246 | 3.3514098  | 2279 | 3.3577443  |
| 2214 | 3.3451776  | 2247 | 3.3516031  | 2280 | 3.3579348  |
| 2215 | 3.3453737  | 2248 | 3.3517963  | 2281 | 3.3581253  |
| 2216 | 3.3455698  | 2249 | 3.3519895  | 2282 | 3.3583156  |
| 2217 | 3.3457657  | 2250 | 3.3521825  | 2283 | 3.3585059  |
| 2218 | 3.3459615  | 2251 | 3.3523755  | 2284 | 3.3586961  |
| 2219 | 3.3461573  | 2252 | 3.3525684  | 2285 | 3.3588862  |
| 2220 | 3.3463530  | 2253 | 3.3527612  | 2286 | 3.3590762  |
| 2221 | 3.3465486  | 2254 | 3.3529539  | 2287 | 3.3592662  |
| 2222 | 3.3467441  | 2255 | 3.3531465  | 2288 | 3.3594560  |
| 2223 | 3.3469395  | 2256 | 3.3533391  | 2289 | 3.3596458  |
| 2224 | 3.3471348  | 2257 | 3.3535316  | 2290 | 3.3598355  |
| 2225 | 3.3473300  | 2258 | 3.3537239  | 2291 | 3.3600251  |
| 2226 | 3.3475252  | 2259 | 3.3539162  | 2292 | 3.3602146  |
| 2227 | 3.3477202  | 2260 | 3.3541084  | 2293 | 3.3604041  |
| 2228 | 3.3479152  | 2261 | 3.3543006  | 2294 | 3.3605934  |
| 2229 | 3.3481101  | 2262 | 3.3544926  | 2295 | 3.3607827  |
| 2230 | 3.3483049  | 2263 | 3.3546846  | 2296 | 3.3609719  |
| 2231 | 3.3484996  | 2264 | 3.3548764  | 2297 | 3.3611610  |
| 2232 | 3.3486942  | 2265 | 3.3550682  | 2298 | 3.3613500  |
| 2233 | 3.3488887  | 2266 | 3.3552599  | 2299 | 3.3615390  |
| 2234 | 3.3490832  | 2267 | 3.3554515  | 2300 | 3.3617278  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 2301 | 3.3619166 | 2334 | 3.3681008 | 2367 | 3.3741983 |
| 2302 | 3.3621053 | 2335 | 3.3682869 | 2368 | 3.3743817 |
| 2303 | 3.3622939 | 2336 | 3.3684729 | 2369 | 3.3745651 |
| 2304 | 3.3624825 | 2337 | 3.3686587 | 2370 | 3.3747483 |
| 2305 | 3.3626709 | 2338 | 3.3688445 | 2371 | 3.3749316 |
| 2306 | 3.3628593 | 2339 | 3.3690302 | 2372 | 3.3751147 |
| 2307 | 3.3630476 | 2340 | 3.3692159 | 2373 | 3.3752977 |
| 2308 | 3.3632358 | 2341 | 3.3694014 | 2374 | 3.3754807 |
| 2309 | 3.3634239 | 2342 | 3.3695869 | 2375 | 3.3756636 |
| 2310 | 3.3636120 | 2343 | 3.3697723 | 2376 | 3.3758464 |
| 2311 | 3.3637999 | 2344 | 3.3699576 | 2377 | 3.3760292 |
| 2312 | 3.3639878 | 2345 | 3.3701428 | 2378 | 3.3762118 |
| 2313 | 3.3641756 | 2346 | 3.3703280 | 2379 | 3.3763944 |
| 2314 | 3.3643633 | 2347 | 3.3705131 | 2380 | 3.3765769 |
| 2315 | 3.3645510 | 2348 | 3.3706981 | 2381 | 3.3767594 |
| 2316 | 3.3647386 | 2349 | 3.3708830 | 2382 | 3.3769418 |
| 2317 | 3.3649260 | 2350 | 3.3710679 | 2383 | 3.3771240 |
| 2318 | 3.3651134 | 2351 | 3.3712526 | 2384 | 3.3773062 |
| 2319 | 3.3653007 | 2352 | 3.3714373 | 2385 | 3.3774884 |
| 2320 | 3.3654880 | 2353 | 3.3716219 | 2386 | 3.3776704 |
| 2321 | 3.3656751 | 2354 | 3.3718065 | 2387 | 3.3778524 |
| 2322 | 3.3658622 | 2355 | 3.3719909 | 2388 | 3.3780343 |
| 2323 | 3.3660492 | 2356 | 3.3721753 | 2389 | 3.3782161 |
| 2324 | 3.3662361 | 2357 | 3.3723596 | 2390 | 3.3783979 |
| 2325 | 3.3664230 | 2358 | 3.3725438 | 2391 | 3.3785796 |
| 2326 | 3.3666097 | 2359 | 3.3727279 | 2392 | 3.3787612 |
| 2327 | 3.3667964 | 2360 | 3.3729120 | 2393 | 3.3789427 |
| 2328 | 3.3669830 | 2361 | 3.3730960 | 2394 | 3.3791241 |
| 2329 | 3.3671695 | 2362 | 3.3732799 | 2395 | 3.3793055 |
| 2330 | 3.3673559 | 2363 | 3.3734637 | 2396 | 3.3794868 |
| 2331 | 3.3675423 | 2364 | 3.3736475 | 2397 | 3.3796680 |
| 2332 | 3.3677285 | 2365 | 3.3738311 | 2398 | 3.3798492 |
| 2333 | 3.3679147 | 3366 | 3.3740147 | 2399 | 3.3800302 |
| 2334 | 3.3681008 | 2367 | 3.3741983 | 2400 | 3.3802112 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 2401 | 3.3803922  | 2434 | 3.3863206  | 2467 | 3.3921691  |
| 2402 | 3.3805730  | 2435 | 3.3864990  | 2468 | 3.3923452  |
| 2403 | 3.3807538  | 2436 | 3.3866773  | 2469 | 3.3925211  |
| 2404 | 3.3809345  | 2437 | 3.3868555  | 2470 | 3.3926969  |
| 2405 | 3.3811151  | 2438 | 3.3870337  | 2471 | 3.3928727  |
| 2406 | 3.3812956  | 2439 | 3.3872118  | 2472 | 3.3930485  |
| 2407 | 3.3814761  | 2440 | 3.3873898  | 2473 | 3.3932241  |
| 2408 | 3.3816565  | 2441 | 3.3875678  | 2474 | 3.3933997  |
| 2409 | 3.3818368  | 2442 | 3.3877457  | 2475 | 3.3935752  |
| 2410 | 3.3820170  | 2443 | 3.3879235  | 2476 | 3.3937506  |
| 2411 | 3.3821972  | 2444 | 3.3881012  | 2477 | 3.3939260  |
| 2412 | 3.3823773  | 2445 | 3.3882789  | 2478 | 3.3941013  |
| 2413 | 3.3825573  | 2446 | 3.3884565  | 2479 | 3.3942765  |
| 2414 | 3.3827373  | 2447 | 3.3886340  | 2480 | 3.3944517  |
| 2415 | 3.3829171  | 2448 | 3.3888114  | 2481 | 3.3946268  |
| 2416 | 3.3830969  | 2449 | 3.3889888  | 2482 | 3.3948018  |
| 2417 | 3.3832766  | 2450 | 3.3891661  | 2483 | 3.3949767  |
| 2418 | 3.3834563  | 2451 | 3.3893433  | 2484 | 3.3951516  |
| 2419 | 3.3836359  | 2452 | 3.3895205  | 2485 | 3.3953264  |
| 2420 | 3.3838154  | 2453 | 3.3896975  | 2486 | 3.3955011  |
| 2421 | 3.3839948  | 2454 | 3.3898746  | 2487 | 3.3956758  |
| 2422 | 3.3841741  | 2455 | 3.3900515  | 2488 | 3.3958504  |
| 2423 | 3.3843534  | 2456 | 3.3902284  | 2489 | 3.3960249  |
| 2424 | 3.3845326  | 2457 | 3.3904052  | 2490 | 3.3961993  |
| 2425 | 3.3847117  | 2458 | 3.3905819  | 2491 | 3.3963737  |
| 2426 | 3.3848908  | 2459 | 3.3907585  | 2492 | 3.3965480  |
| 2427 | 3.3850698  | 2460 | 3.3909351  | 2493 | 3.3967223  |
| 2428 | 3.3852487  | 2461 | 3.3911116  | 2494 | 3.3968964  |
| 2429 | 3.3854275  | 2462 | 3.3912880  | 2495 | 3.3970705  |
| 2430 | 3.3856063  | 2463 | 3.3914644  | 2496 | 3.3972446  |
| 2431 | 3.3857850  | 2464 | 3.3916407  | 2497 | 3.3974185  |
| 2432 | 3.3859636  | 2465 | 3.3918169  | 2498 | 3.3975924  |
| 2433 | 3.3861421  | 2466 | 3.3919931  | 2499 | 3.3977662  |
| 2434 | 3.3863206  | 2467 | 3.3921691  | 2500 | 3.3979400  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 2501 | 3.3981137 | 2534 | 3.4038066 | 2567 | 3.4094259 |
| 2502 | 3.3982873 | 2535 | 3.4039780 | 2568 | 3.4095950 |
| 2503 | 3.3984608 | 2536 | 3.4041492 | 2569 | 3.4097641 |
| 2504 | 3.3986343 | 2537 | 3.4043205 | 2570 | 3.4099331 |
| 2505 | 3.3988077 | 2538 | 3.4044916 | 2571 | 3.4101021 |
| 2506 | 3.3989811 | 2539 | 3.4046627 | 2572 | 3.4102710 |
| 2507 | 3.3991543 | 2540 | 3.4048337 | 2573 | 3.4104398 |
| 2508 | 3.3993275 | 2541 | 3.4050047 | 2574 | 3.4106085 |
| 2509 | 3.3995007 | 2542 | 3.4051755 | 2575 | 3.4107772 |
| 2510 | 3.3996737 | 2543 | 3.4053464 | 2576 | 3.4109459 |
| 2511 | 3.3998467 | 2544 | 3.4055171 | 2577 | 3.4111144 |
| 2512 | 3.4000196 | 2545 | 3.4056878 | 2578 | 3.4112829 |
| 2513 | 3.4001925 | 2546 | 3.4058584 | 2579 | 3.4114513 |
| 2514 | 3.4003653 | 2547 | 3.4060289 | 2580 | 3.4116197 |
| 2515 | 3.4005380 | 2548 | 3.4061994 | 2581 | 3.4117880 |
| 2516 | 3.4007106 | 2549 | 3.4063698 | 2582 | 3.4119562 |
| 2517 | 3.4008832 | 2550 | 3.4065402 | 2583 | 3.4121244 |
| 2518 | 3.4010557 | 2551 | 3.4067105 | 2584 | 3.4122925 |
| 2519 | 3.4012282 | 2552 | 3.4068807 | 2585 | 3.4124605 |
| 2520 | 3.4014005 | 2553 | 3.4070508 | 2586 | 3.4126285 |
| 2521 | 3.4015728 | 2554 | 3.4072209 | 2587 | 3.4127964 |
| 2522 | 3.4017451 | 2555 | 3.4073909 | 2588 | 3.4129643 |
| 2523 | 3.4019173 | 2556 | 3.4075608 | 2589 | 3.4131320 |
| 2524 | 3.4020893 | 2557 | 3.4077307 | 2590 | 3.4132998 |
| 2525 | 3.4022614 | 2558 | 3.4079005 | 2591 | 3.4134674 |
| 2526 | 3.4024333 | 2559 | 3.4080703 | 2592 | 3.4136350 |
| 2527 | 3.4026052 | 2560 | 3.4082400 | 2593 | 3.4138025 |
| 2528 | 3.4027771 | 2561 | 3.4084096 | 2594 | 3.4139700 |
| 2529 | 3.4029488 | 2562 | 3.4085791 | 2595 | 3.4141374 |
| 2530 | 3.4031205 | 2563 | 3.4087486 | 2596 | 3.4143047 |
| 2531 | 3.4032921 | 2564 | 3.4089180 | 2597 | 3.4144719 |
| 2532 | 3.4034637 | 2565 | 3.4090874 | 2598 | 3.4146391 |
| 2533 | 3.4036352 | 2566 | 3.4092567 | 2599 | 3.4148063 |
| 2534 | 3.4038066 | 2567 | 3.4094259 | 2600 | 3.4149733 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 2601 | 3.4151404  | 2634 | 3.4206158  | 2667 | 3.4260230  |
| 2602 | 3.4153073  | 2635 | 3.4207806  | 2668 | 3.4261858  |
| 2603 | 3.4154742  | 2636 | 3.4209454  | 2669 | 3.4263486  |
| 2604 | 3.4156410  | 2637 | 3.4211101  | 2670 | 3.4265113  |
| 2605 | 3.4158077  | 2638 | 3.4212748  | 2671 | 3.4266739  |
| 2606 | 3.4159744  | 2639 | 3.4214394  | 2672 | 3.4268365  |
| 2607 | 3.4161410  | 2640 | 3.4216039  | 2673 | 3.4269990  |
| 2608 | 3.4163076  | 2641 | 3.4217684  | 2674 | 3.4271614  |
| 2609 | 3.4164741  | 2642 | 3.4219328  | 2675 | 3.4273238  |
| 2610 | 3.4166405  | 2643 | 3.4220972  | 2676 | 3.4274861  |
| 2611 | 3.4168069  | 2644 | 3.4222614  | 2677 | 3.4276484  |
| 2612 | 3.4169732  | 2645 | 3.4224257  | 2678 | 3.4278106  |
| 2613 | 3.4171394  | 2646 | 3.4225898  | 2679 | 3.4279727  |
| 2614 | 3.4173056  | 2647 | 3.4227539  | 2680 | 3.4281348  |
| 2615 | 3.4174717  | 2648 | 3.4229180  | 2681 | 3.4282968  |
| 2616 | 3.4176377  | 2649 | 3.4230820  | 2682 | 3.4284588  |
| 2617 | 3.4178037  | 2650 | 3.4232459  | 2683 | 3.4286207  |
| 2618 | 3.4179696  | 2651 | 3.4234097  | 2684 | 3.4287825  |
| 2619 | 3.4181355  | 2652 | 3.4235735  | 2685 | 3.4289443  |
| 2620 | 3.4183013  | 2653 | 3.4237372  | 2686 | 3.4291060  |
| 2621 | 3.4184670  | 2654 | 3.4239009  | 2687 | 3.4292677  |
| 2622 | 3.4186327  | 2655 | 3.4240645  | 2688 | 3.4294293  |
| 2623 | 3.4187983  | 2656 | 3.4242281  | 2689 | 3.4295908  |
| 2624 | 3.4189638  | 2657 | 3.4243916  | 2690 | 3.4297523  |
| 2625 | 3.4191293  | 2658 | 3.4245550  | 2691 | 3.4299137  |
| 2626 | 3.4192947  | 2659 | 3.4247183  | 2692 | 3.4300751  |
| 2627 | 3.4194601  | 2660 | 3.4248816  | 2693 | 3.4302364  |
| 2628 | 3.4196254  | 2661 | 3.4250449  | 2694 | 3.4303976  |
| 2629 | 3.4197906  | 2662 | 3.4252080  | 2695 | 3.4305588  |
| 2630 | 3.4199557  | 2663 | 3.4253722  | 2696 | 3.4307199  |
| 2631 | 3.4201208  | 2664 | 3.4255342  | 2697 | 3.4308809  |
| 2632 | 3.4202859  | 2665 | 3.4256972  | 2698 | 3.4310419  |
| 2633 | 3.4204509  | 2666 | 3.4258601  | 2699 | 3.4312029  |
| 2634 | 3.4206158  | 2667 | 3.4260230  | 2700 | 3.4313638  |



| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 2701 | 3.4315246  | 2734 | 3.4367985  | 2767 | 3.4420092  |
| 2702 | 3.4316853  | 2735 | 3.4369573  | 2768 | 3.4421661  |
| 2703 | 3.4318460  | 2736 | 3.4371161  | 2769 | 3.4423229  |
| 2704 | 3.4320067  | 2737 | 3.4372748  | 2770 | 3.4424798  |
| 2705 | 3.4321673  | 2738 | 3.4374334  | 2771 | 3.4426365  |
| 2706 | 3.4323278  | 2739 | 3.4375920  | 2772 | 3.4427932  |
| 2707 | 3.4324882  | 2740 | 3.4377506  | 2773 | 3.4429499  |
| 2708 | 3.4326487  | 2741 | 3.4379090  | 2774 | 3.4431065  |
| 2709 | 3.4328090  | 2742 | 3.4380674  | 2775 | 3.4432630  |
| 2710 | 3.4329693  | 2743 | 3.4382258  | 2776 | 3.4434195  |
| 2711 | 3.4331295  | 2744 | 3.4383841  | 2777 | 3.4435759  |
| 2712 | 3.4332897  | 2745 | 3.4385423  | 2778 | 3.4437322  |
| 2713 | 3.4334498  | 2746 | 3.4387005  | 2779 | 3.4438885  |
| 2714 | 3.4336098  | 2747 | 3.4388587  | 2780 | 3.4440448  |
| 2715 | 3.4337698  | 2748 | 3.4390167  | 2781 | 3.4442010  |
| 2716 | 3.4339298  | 2749 | 3.4391747  | 2782 | 3.4443571  |
| 2717 | 3.4340896  | 2750 | 3.4393327  | 2783 | 3.4445132  |
| 2718 | 3.4342494  | 2751 | 3.4394906  | 2784 | 3.4446692  |
| 2719 | 3.4344092  | 2752 | 3.4396484  | 2785 | 3.4448252  |
| 2720 | 3.4345689  | 2753 | 3.4398062  | 2786 | 3.4449811  |
| 2721 | 3.4347285  | 2754 | 3.4399639  | 2787 | 3.4451370  |
| 2722 | 3.4348881  | 2755 | 3.4401216  | 2788 | 3.4452928  |
| 2723 | 3.4350476  | 2756 | 3.4402792  | 2789 | 3.4454485  |
| 2724 | 3.4352071  | 2757 | 3.4404368  | 2790 | 3.4456042  |
| 2725 | 3.4353665  | 2758 | 3.4405943  | 2791 | 3.4457598  |
| 2726 | 3.4355258  | 2759 | 3.4407517  | 2792 | 3.4459154  |
| 2727 | 3.4356851  | 2760 | 3.4409091  | 2793 | 3.4460709  |
| 2728 | 3.4358444  | 2761 | 3.4410664  | 2794 | 3.4462264  |
| 2729 | 3.4360035  | 2762 | 3.4412237  | 2795 | 3.4463818  |
| 2730 | 3.4361626  | 2763 | 3.4413809  | 2796 | 3.4465372  |
| 2731 | 3.4363217  | 2764 | 3.4415380  | 2797 | 3.4466925  |
| 2732 | 3.4364807  | 2765 | 3.4416951  | 2798 | 3.4468477  |
| 2733 | 3.4366396  | 2766 | 3.4418522  | 2799 | 3.4470029  |
| 2734 | 3.4367985  | 2767 | 3.4420092  | 2800 | 3.4471580  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 2801 | 3.447313I  | 2834 | 3.4523998  | 2867 | 3.4574277  |
| 2802 | 3.447468I  | 2835 | 3.452553I  | 2868 | 3.457579I  |
| 2803 | 3.447623I  | 2836 | 3.4527062  | 2869 | 3.4577305  |
| 2804 | 3.4477780  | 2837 | 3.4528593  | 2870 | 3.4578819  |
| 2805 | 3.4479329  | 2838 | 3.4530124  | 2871 | 3.4580332  |
| 2806 | 3.4480877  | 2839 | 3.4531654  | 2872 | 3.4581844  |
| 2807 | 3.4482424  | 2840 | 3.4533183  | 2873 | 3.4583356  |
| 2808 | 3.448397I  | 2841 | 3.4534712  | 2874 | 3.4584867  |
| 2809 | 3.4485517  | 2842 | 3.453624I  | 2875 | 3.4586378  |
| 2810 | 3.4487063  | 2843 | 3.4537769  | 2876 | 3.4587889  |
| 2811 | 3.4488608  | 2844 | 3.4539296  | 2877 | 3.4589399  |
| 2812 | 3.4490153  | 2845 | 3.4540823  | 2878 | 3.4590908  |
| 2813 | 3.4491697  | 2846 | 3.4542349  | 2879 | 3.4592417  |
| 2814 | 3.449324I  | 2847 | 3.4543875  | 2880 | 3.4593925  |
| 2815 | 3.4494784  | 2848 | 3.4545400  | 2881 | 3.4595433  |
| 2816 | 3.4496326  | 2849 | 3.3546924  | 2882 | 3.4596940  |
| 2817 | 3.4497868  | 2850 | 3.4548449  | 2883 | 3.4598446  |
| 2818 | 3.4499410  | 2851 | 3.4549972  | 2884 | 3.4599953  |
| 2819 | 3.450095I  | 2852 | 3.4551495  | 2885 | 3.4601458  |
| 2820 | 3.450249I  | 2853 | 3.4553018  | 2886 | 3.4602963  |
| 2821 | 3.450403I  | 2854 | 3.4554540  | 2887 | 3.4604468  |
| 2822 | 3.4505570  | 2855 | 3.455606I  | 2888 | 3.4605972  |
| 2823 | 3.4507109  | 2856 | 3.4557582  | 2889 | 3.4607475  |
| 2824 | 3.4508647  | 2857 | 3.4559102  | 2890 | 3.4608978  |
| 2825 | 3.4510184  | 2858 | 3.4560622  | 2891 | 3.461048I  |
| 2826 | 3.451172I  | 2859 | 3.4562142  | 2892 | 3.4611983  |
| 2827 | 3.4513258  | 2860 | 3.4563660  | 2893 | 3.4613484  |
| 2828 | 3.4514794  | 2861 | 3.4565170  | 2894 | 3.4614985  |
| 2829 | 3.4516329  | 2862 | 3.4566696  | 2895 | 3.4616486  |
| 2830 | 3.4517864  | 2863 | 3.4568213  | 2896 | 3.4617986  |
| 2831 | 3.4519399  | 2864 | 3.4569730  | 2897 | 3.4619485  |
| 2832 | 3.4520932  | 2865 | 3.4571246  | 2898 | 3.4620984  |
| 2833 | 3.4522466  | 2866 | 3.4572762  | 2899 | 3.4622482  |
| 2834 | 3.4523998  | 2867 | 3.4574277  | 2900 | 3.4623980  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 2901 | 3.4625477  | 2934 | 3.4674601  | 2967 | 3.4723175  |
| 2902 | 3.4626974  | 2935 | 3.4676081  | 2968 | 3.4724639  |
| 2903 | 3.4628470  | 2936 | 3.4677560  | 2969 | 3.4726102  |
| 2904 | 3.4629966  | 2937 | 3.4679039  | 2970 | 3.4727564  |
| 2905 | 3.4631461  | 2938 | 3.4680518  | 2971 | 3.4729027  |
| 2906 | 3.4632956  | 2939 | 3.4681996  | 2972 | 3.4730488  |
| 2907 | 3.4634450  | 2940 | 3.4683473  | 2973 | 3.4731949  |
| 2908 | 3.4635944  | 2941 | 3.4684950  | 2974 | 3.4733410  |
| 2909 | 3.4637437  | 2942 | 3.4686427  | 2975 | 3.4734870  |
| 2910 | 3.4638930  | 2943 | 3.4687903  | 2976 | 3.4736329  |
| 2911 | 3.4640422  | 2944 | 3.4689378  | 2977 | 3.4737788  |
| 2912 | 3.4641914  | 2945 | 3.4690853  | 2978 | 3.4739247  |
| 2913 | 3.4643405  | 2946 | 3.4692327  | 2979 | 3.4740705  |
| 2914 | 3.4644895  | 2947 | 3.4693801  | 2980 | 3.4742163  |
| 2915 | 3.4646386  | 2948 | 3.4695275  | 2981 | 3.4743620  |
| 2916 | 3.4647875  | 2949 | 3.4696748  | 2982 | 3.4745076  |
| 2917 | 3.4649364  | 2950 | 3.4698220  | 2983 | 3.4746533  |
| 2918 | 3.4650853  | 2951 | 3.4699692  | 2984 | 3.4747988  |
| 2919 | 3.4652341  | 2952 | 3.4701163  | 2985 | 3.4749443  |
| 2920 | 3.4653828  | 2953 | 3.4702634  | 2986 | 3.4750898  |
| 2921 | 3.4655316  | 2954 | 3.4704105  | 2987 | 3.4752352  |
| 2922 | 3.4656802  | 2955 | 3.4705575  | 2988 | 3.4753806  |
| 2923 | 3.4658288  | 2956 | 3.4707044  | 2989 | 3.4755259  |
| 2924 | 3.4659778  | 2957 | 3.4708513  | 2990 | 3.4756712  |
| 2925 | 3.4661259  | 2958 | 3.4709982  | 2991 | 3.4758164  |
| 2926 | 3.4662743  | 2959 | 3.4711450  | 2992 | 3.4759616  |
| 2927 | 3.4664227  | 2960 | 3.4712917  | 2993 | 3.4761067  |
| 2928 | 3.4665711  | 2961 | 3.4714384  | 2994 | 3.4762518  |
| 2929 | 3.4667194  | 2962 | 3.4715851  | 2995 | 3.4763968  |
| 2930 | 3.4668676  | 2963 | 3.4717317  | 2996 | 3.4765418  |
| 2931 | 3.4670158  | 2964 | 3.4718782  | 2997 | 3.4766867  |
| 2932 | 3.4671640  | 2965 | 3.4720247  | 2998 | 3.4768316  |
| 2933 | 3.4673121  | 2966 | 3.4721711  | 2999 | 3.4769765  |
| 2934 | 3.4674601  | 2967 | 3.4723175  | 3000 | 3.4771212  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 3001 | 3.4772660 | 3034 | 3.4820156 | 3067 | 3.4867138 |
| 3002 | 3.4774107 | 3035 | 3.4821587 | 3068 | 3.4868554 |
| 3003 | 3.4775553 | 3036 | 3.4823018 | 3069 | 3.4869969 |
| 3004 | 3.4776999 | 3037 | 3.4824448 | 3070 | 3.4871384 |
| 3005 | 3.4778445 | 3038 | 3.4825878 | 3071 | 3.4872798 |
| 3006 | 3.4779890 | 3039 | 3.4827307 | 3072 | 3.4874212 |
| 3007 | 3.4781334 | 3040 | 3.4828736 | 3073 | 3.4875626 |
| 3008 | 3.4782778 | 3041 | 3.4830164 | 3074 | 3.4877039 |
| 3009 | 3.4784222 | 3042 | 3.4831592 | 3075 | 3.4878451 |
| 3010 | 3.4785665 | 3043 | 3.4833019 | 3076 | 3.4879863 |
| 3011 | 3.4787108 | 3044 | 3.4834446 | 3077 | 3.4881275 |
| 3012 | 3.4788550 | 3045 | 3.4835873 | 3078 | 3.4882686 |
| 3013 | 3.4789991 | 3046 | 3.4837299 | 3079 | 3.4884097 |
| 3014 | 3.4791432 | 3047 | 3.4838725 | 3080 | 3.4885507 |
| 3015 | 3.4792873 | 3048 | 3.4840150 | 3081 | 3.4886917 |
| 3016 | 3.4794313 | 3049 | 3.4841574 | 3082 | 3.4888326 |
| 3017 | 3.4795753 | 3050 | 3.4842998 | 3083 | 3.4889735 |
| 3018 | 3.4797192 | 3051 | 3.4844422 | 3084 | 3.4891144 |
| 3019 | 3.4798631 | 3052 | 3.4845845 | 3085 | 3.4892552 |
| 3020 | 3.4800069 | 3053 | 3.4847268 | 3086 | 3.4893959 |
| 3021 | 3.4801507 | 3054 | 3.4848690 | 3087 | 3.4895366 |
| 3022 | 3.4802945 | 3055 | 3.4850112 | 3088 | 3.4896773 |
| 3023 | 3.4804381 | 3056 | 3.4851533 | 3089 | 3.4898179 |
| 3024 | 3.4805818 | 3057 | 3.4852954 | 3090 | 3.4899585 |
| 3025 | 3.4807254 | 3058 | 3.4854375 | 3091 | 3.4900990 |
| 3026 | 3.4808689 | 3059 | 3.4855795 | 3092 | 3.4902395 |
| 3027 | 3.4810124 | 3060 | 3.4857214 | 3093 | 3.4903799 |
| 3028 | 3.4811559 | 3061 | 3.4858633 | 3094 | 3.4905203 |
| 3029 | 3.4812993 | 3062 | 3.4860052 | 3095 | 3.4906607 |
| 3030 | 3.4814426 | 3063 | 3.4861470 | 3096 | 3.4908009 |
| 3031 | 3.4815859 | 3064 | 3.4862888 | 3097 | 3.4909412 |
| 3032 | 3.4817292 | 3065 | 3.4864305 | 3098 | 3.4910814 |
| 3033 | 3.4818724 | 3066 | 3.4865721 | 3099 | 3.4912216 |
| 3034 | 3.4820156 | 3067 | 3.4867138 | 3100 | 3.4913617 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 3101 | 3.4915018 | 3134 | 3.4960990 | 3167 | 3.5006481 |
| 3102 | 3.4916418 | 3135 | 3.4962375 | 3168 | 3.5007851 |
| 3103 | 3.4917818 | 3136 | 3.4963761 | 3169 | 3.5009222 |
| 3104 | 3.4919217 | 3137 | 3.4965145 | 3170 | 3.5010593 |
| 3105 | 3.4920616 | 3138 | 3.4966529 | 3171 | 3.5011962 |
| 3106 | 3.4922014 | 3139 | 3.4967913 | 3172 | 3.5013332 |
| 3107 | 3.4923413 | 3140 | 3.4969296 | 3173 | 3.5014701 |
| 3108 | 3.4924810 | 3141 | 3.4970679 | 3174 | 3.5016069 |
| 3109 | 3.4926207 | 3142 | 3.4972062 | 3175 | 3.5017437 |
| 3110 | 3.4927604 | 3143 | 3.4973444 | 3176 | 3.5018805 |
| 3111 | 3.4929000 | 3144 | 3.4974825 | 3177 | 3.5020172 |
| 3112 | 3.4930396 | 3145 | 3.4976206 | 3178 | 3.5021539 |
| 3113 | 3.4931791 | 3146 | 3.4977587 | 3179 | 3.5022905 |
| 3114 | 3.4933186 | 3147 | 3.4978967 | 3180 | 3.5024271 |
| 3115 | 3.4934580 | 3148 | 3.4980347 | 3181 | 3.5025637 |
| 3116 | 3.4935974 | 3149 | 3.4981727 | 3182 | 3.5027002 |
| 3117 | 3.4937368 | 3150 | 3.4983106 | 3183 | 3.5028366 |
| 3118 | 3.4938761 | 3151 | 3.4984484 | 3184 | 3.5029731 |
| 3119 | 3.4940154 | 3152 | 3.4985862 | 3185 | 3.5031094 |
| 3120 | 3.4941546 | 3153 | 3.4987240 | 3186 | 3.5032458 |
| 3121 | 3.4942938 | 3154 | 3.4988617 | 3187 | 3.5033821 |
| 3122 | 3.4944329 | 3155 | 3.4989994 | 3188 | 3.5035183 |
| 3123 | 3.4945720 | 3156 | 3.4991370 | 3189 | 3.5036545 |
| 3124 | 3.4947110 | 3157 | 3.4992746 | 3190 | 3.5037907 |
| 3125 | 3.4948500 | 3158 | 3.4994121 | 3191 | 3.5039268 |
| 3126 | 3.4949890 | 3159 | 3.4995496 | 3192 | 3.5040629 |
| 3127 | 3.4951279 | 3160 | 3.4996871 | 3193 | 3.5041989 |
| 3128 | 3.4952667 | 3161 | 3.4998245 | 3194 | 3.5043349 |
| 3129 | 3.4954056 | 3162 | 3.4999619 | 3195 | 3.5044709 |
| 3130 | 3.4955443 | 3163 | 3.5000992 | 3196 | 3.5046068 |
| 3131 | 3.4956831 | 3164 | 3.5002365 | 3197 | 3.5047426 |
| 3132 | 3.4958218 | 3165 | 3.5003737 | 3198 | 3.5048785 |
| 3133 | 3.4959604 | 3166 | 3.5005109 | 3199 | 3.5050142 |
| 3134 | 3.4960990 | 3167 | 3.5006481 | 3200 | 3.5051500 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 3201 | 3.5052857  | 3234 | 3.5097400  | 3267 | 3.5141491  |
| 3202 | 3.5054213  | 3235 | 3.5098743  | 3268 | 3.5142820  |
| 3203 | 3.5055569  | 3236 | 3.5100085  | 3269 | 3.5144149  |
| 3204 | 3.5056925  | 3237 | 3.5101427  | 3270 | 3.5145478  |
| 3205 | 3.5058280  | 3238 | 3.5102768  | 3271 | 3.5146805  |
| 3206 | 3.5059635  | 3239 | 3.5104109  | 3272 | 3.5148133  |
| 3207 | 3.5060990  | 3240 | 3.5105450  | 3273 | 3.5149460  |
| 3208 | 3.5062344  | 3241 | 3.5106790  | 3274 | 3.5150787  |
| 3209 | 3.5063697  | 3242 | 3.5108130  | 3275 | 3.5152113  |
| 3210 | 3.5065050  | 3243 | 3.5109469  | 3276 | 3.5153439  |
| 3211 | 3.5066403  | 3244 | 3.5110808  | 3277 | 3.5154764  |
| 3212 | 3.5067755  | 3245 | 3.5112147  | 3278 | 3.5156089  |
| 3213 | 3.5069107  | 3246 | 3.5113485  | 3279 | 3.5157414  |
| 3214 | 3.5070459  | 3247 | 3.5114823  | 3280 | 3.5158738  |
| 3215 | 3.5071810  | 3248 | 3.5116160  | 3281 | 3.5160062  |
| 3216 | 3.5073160  | 3249 | 3.5117497  | 3282 | 3.5161386  |
| 3217 | 3.5074511  | 3250 | 3.5118834  | 3283 | 3.5162709  |
| 3218 | 3.5075860  | 3251 | 3.5120170  | 3284 | 3.5164031  |
| 3219 | 3.5077210  | 3252 | 3.5121505  | 3285 | 3.5165354  |
| 3220 | 3.5078559  | 3253 | 3.5122841  | 3286 | 3.5166676  |
| 3221 | 3.5079907  | 3254 | 3.5124175  | 3287 | 3.5167997  |
| 3222 | 3.5081255  | 3255 | 3.5125510  | 3288 | 3.5169318  |
| 3223 | 3.5082603  | 3256 | 3.5126844  | 3289 | 3.5170639  |
| 3224 | 3.5083950  | 3257 | 3.5128178  | 3290 | 3.5171959  |
| 3225 | 3.5085297  | 3258 | 3.5129511  | 3291 | 3.5173279  |
| 3226 | 3.5086644  | 3259 | 3.5130844  | 3292 | 3.5174598  |
| 3227 | 3.5087990  | 3260 | 3.5132176  | 3293 | 3.5175917  |
| 3228 | 3.5089335  | 3261 | 3.5133508  | 3294 | 3.5177236  |
| 3229 | 3.5090680  | 3262 | 3.5134840  | 3295 | 3.5178554  |
| 3230 | 3.5092025  | 3263 | 3.5136171  | 3296 | 3.5179872  |
| 3231 | 3.5093370  | 3264 | 3.5137501  | 3297 | 3.5181189  |
| 3232 | 3.5094713  | 3265 | 3.5138832  | 3298 | 3.5182506  |
| 3233 | 3.5096057  | 3266 | 3.5140162  | 3299 | 3.5183823  |
| 3234 | 3.5097400  | 3267 | 3.5141491  | 3300 | 3.5185139  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 3301 | 3.5186455 | 3334 | 3.5229656 | 3367 | 3.5272431 |
| 3302 | 3.5187771 | 3335 | 3.5230958 | 3368 | 3.5273721 |
| 3303 | 3.5189086 | 3336 | 3.5232260 | 3369 | 3.5275010 |
| 3304 | 3.5190400 | 3337 | 3.5233562 | 3370 | 3.5276299 |
| 3305 | 3.5191715 | 3338 | 3.5234863 | 3371 | 3.5277588 |
| 3306 | 3.5193028 | 3339 | 3.5236164 | 3372 | 3.5278876 |
| 3307 | 3.5194342 | 3340 | 3.5237465 | 3373 | 3.5280163 |
| 3308 | 3.5195655 | 3341 | 3.5238765 | 3374 | 3.5281451 |
| 3309 | 3.5196968 | 3342 | 3.5240064 | 3375 | 3.5282738 |
| 3310 | 3.5198280 | 3343 | 3.5241364 | 3376 | 3.5284024 |
| 3311 | 3.5199592 | 3344 | 3.5242663 | 3377 | 3.5285311 |
| 3312 | 3.5200903 | 3345 | 3.5243961 | 3378 | 3.5286596 |
| 3313 | 3.5202214 | 3346 | 3.5245259 | 3379 | 3.5287882 |
| 3314 | 3.5203525 | 3347 | 3.5246557 | 3380 | 3.5289167 |
| 3315 | 3.5204835 | 3348 | 3.5247854 | 3381 | 3.5290452 |
| 3316 | 3.5206145 | 3349 | 3.5249151 | 3382 | 3.5291736 |
| 3317 | 3.5207455 | 3350 | 3.5250448 | 3383 | 3.5293020 |
| 3318 | 3.5208764 | 3351 | 3.5251744 | 3384 | 3.5294303 |
| 3319 | 3.5210073 | 3352 | 3.5253040 | 3385 | 3.5295587 |
| 3320 | 3.5211381 | 3353 | 3.5254335 | 3386 | 3.5296869 |
| 3321 | 3.5212689 | 3354 | 3.5255631 | 3387 | 3.5298152 |
| 3322 | 3.5213996 | 3355 | 3.5256925 | 3388 | 3.5299434 |
| 3323 | 3.5215303 | 3356 | 3.5258219 | 3389 | 3.5300716 |
| 3324 | 3.5216610 | 3357 | 3.5259513 | 3390 | 3.5301997 |
| 3325 | 3.5217916 | 3358 | 3.5260807 | 3391 | 3.5303278 |
| 3326 | 3.5219222 | 3359 | 3.5262100 | 3392 | 3.5304558 |
| 3327 | 3.5220528 | 3360 | 3.5263393 | 3393 | 3.5305839 |
| 3328 | 3.5221833 | 3361 | 3.5264685 | 3394 | 3.5307118 |
| 3329 | 3.5223138 | 3362 | 3.5265977 | 3395 | 3.5308398 |
| 3330 | 3.5224442 | 3363 | 3.5267269 | 3396 | 3.5309677 |
| 3331 | 3.5225746 | 3364 | 3.5268560 | 3397 | 3.5310955 |
| 3332 | 3.5227050 | 3365 | 3.5269851 | 3398 | 3.5312234 |
| 3333 | 3.5228353 | 3366 | 3.5271141 | 3399 | 3.5313512 |
| 3334 | 3.5229656 | 3367 | 3.5272431 | 3400 | 3.5314789 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 3401 | 3.5316066  | 3434 | 3.5358003  | 3467 | 3.5399538  |
| 3402 | 3.5317343  | 3435 | 3.5359267  | 3468 | 3.5400791  |
| 3403 | 3.5318619  | 3436 | 3.5360532  | 3469 | 3.5402043  |
| 3404 | 3.5319895  | 3437 | 3.5361795  | 3470 | 3.5403295  |
| 3405 | 3.5321171  | 3438 | 2.5363059  | 3471 | 3.5404546  |
| 3406 | 3.5322446  | 3439 | 3.5364322  | 3472 | 3.5405797  |
| 3407 | 3.5323721  | 3440 | 3.5365584  | 3473 | 3.5407048  |
| 3408 | 3.5324996  | 3441 | 3.5366847  | 3474 | 3.5408298  |
| 3409 | 3.5326270  | 3442 | 3.5368109  | 3475 | 3.5409548  |
| 3410 | 3.5327544  | 3443 | 3.5369370  | 3476 | 3.5410798  |
| 3411 | 3.5328817  | 3444 | 3.5370631  | 3477 | 3.5412047  |
| 3412 | 3.5330090  | 3445 | 3.5371892  | 3478 | 3.5413296  |
| 3413 | 3.5331363  | 3446 | 3.5373153  | 3479 | 3.5414544  |
| 3414 | 3.5332635  | 3447 | 3.5374413  | 3480 | 3.5415792  |
| 3415 | 3.5333907  | 3448 | 3.5375672  | 3481 | 3.5417040  |
| 3416 | 3.5335179  | 3449 | 3.5376932  | 3482 | 3.5418288  |
| 3417 | 3.5336450  | 3450 | 3.5378191  | 3483 | 3.5419535  |
| 3418 | 3.5337721  | 3451 | 3.5379450  | 3484 | 3.5420781  |
| 3419 | 3.5338991  | 3452 | 3.5380708  | 3485 | 3.5422028  |
| 3420 | 3.5340261  | 3453 | 3.5381966  | 3486 | 3.5423274  |
| 3421 | 3.5341531  | 3454 | 3.5383223  | 3487 | 3.5424519  |
| 3422 | 3.5342800  | 3455 | 3.5384481  | 3488 | 3.5425765  |
| 3423 | 3.5344069  | 3456 | 3.5385737  | 3489 | 3.5427010  |
| 3424 | 3.5345338  | 3457 | 3.5386994  | 3490 | 3.5428254  |
| 3425 | 3.5346606  | 3458 | 3.5388250  | 3491 | 3.5429498  |
| 3426 | 3.5347874  | 3459 | 3.5389506  | 3492 | 3.5430742  |
| 3427 | 3.5349141  | 3460 | 3.5390761  | 3493 | 3.5431986  |
| 3428 | 3.5350408  | 3461 | 3.5392016  | 3494 | 3.5433229  |
| 3429 | 3.5351675  | 3462 | 3.5393271  | 3495 | 3.5434472  |
| 3430 | 3.5352941  | 3463 | 3.5394525  | 3496 | 3.5435714  |
| 3431 | 3.5354207  | 3464 | 3.5395779  | 3497 | 3.5436956  |
| 3432 | 3.5355473  | 3465 | 3.5397032  | 3498 | 3.5438198  |
| 3433 | 3.5356738  | 3466 | 3.5398286  | 3499 | 3.5439439  |
| 3434 | 3.5358003  | 3467 | 3.5399538  | 3500 | 3.5440680  |



| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 3501 | 3.5441921  | 3534 | 3.5482665  | 3567 | 3.5523031  |
| 3502 | 3.5443161  | 3535 | 3.5483894  | 3568 | 3.5524248  |
| 3503 | 3.5444401  | 3536 | 3.5485123  | 3569 | 3.5525465  |
| 3504 | 3.5445641  | 3537 | 3.5486351  | 3570 | 3.5526682  |
| 3505 | 3.5446880  | 3538 | 3.5487578  | 3571 | 3.5527898  |
| 3506 | 3.5448119  | 3539 | 3.5488806  | 3572 | 3.5529114  |
| 3507 | 3.5449358  | 3540 | 3.5490033  | 3573 | 3.5530330  |
| 3508 | 3.5450596  | 3541 | 3.5491259  | 3574 | 3.5531545  |
| 3509 | 3.5451834  | 3542 | 3.5492486  | 3575 | 3.5532760  |
| 3510 | 3.5453071  | 3543 | 3.5493712  | 3576 | 3.5533975  |
| 3511 | 3.5454308  | 3544 | 3.5494937  | 3577 | 3.5535189  |
| 3512 | 3.5455545  | 3545 | 3.5496162  | 3578 | 3.5536403  |
| 3513 | 3.5456781  | 3546 | 3.5497387  | 3579 | 3.5537617  |
| 3514 | 3.5458018  | 3547 | 3.5498612  | 3580 | 3.5538830  |
| 3515 | 3.5459253  | 3548 | 3.5499836  | 3581 | 3.5540043  |
| 3516 | 3.5460489  | 3549 | 3.5501060  | 3582 | 3.5541256  |
| 3517 | 3.5461724  | 3550 | 3.5502283  | 3583 | 3.5542468  |
| 3518 | 3.5462958  | 3551 | 3.5503507  | 3584 | 3.5543680  |
| 3519 | 3.5464193  | 3552 | 3.5504730  | 3585 | 3.5544892  |
| 3520 | 3.5465427  | 3553 | 3.5505952  | 3586 | 3.5546103  |
| 3521 | 3.5466660  | 3554 | 3.5507174  | 3587 | 3.5547314  |
| 3522 | 3.5467894  | 3555 | 3.5508396  | 3588 | 3.5548524  |
| 3523 | 3.5469126  | 3556 | 3.5509618  | 3589 | 3.5549735  |
| 3524 | 3.5470359  | 3557 | 3.5510839  | 3590 | 3.5550944  |
| 3525 | 3.5471591  | 3558 | 3.5512059  | 3591 | 3.5552154  |
| 3526 | 3.5472823  | 3559 | 3.5513280  | 3592 | 3.5553363  |
| 3527 | 3.5474055  | 3560 | 3.5514500  | 3593 | 3.5554572  |
| 3528 | 3.5475286  | 3561 | 3.5515720  | 3594 | 3.5555781  |
| 3529 | 3.5476517  | 3562 | 3.5516939  | 3595 | 3.5556989  |
| 3530 | 3.5477747  | 3563 | 3.5518158  | 3596 | 3.5558197  |
| 3531 | 3.5478977  | 3564 | 3.5519377  | 3597 | 3.5559404  |
| 3532 | 3.5480207  | 3565 | 3.5520595  | 3598 | 3.5560612  |
| 3533 | 3.5481436  | 3566 | 3.5521813  | 3599 | 3.5561818  |
| 3534 | 3.5482665  | 3567 | 3.5523031  | 3600 | 3.5563025  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 3601 | 3.5564231  | 3634 | 3.5603849  | 3667 | 3.5643109  |
| 3602 | 3.5565437  | 3635 | 3.5605044  | 3668 | 3.5644293  |
| 3603 | 3.5566643  | 3636 | 3.5609239  | 3669 | 3.5645477  |
| 3604 | 3.5567848  | 3637 | 3.5607433  | 3670 | 3.5646661  |
| 3605 | 3.5569053  | 3638 | 3.5608627  | 3671 | 3.5647844  |
| 3606 | 3.5570257  | 3639 | 3.5609820  | 3672 | 3.5649027  |
| 3607 | 3.5571461  | 3640 | 3.5611014  | 3673 | 3.5650209  |
| 3608 | 3.5572665  | 3641 | 3.5612207  | 3674 | 3.5651392  |
| 3609 | 3.5573869  | 3642 | 3.5613399  | 3675 | 3.5652573  |
| 3610 | 3.5575072  | 3643 | 3.5614592  | 3676 | 3.5653755  |
| 3611 | 3.5576275  | 3644 | 3.5615784  | 3677 | 3.5654936  |
| 3612 | 3.5577477  | 3645 | 3.5616975  | 3678 | 3.5656117  |
| 3613 | 3.5578680  | 3646 | 3.5618167  | 3679 | 3.5657298  |
| 3614 | 3.5579881  | 3647 | 3.5619358  | 3680 | 3.5658478  |
| 3615 | 3.5581083  | 3648 | 3.5620548  | 3681 | 3.5659658  |
| 3616 | 3.5582284  | 3649 | 3.5621739  | 3682 | 3.5660838  |
| 3617 | 3.5583485  | 3650 | 3.5622929  | 3683 | 3.5662017  |
| 3618 | 3.5584686  | 3651 | 3.5624118  | 3684 | 3.5663196  |
| 3619 | 3.5585886  | 3652 | 3.5625308  | 3685 | 3.5664375  |
| 3620 | 3.5587086  | 3653 | 3.5626497  | 3686 | 3.5665553  |
| 3621 | 3.5588285  | 3654 | 3.5627685  | 3687 | 3.5666731  |
| 3622 | 3.5589484  | 3655 | 3.5628874  | 3688 | 3.5667909  |
| 3623 | 3.5590683  | 3656 | 3.5630062  | 3689 | 3.5669087  |
| 3624 | 3.5591882  | 3657 | 3.5631250  | 3690 | 3.5670264  |
| 3625 | 3.5593080  | 3658 | 3.5632437  | 3691 | 3.5671440  |
| 3626 | 3.5594278  | 3659 | 3.5633624  | 3692 | 3.5672617  |
| 3627 | 3.5595476  | 3660 | 3.5634811  | 3693 | 3.5673793  |
| 3628 | 3.5596673  | 3661 | 3.5635997  | 3694 | 3.5674969  |
| 3629 | 3.5597870  | 3662 | 3.5637183  | 3695 | 3.5676144  |
| 3630 | 3.5599066  | 3663 | 3.5638369  | 3696 | 3.5677320  |
| 3631 | 3.5600262  | 3664 | 3.5639555  | 3697 | 3.5678494  |
| 3632 | 3.5601458  | 3665 | 3.5640740  | 3698 | 3.5679669  |
| 3633 | 3.5602654  | 3666 | 3.5641925  | 3699 | 3.5680843  |
| 3634 | 3.5603849  | 3667 | 3.5643109  | 3700 | 3.5682017  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 3701 | 3.5683191 | 3734 | 3.5721743 | 3767 | 3.5759956 |
| 3702 | 3.5684364 | 3735 | 3.5722906 | 3768 | 3.5761109 |
| 3703 | 3.5685537 | 3736 | 3.5724069 | 3769 | 3.5762261 |
| 3704 | 3.5686710 | 3737 | 3.5725231 | 3770 | 3.5763413 |
| 3705 | 3.5687882 | 3738 | 3.5726393 | 3771 | 3.5764565 |
| 3706 | 3.5689054 | 3739 | 3.5727555 | 3772 | 3.5765717 |
| 3707 | 3.5190226 | 3740 | 3.5728716 | 3773 | 3.5766868 |
| 3708 | 3.5691397 | 3741 | 3.5729877 | 3774 | 3.5768019 |
| 3709 | 3.5692568 | 3742 | 3.5731038 | 3775 | 3.5769169 |
| 3710 | 3.5693739 | 3743 | 3.5732198 | 3776 | 3.5770320 |
| 3711 | 3.5694910 | 3744 | 3.5733358 | 3777 | 3.5771470 |
| 3712 | 3.5696080 | 3745 | 3.5734518 | 3778 | 3.5772620 |
| 3713 | 3.5697249 | 3746 | 3.5735678 | 3779 | 3.5773769 |
| 3714 | 3.5698419 | 3747 | 3.5736837 | 3780 | 3.5774918 |
| 3715 | 3.5699588 | 3748 | 3.5737996 | 3781 | 3.5776067 |
| 3716 | 3.5700757 | 3749 | 3.5739154 | 3782 | 3.5777215 |
| 3717 | 3.5701926 | 3750 | 3.5740313 | 3783 | 3.5778363 |
| 3718 | 3.5703094 | 3751 | 3.5741471 | 3784 | 3.5779511 |
| 3719 | 3.5704262 | 3752 | 3.5742628 | 3785 | 3.5780659 |
| 3720 | 3.5705429 | 3753 | 3.5743786 | 3786 | 3.5781806 |
| 3721 | 3.5706597 | 3754 | 3.5744943 | 3787 | 3.5782953 |
| 3722 | 3.5707764 | 3755 | 3.5746099 | 3788 | 3.5784100 |
| 3723 | 3.5708930 | 3756 | 3.5747256 | 3789 | 3.5785246 |
| 3724 | 3.5710097 | 3757 | 3.5748412 | 3790 | 3.5786392 |
| 3725 | 3.5711263 | 3758 | 3.5749568 | 3791 | 3.5787538 |
| 3726 | 3.5712428 | 3759 | 3.5750723 | 3792 | 3.5788683 |
| 3727 | 3.5713594 | 3760 | 3.5751878 | 3793 | 3.5789828 |
| 3728 | 3.5714759 | 3761 | 3.5753033 | 3794 | 3.5790973 |
| 3729 | 3.5715924 | 3762 | 3.5754188 | 3795 | 3.5792118 |
| 3730 | 3.5717088 | 3763 | 3.5755342 | 3796 | 3.5793262 |
| 3731 | 3.5718252 | 3764 | 3.5756496 | 3797 | 3.5794406 |
| 3732 | 3.5719416 | 3765 | 3.5757650 | 3798 | 3.5795550 |
| 3733 | 3.5720580 | 3766 | 3.5758803 | 3799 | 3.5796693 |
| 3734 | 3.5721743 | 3767 | 3.5759956 | 3800 | 3.5797836 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 3801 | 3.5798979  | 3834 | 3.5836521  | 3867 | 3.5873742  |
| 3802 | 3.5800121  | 3835 | 3.5837654  | 3868 | 3.5874865  |
| 3803 | 3.5801263  | 3836 | 3.5838786  | 3869 | 3.5875987  |
| 3804 | 3.5802405  | 3837 | 3.5839918  | 3870 | 3.5877110  |
| 3805 | 3.5803547  | 3838 | 3.5841050  | 3871 | 3.5878232  |
| 3806 | 3.5804688  | 3839 | 3.5842181  | 3872 | 3.5879353  |
| 3807 | 3.5805829  | 3840 | 3.5843312  | 3873 | 3.5880475  |
| 3808 | 3.5806969  | 3841 | 3.5844443  | 3874 | 3.5881596  |
| 3809 | 3.5808110  | 3842 | 3.5845574  | 3875 | 3.5882717  |
| 3810 | 3.5809250  | 3843 | 3.5846704  | 3876 | 3.5883838  |
| 3811 | 3.5810389  | 3844 | 3.5847834  | 3877 | 3.5884958  |
| 3812 | 3.5811529  | 3845 | 3.5848963  | 3878 | 3.5886078  |
| 3813 | 3.5812668  | 3846 | 3.5850093  | 3879 | 3.5887198  |
| 3814 | 3.5813807  | 3847 | 3.5851222  | 3880 | 3.5888317  |
| 3815 | 3.5814945  | 3848 | 3.5852351  | 3881 | 3.5889436  |
| 3816 | 3.5816084  | 3849 | 3.5853479  | 3882 | 3.5890555  |
| 3817 | 3.5817222  | 3850 | 3.5854607  | 3883 | 3.5891674  |
| 3818 | 3.5818359  | 3851 | 3.5855735  | 3884 | 3.5892792  |
| 3819 | 3.5819497  | 3852 | 3.5856863  | 3885 | 3.5893910  |
| 3820 | 3.5820634  | 3853 | 3.5857990  | 3886 | 3.5895028  |
| 3821 | 3.5821770  | 3854 | 3.5859117  | 3887 | 3.5896145  |
| 3822 | 3.5822907  | 3855 | 3.5860244  | 3888 | 3.5897262  |
| 3823 | 3.5824043  | 3856 | 3.5861370  | 3889 | 3.5898379  |
| 3824 | 3.5825179  | 3857 | 3.5862496  | 3890 | 3.5899496  |
| 3825 | 3.5826314  | 3858 | 3.5863622  | 3891 | 3.5900612  |
| 3826 | 3.5827450  | 3859 | 3.5864748  | 3892 | 3.5901728  |
| 3827 | 3.5828585  | 3860 | 3.5865873  | 3893 | 3.5902844  |
| 3828 | 3.5829719  | 3861 | 3.5866998  | 3894 | 3.5903959  |
| 3829 | 3.5830854  | 3862 | 3.5868123  | 3895 | 3.5905075  |
| 3830 | 3.5831988  | 3863 | 3.5869247  | 3896 | 3.5906189  |
| 3831 | 3.5833122  | 3864 | 3.5870371  | 3897 | 3.5907304  |
| 3832 | 3.5834255  | 3865 | 3.5871495  | 3898 | 3.5908418  |
| 3833 | 3.5835388  | 3866 | 3.5872618  | 3899 | 3.5909532  |
| 3834 | 3.5836521  | 3867 | 3.5873742  | 3900 | 3.5910646  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 3901 | 3.5911759 | 3934 | 3.5948344 | 3967 | 3.5984622 |
| 3902 | 3.5912873 | 3935 | 3.5949447 | 3968 | 3.5985717 |
| 3903 | 3.5913985 | 3936 | 3.5950551 | 3969 | 3.5986811 |
| 3904 | 3.5915098 | 3937 | 3.5951654 | 3970 | 3.5987905 |
| 3905 | 3.5916210 | 3938 | 3.5952757 | 3971 | 3.5988999 |
| 3906 | 3.5917322 | 3939 | 3.5953860 | 3972 | 3.5990092 |
| 3907 | 3.5918434 | 3940 | 3.5954962 | 3973 | 3.5991186 |
| 3908 | 3.5919546 | 3941 | 3.5956064 | 3974 | 3.5992279 |
| 3909 | 3.5920657 | 3942 | 3.5957166 | 3975 | 3.5993371 |
| 3910 | 3.5921768 | 3943 | 3.5958268 | 3976 | 3.5994464 |
| 3911 | 3.5922878 | 3944 | 3.5959369 | 3977 | 3.5995556 |
| 3912 | 3.5923988 | 3945 | 3.5960470 | 3978 | 3.5996648 |
| 3913 | 3.5925098 | 3946 | 3.5961571 | 3979 | 3.5997739 |
| 3914 | 3.5926208 | 3947 | 3.5962671 | 3980 | 3.5998831 |
| 3915 | 3.5927318 | 3948 | 3.5963771 | 3981 | 3.5999922 |
| 3916 | 3.5928427 | 3949 | 3.5964871 | 3982 | 3.6001013 |
| 3917 | 3.5929536 | 3950 | 3.5965971 | 3983 | 3.6002103 |
| 3918 | 3.5930644 | 3951 | 3.5967070 | 3984 | 3.6003193 |
| 3919 | 3.5931753 | 3952 | 3.5968169 | 3985 | 3.6004283 |
| 3920 | 3.5932861 | 3953 | 3.5969268 | 3986 | 3.6005373 |
| 3921 | 3.5933968 | 3954 | 3.5970367 | 3987 | 3.6006462 |
| 3922 | 3.5935076 | 3955 | 3.5971465 | 3988 | 3.6007551 |
| 3923 | 3.5936183 | 3956 | 3.5972563 | 3989 | 3.6008640 |
| 3924 | 3.5937290 | 3957 | 3.5973660 | 3990 | 3.6009729 |
| 3925 | 3.5938397 | 3958 | 3.5974758 | 3991 | 3.6010817 |
| 3926 | 3.5939503 | 3959 | 3.5975855 | 3992 | 3.6011905 |
| 3927 | 3.5940609 | 3960 | 3.5976952 | 3993 | 3.6012993 |
| 3928 | 3.5941715 | 3961 | 3.5978048 | 3994 | 3.6014080 |
| 3929 | 3.5942820 | 3962 | 3.5979145 | 3995 | 3.6015168 |
| 3930 | 3.5943925 | 3963 | 3.5980241 | 3996 | 3.6016255 |
| 3931 | 3.5945030 | 3964 | 3.5981336 | 3997 | 3.6017341 |
| 3932 | 3.5946135 | 3965 | 3.5982432 | 3998 | 3.6018428 |
| 3933 | 3.5947239 | 3966 | 3.5983527 | 3999 | 3.6019514 |
| 3934 | 3.5948344 | 3967 | 3.5984622 | 4000 | 3.6020600 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 4001 | 3.6021685 | 4034 | 3.6057359 | 4067 | 3.6092742 |
| 4002 | 3.6022771 | 4035 | 3.6058435 | 4068 | 3.6093819 |
| 4003 | 3.6023856 | 4036 | 3.6059512 | 4069 | 3.6094877 |
| 4004 | 3.6024941 | 4037 | 3.6060587 | 4070 | 3.6095944 |
| 4005 | 3.6026025 | 4038 | 3.6061663 | 4071 | 3.6097011 |
| 4006 | 3.6027109 | 4039 | 3.6062738 | 4072 | 3.6098078 |
| 4007 | 3.6028193 | 4040 | 3.6063814 | 4073 | 3.6099144 |
| 4008 | 3.6029277 | 4041 | 3.6064888 | 4074 | 3.6100210 |
| 4009 | 3.6030361 | 4042 | 3.6065963 | 4075 | 3.6101276 |
| 4010 | 3.6031444 | 4043 | 3.6067037 | 4076 | 3.6102342 |
| 4011 | 3.6032527 | 4044 | 3.6068111 | 4077 | 3.6103407 |
| 4012 | 3.6033609 | 4045 | 3.6069185 | 4078 | 3.6104472 |
| 4013 | 3.6034692 | 4046 | 3.6070259 | 4079 | 3.6105537 |
| 4014 | 3.6035774 | 4047 | 3.6071332 | 4080 | 3.6106602 |
| 4015 | 3.6036855 | 4048 | 3.6072405 | 4081 | 3.6107666 |
| 4016 | 3.6037937 | 4049 | 3.6073478 | 4082 | 3.6108730 |
| 4017 | 3.6039018 | 4050 | 3.6074550 | 4083 | 3.9109794 |
| 4018 | 3.6040099 | 4051 | 3.6075622 | 4084 | 3.6110857 |
| 4019 | 3.6041180 | 4052 | 3.6076694 | 4085 | 3.6111921 |
| 4020 | 3.6042261 | 4053 | 3.6077766 | 4086 | 3.6112984 |
| 4021 | 3.6043341 | 4054 | 3.6078837 | 4087 | 3.6114046 |
| 4022 | 3.6044421 | 4055 | 3.6079909 | 4088 | 3.6115109 |
| 4023 | 3.6045500 | 4056 | 3.6080979 | 4089 | 3.6116171 |
| 4024 | 3.6046580 | 4057 | 3.6082050 | 4090 | 3.6117233 |
| 4025 | 3.6047659 | 4058 | 3.6083120 | 4091 | 3.6118295 |
| 4026 | 3.6048738 | 4059 | 3.6084190 | 4092 | 3.6119356 |
| 4027 | 3.6049816 | 4060 | 3.6085260 | 4093 | 3.6120417 |
| 4028 | 3.6050895 | 4061 | 3.6086330 | 4094 | 3.6121478 |
| 4029 | 3.6051973 | 4062 | 3.6087399 | 4095 | 3.6122539 |
| 4030 | 3.6053050 | 4063 | 3.6088468 | 4096 | 3.6123599 |
| 4031 | 3.6054128 | 4064 | 3.6089537 | 4097 | 3.6124660 |
| 4032 | 3.6055205 | 4065 | 3.6090605 | 4098 | 3.6125720 |
| 4033 | 3.6056282 | 4066 | 3.6091674 | 4099 | 3.6126779 |
| 4034 | 3.6057359 | 4067 | 3.6092742 | 4100 | 3.6127839 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 4101 | 3.6128898 | 4134 | 3.6163705 | 4167 | 3.6198235 |
| 4102 | 3.6129957 | 4135 | 3.6164755 | 4168 | 3.6199277 |
| 4103 | 3.6131015 | 4136 | 3.6165805 | 4169 | 3.6200319 |
| 4104 | 3.6132073 | 4137 | 3.6166855 | 4170 | 3.6201360 |
| 4105 | 3.6133132 | 4138 | 3.6167905 | 4171 | 3.6202402 |
| 4106 | 3.6134189 | 4139 | 3.6168954 | 4172 | 3.6203443 |
| 4107 | 3.6135247 | 4140 | 3.6170003 | 4173 | 3.6204484 |
| 4108 | 3.6136304 | 4141 | 3.6171052 | 4174 | 3.6205524 |
| 4109 | 3.6137361 | 4142 | 3.6172101 | 4175 | 3.6206565 |
| 4110 | 3.6138418 | 4143 | 3.6173149 | 4176 | 3.6207605 |
| 4111 | 3.6139475 | 4144 | 3.6174197 | 4177 | 3.6208645 |
| 4112 | 3.6140531 | 4145 | 3.6175245 | 4178 | 3.6209684 |
| 4113 | 3.6141587 | 4146 | 3.6176293 | 4179 | 3.6210724 |
| 4114 | 3.6142643 | 4147 | 3.6177340 | 4180 | 3.6211763 |
| 4115 | 3.6143698 | 4148 | 3.6178387 | 4181 | 3.6212802 |
| 4116 | 3.6144754 | 4149 | 3.6179434 | 4182 | 3.6213840 |
| 4117 | 3.6145809 | 4150 | 3.6180481 | 4183 | 3.6214879 |
| 4118 | 3.6146863 | 4151 | 3.6181527 | 4184 | 3.6215917 |
| 4119 | 3.6147918 | 4152 | 3.6182573 | 4185 | 3.6216955 |
| 4120 | 3.6148972 | 4153 | 3.6183619 | 4186 | 3.6217992 |
| 4121 | 3.6150026 | 4154 | 3.6184665 | 4187 | 3.6219030 |
| 4122 | 3.6151080 | 4155 | 3.6185710 | 4188 | 3.6220067 |
| 4123 | 3.6152133 | 4156 | 3.6186755 | 4189 | 3.6221104 |
| 4124 | 3.6153187 | 4157 | 3.6187800 | 4190 | 3.6222140 |
| 4125 | 3.6154240 | 4158 | 3.6188845 | 4191 | 3.6223177 |
| 4126 | 3.6155292 | 4159 | 3.6189889 | 4192 | 3.6224213 |
| 4127 | 3.6156345 | 4160 | 3.6190933 | 4193 | 3.6225249 |
| 4128 | 3.6157397 | 4161 | 3.6191977 | 4194 | 3.6226284 |
| 4129 | 3.6158449 | 4162 | 3.6193021 | 4195 | 3.6227320 |
| 4130 | 3.6159501 | 4163 | 3.6194064 | 4196 | 3.6228355 |
| 4131 | 3.6160552 | 4164 | 3.6195107 | 4197 | 3.6229390 |
| 4132 | 3.6161603 | 4165 | 3.6196150 | 4198 | 3.6230424 |
| 4133 | 3.6162654 | 4166 | 3.6197193 | 4199 | 3.6231459 |
| 4134 | 3.6163705 | 4167 | 3.6198235 | 4200 | 3.6232493 |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 4201 | 3.6233527  | 4234 | 3.6267509  | 4267 | 3.6301226  |
| 4202 | 3.6234560  | 4235 | 3.6268534  | 4268 | 3.6302244  |
| 4203 | 3.6235594  | 4236 | 3.6269559  | 4269 | 3.6303262  |
| 4204 | 3.6236627  | 4237 | 3.6270585  | 4270 | 3.6304279  |
| 4205 | 3.6237660  | 4238 | 3.6271610  | 4271 | 3.6305296  |
| 4206 | 3.6238693  | 4239 | 3.6272634  | 4272 | 3.6306312  |
| 4207 | 3.6239725  | 4240 | 3.6273659  | 4273 | 3.6307329  |
| 4208 | 3.6240757  | 4241 | 3.6274683  | 4274 | 3.6308345  |
| 4209 | 3.6241789  | 4242 | 3.6275707  | 4275 | 3.6309361  |
| 4210 | 3.6242821  | 4243 | 3.6276730  | 4276 | 3.6310377  |
| 4211 | 3.6243852  | 4244 | 3.6277754  | 4277 | 3.6311392  |
| 4212 | 3.6244884  | 4245 | 3.6278777  | 4278 | 3.6312408  |
| 4213 | 3.6245915  | 4246 | 3.6279800  | 4279 | 3.6313423  |
| 4214 | 3.6246945  | 4247 | 3.6280823  | 4280 | 3.6314438  |
| 4215 | 3.6247976  | 4248 | 3.6281845  | 4281 | 3.6315452  |
| 4216 | 3.6249006  | 4249 | 3.6282867  | 4282 | 3.6316467  |
| 4217 | 3.7250036  | 4250 | 3.6283889  | 4283 | 3.6317481  |
| 4218 | 3.6251066  | 4251 | 3.6284911  | 4284 | 3.6318495  |
| 4219 | 3.6252095  | 4252 | 3.6285933  | 4285 | 3.6319508  |
| 4220 | 3.6253124  | 4253 | 3.6286954  | 4286 | 3.6320522  |
| 4221 | 3.6254153  | 4254 | 3.6287975  | 4287 | 3.6321535  |
| 4222 | 3.6255182  | 4255 | 3.6288996  | 4288 | 3.6322548  |
| 4223 | 3.6256211  | 4256 | 3.6290016  | 4289 | 3.6323560  |
| 4224 | 3.6257239  | 4257 | 3.6291036  | 4290 | 3.6324573  |
| 4225 | 3.6258267  | 4258 | 3.6292057  | 4291 | 3.6325585  |
| 4226 | 3.6259295  | 4259 | 3.6293076  | 4292 | 3.6326297  |
| 4227 | 3.6260322  | 4260 | 3.6294096  | 4293 | 3.6327609  |
| 4228 | 3.6261350  | 4261 | 3.6295115  | 4294 | 3.6328620  |
| 4229 | 3.6262377  | 4262 | 3.6296134  | 4295 | 3.6329632  |
| 4230 | 3.6263404  | 4263 | 3.6297153  | 4296 | 3.6330643  |
| 4231 | 3.6264430  | 4264 | 3.6298172  | 4297 | 3.6331653  |
| 4232 | 3.6265457  | 4265 | 3.6299190  | 4298 | 3.6332664  |
| 4233 | 3.6266483  | 4266 | 3.6300208  | 4299 | 3.6333674  |
| 4234 | 3.6267509  | 4267 | 3.6301226  | 4300 | 3.6334685  |



| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 4301 | 3.6335694 | 4334 | 3.6368889 | 4367 | 3.6401832 |
| 4302 | 3.6336704 | 4335 | 3.6369891 | 4368 | 3.6402826 |
| 4303 | 3.6337713 | 4336 | 3.6370893 | 4369 | 3.6403820 |
| 4304 | 3.6338723 | 4337 | 3.6371894 | 4370 | 3.6404814 |
| 4305 | 3.6339732 | 4338 | 3.6372895 | 4371 | 3.6405808 |
| 4306 | 3.6340740 | 4339 | 3.6373896 | 4372 | 3.6406802 |
| 4307 | 3.9341749 | 4340 | 3.6374897 | 4373 | 3.6407795 |
| 4308 | 3.6342757 | 4341 | 3.6375898 | 4374 | 3.6408788 |
| 4309 | 3.6343765 | 4342 | 3.6376898 | 4375 | 3.6409781 |
| 4310 | 3.6344773 | 4343 | 3.6377898 | 4376 | 3.6410773 |
| 4311 | 3.6345780 | 4344 | 3.7378898 | 4377 | 3.6411765 |
| 4312 | 3.6346788 | 4345 | 3.6379898 | 4378 | 3.6412758 |
| 4313 | 3.6347795 | 4346 | 3.6380897 | 4379 | 3.6413749 |
| 4314 | 3.6348801 | 4347 | 3.6381896 | 4380 | 3.6414741 |
| 4315 | 3.6349808 | 4348 | 3.6382895 | 4381 | 3.6415733 |
| 4316 | 3.6350814 | 4349 | 3.6383894 | 4382 | 3.6416724 |
| 4317 | 3.6351820 | 4350 | 3.6384893 | 4383 | 3.6417715 |
| 4318 | 3.6352826 | 4351 | 3.6385891 | 4384 | 3.6418705 |
| 4319 | 3.6353832 | 4352 | 3.6386889 | 4385 | 3.6419696 |
| 4320 | 3.6354837 | 4353 | 3.6387887 | 4386 | 3.6420686 |
| 4321 | 3.6355843 | 4354 | 3.6388884 | 4387 | 3.6421676 |
| 4322 | 3.6356848 | 4355 | 3.6389882 | 4388 | 3.6422666 |
| 4323 | 3.6357852 | 4356 | 3.6390879 | 4389 | 3.6423656 |
| 4324 | 3.6358857 | 4357 | 3.6391876 | 4390 | 3.6424645 |
| 4325 | 3.6359861 | 4358 | 3.6392872 | 4391 | 3.6425634 |
| 4326 | 3.6360865 | 4359 | 3.6393869 | 4392 | 3.6426623 |
| 4327 | 3.6361869 | 4360 | 3.6394865 | 4393 | 3.6427612 |
| 4328 | 3.6362872 | 4361 | 3.6395861 | 4394 | 3.6428601 |
| 4329 | 3.6363876 | 4362 | 3.6396857 | 4395 | 3.6429590 |
| 4330 | 3.6364879 | 4363 | 3.9397852 | 4396 | 3.6430577 |
| 4331 | 3.6365882 | 4364 | 3.6398847 | 4397 | 3.6431565 |
| 4332 | 3.6366884 | 4365 | 3.6399842 | 4398 | 3.6432552 |
| 4333 | 3.6367887 | 4366 | 3.6400837 | 4399 | 3.6433540 |
| 4334 | 3.6368889 | 4367 | 3.6401832 | 4400 | 3.6434527 |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 4401 | 3.6435514  | 4434 | 3.6467957  | 4467 | 3.6500160  |
| 4402 | 3.6436500  | 4435 | 3.6468936  | 4468 | 3.6501132  |
| 4403 | 3.6437487  | 4436 | 3.6469915  | 4469 | 3.6502104  |
| 4404 | 3.6438473  | 4437 | 3.6470894  | 4470 | 3.6503075  |
| 4405 | 3.6439459  | 4438 | 3.6471873  | 4471 | 3.6504047  |
| 4406 | 3.6440445  | 4439 | 3.6472851  | 4472 | 3.6505018  |
| 4407 | 3.6441430  | 4440 | 3.6473830  | 4473 | 3.6505989  |
| 4408 | 3.6442416  | 4441 | 3.6474808  | 4474 | 3.6506960  |
| 4409 | 3.6443401  | 4442 | 3.6475785  | 4475 | 3.6507930  |
| 4410 | 3.6444386  | 4443 | 3.6476763  | 4476 | 3.6508901  |
| 4411 | 3.6445371  | 4444 | 3.6477740  | 4477 | 3.6509871  |
| 4412 | 3.6446355  | 4445 | 3.6478718  | 4478 | 3.6510841  |
| 4413 | 3.6447339  | 4446 | 3.6479695  | 4479 | 3.6511811  |
| 4414 | 3.6448323  | 4447 | 3.6480671  | 4480 | 3.6512780  |
| 4415 | 3.6449307  | 4448 | 3.6481648  | 4481 | 3.6513749  |
| 4416 | 3.6450291  | 4449 | 3.6482624  | 4482 | 3.6514719  |
| 4417 | 3.6451274  | 4450 | 3.6483600  | 4483 | 3.6515687  |
| 4418 | 3.6452257  | 4451 | 3.6484576  | 4484 | 3.6516656  |
| 4419 | 3.6453240  | 4452 | 3.6485552  | 4485 | 3.6517624  |
| 4420 | 3.6454223  | 4453 | 3.6486527  | 4486 | 3.6518593  |
| 4421 | 3.6455205  | 4454 | 3.6487502  | 4487 | 3.6519561  |
| 4422 | 3.6456187  | 4455 | 3.6488477  | 4488 | 3.6520528  |
| 4423 | 3.6457169  | 4456 | 3.6489452  | 4489 | 3.6521496  |
| 4424 | 3.6458151  | 4457 | 3.6490426  | 4490 | 3.6522463  |
| 4425 | 3.6459133  | 4458 | 3.6491401  | 4491 | 3.6523430  |
| 4426 | 3.6460114  | 4459 | 3.6492375  | 4492 | 3.6524397  |
| 4427 | 3.6461095  | 4460 | 3.6493349  | 4493 | 3.6525364  |
| 4428 | 3.6462076  | 4461 | 3.6494322  | 4494 | 3.6526331  |
| 4429 | 3.6463057  | 4462 | 3.6495296  | 4495 | 3.6527297  |
| 4430 | 3.6464037  | 4463 | 3.6496269  | 4496 | 3.6528263  |
| 4431 | 3.6465017  | 4464 | 3.6497242  | 4497 | 3.6529229  |
| 4432 | 3.6465997  | 4465 | 3.6498215  | 4498 | 3.6530195  |
| 4433 | 3.6466977  | 4466 | 3.6499187  | 4499 | 3.6531160  |
| 4434 | 3.6467957  | 4467 | 3.6500160  | 4500 | 3.6532125  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 4501 | 3.6533090 | 4534 | 3.6564815 | 4567 | 3.6596310 |
| 4502 | 3.6534055 | 4535 | 3.6565773 | 4568 | 3.6597261 |
| 4503 | 3.6535019 | 4536 | 3.6566730 | 4569 | 3.6598112 |
| 4504 | 3.6535984 | 4537 | 3.6567688 | 4570 | 3.6599162 |
| 4505 | 3.6536948 | 4538 | 3.6568645 | 4571 | 3.6600112 |
| 4506 | 3.6537912 | 4539 | 3.6569602 | 4572 | 3.6601063 |
| 4507 | 3.6538876 | 4540 | 3.6570559 | 4573 | 3.6602012 |
| 4508 | 3.6539839 | 4541 | 3.6571515 | 4574 | 3.6602962 |
| 4509 | 3.6540802 | 4542 | 3.6572471 | 4575 | 3.6603911 |
| 4510 | 3.6541765 | 4543 | 3.6573427 | 4576 | 3.6604860 |
| 4511 | 3.6542728 | 4544 | 3.6574383 | 4577 | 3.6605809 |
| 4512 | 3.6543691 | 4545 | 3.6575339 | 4578 | 3.6606758 |
| 4513 | 3.6544653 | 4546 | 3.6576294 | 4579 | 3.6607706 |
| 4514 | 3.6545616 | 4547 | 3.6577250 | 4580 | 3.6608655 |
| 4515 | 3.6546578 | 4548 | 3.6578205 | 4581 | 3.6609603 |
| 4516 | 3.6547539 | 4549 | 3.6579159 | 4582 | 3.6610551 |
| 4517 | 3.6548501 | 4550 | 3.6580114 | 4583 | 3.6611499 |
| 4518 | 3.6549462 | 4551 | 3.6581068 | 4584 | 3.6612446 |
| 4519 | 3.6550423 | 4552 | 3.6582023 | 4585 | 3.6613393 |
| 4520 | 3.6551384 | 4553 | 3.6582976 | 4586 | 3.6614340 |
| 4521 | 3.6552345 | 4554 | 3.6583930 | 4587 | 3.6615287 |
| 4522 | 3.6553306 | 4555 | 3.6584884 | 4588 | 3.6616234 |
| 4523 | 3.6554266 | 4556 | 3.6585837 | 4589 | 3.6617181 |
| 4524 | 3.6555226 | 4557 | 3.6586790 | 4590 | 3.6618127 |
| 4525 | 3.6556186 | 4558 | 3.6587743 | 4591 | 3.6619073 |
| 4526 | 3.6557145 | 4559 | 3.6588696 | 4592 | 3.6620019 |
| 4527 | 3.6558105 | 4560 | 3.6589648 | 4593 | 3.6620964 |
| 4528 | 3.6559064 | 4561 | 3.6590601 | 4594 | 3.6621910 |
| 4529 | 3.6560023 | 4562 | 3.6591553 | 4595 | 3.6622855 |
| 4530 | 3.6560982 | 4563 | 3.6592505 | 4596 | 3.6623800 |
| 4531 | 3.6561941 | 4564 | 3.6593456 | 4597 | 3.6624745 |
| 4532 | 3.6562899 | 4565 | 3.6594408 | 4598 | 3.6625690 |
| 4533 | 3.6563857 | 4566 | 3.6595359 | 4599 | 3.6626634 |
| 4534 | 3.6564815 | 4567 | 3.6596310 | 4600 | 3.6627578 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 4601 | 3.662852a | 4634 | 3.6659560 | 4667 | 3.6690378 |
| 4602 | 3.6629466 | 4635 | 3.6660497 | 4668 | 3.6691308 |
| 4603 | 3.6630410 | 4636 | 3.6661434 | 4669 | 3.6692239 |
| 4604 | 3.6631353 | 4637 | 3.6662371 | 4670 | 3.6693169 |
| 4605 | 3.6632296 | 4638 | 3.6663307 | 4671 | 3.6694099 |
| 4606 | 3.6633239 | 4639 | 3.6664244 | 4672 | 3.6695028 |
| 4607 | 3.6634182 | 4640 | 3.6665180 | 4673 | 3.6695958 |
| 4608 | 3.6635125 | 4641 | 3.6666116 | 4674 | 3.6696887 |
| 4609 | 3.6636067 | 4642 | 3.6667051 | 4675 | 3.6697816 |
| 4610 | 3.6637009 | 4643 | 3.6667987 | 4676 | 3.6698745 |
| 4611 | 3.6637951 | 4644 | 3.6668922 | 4677 | 3.6699674 |
| 4612 | 3.6638893 | 4645 | 3.6669857 | 4678 | 3.6700602 |
| 4613 | 3.6639835 | 4646 | 3.6670792 | 4679 | 3.6701530 |
| 4614 | 3.6640776 | 4647 | 3.6671727 | 4680 | 3.6702459 |
| 4615 | 3.6641717 | 4648 | 3.6672661 | 4681 | 3.6703386 |
| 4616 | 3.6642658 | 4649 | 3.6673595 | 4682 | 3.6704314 |
| 4617 | 3.6643599 | 4650 | 3.6674530 | 4683 | 3.6705242 |
| 4618 | 3.6644539 | 4651 | 3.6675463 | 4684 | 3.6706169 |
| 4619 | 3.6645480 | 4652 | 3.6676397 | 4685 | 3.6707096 |
| 4620 | 3.6646420 | 4653 | 3.6677331 | 4686 | 3.6708023 |
| 4621 | 3.6647360 | 4654 | 3.6678264 | 4687 | 3.6708950 |
| 4622 | 3.6648299 | 4655 | 3.6679197 | 4688 | 3.6709876 |
| 4623 | 3.6649239 | 4656 | 3.6680130 | 4689 | 3.6710802 |
| 4624 | 3.6650178 | 4657 | 3.6681062 | 4690 | 3.6711728 |
| 4625 | 3.6651117 | 4658 | 3.6681995 | 4691 | 3.6712654 |
| 4626 | 3.6652056 | 4659 | 3.6682927 | 4692 | 3.6713580 |
| 4627 | 3.6652995 | 4660 | 3.6683859 | 4693 | 3.6714506 |
| 4628 | 3.6653933 | 4661 | 3.6684791 | 4694 | 3.6715431 |
| 4629 | 3.6654872 | 4662 | 3.6685723 | 4695 | 3.6716356 |
| 4630 | 3.6655810 | 4663 | 3.6686654 | 4696 | 3.6717281 |
| 4631 | 3.6656748 | 4664 | 3.6687585 | 4697 | 3.6718206 |
| 4632 | 3.6657685 | 4665 | 3.6688516 | 4698 | 3.6719130 |
| 4633 | 3.6658623 | 4666 | 3.6689447 | 4699 | 3.6720054 |
| 4634 | 3.6659560 | 4667 | 3.6690378 | 4700 | 3.6720979 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 4701 | 3.6721903 | 4734 | 3.6752283 | 4767 | 3.6782452 |
| 4702 | 3.6722826 | 4735 | 3.6753200 | 4768 | 3.6783362 |
| 4703 | 3.6723750 | 4736 | 3.6754117 | 4769 | 3.6784273 |
| 4704 | 3.6724673 | 4737 | 3.6755034 | 4770 | 3.6785184 |
| 4705 | 3.6725596 | 4738 | 3.6755951 | 4771 | 3.6786094 |
| 4706 | 3.6726519 | 4739 | 3.6756867 | 4772 | 3.6787004 |
| 4707 | 3.6727442 | 4740 | 3.6757783 | 4773 | 3.6787914 |
| 4708 | 3.6728365 | 4741 | 3.6758700 | 4774 | 3.6788824 |
| 4709 | 3.6729287 | 4742 | 3.6759615 | 4775 | 3.6789734 |
| 4710 | 3.6730209 | 4743 | 3.6760531 | 4776 | 3.6790643 |
| 4711 | 3.6731131 | 4744 | 3.6761447 | 4777 | 3.6791552 |
| 4712 | 3.6732053 | 4745 | 3.6762362 | 4778 | 3.6792461 |
| 4713 | 3.6732974 | 4746 | 3.6763277 | 4779 | 3.6793370 |
| 4714 | 3.6733896 | 4747 | 3.6764192 | 4780 | 3.6794279 |
| 4715 | 3.6734817 | 4748 | 3.6765107 | 4781 | 3.6795187 |
| 4716 | 3.6735738 | 4749 | 3.6766022 | 4782 | 3.6796096 |
| 4717 | 3.6736659 | 4750 | 3.6766936 | 4783 | 3.6797004 |
| 4718 | 3.6737579 | 4751 | 3.6767850 | 4784 | 3.6797912 |
| 4719 | 3.6738500 | 4752 | 3.6768764 | 4785 | 3.6798819 |
| 4720 | 3.6739420 | 4753 | 3.6769678 | 4786 | 3.6799727 |
| 4721 | 3.6740340 | 4754 | 3.6770592 | 4787 | 3.6800634 |
| 4722 | 3.6741260 | 4755 | 3.6771505 | 4788 | 3.6801541 |
| 4723 | 3.6742179 | 4756 | 3.6772418 | 4789 | 3.6802448 |
| 4724 | 3.6743099 | 4757 | 3.6773332 | 4790 | 3.6803355 |
| 4725 | 3.6744018 | 4758 | 3.6774244 | 4791 | 3.6804262 |
| 4726 | 3.6744937 | 4759 | 3.6775157 | 4792 | 3.6805168 |
| 4727 | 3.6745856 | 4760 | 3.6776069 | 4793 | 3.6806074 |
| 4728 | 3.6746775 | 4761 | 3.6776982 | 4794 | 3.6806980 |
| 4729 | 3.6747693 | 4762 | 3.6777894 | 4795 | 3.6807886 |
| 4730 | 3.6748611 | 4763 | 3.6778806 | 4796 | 3.6808792 |
| 4731 | 3.6749529 | 4764 | 3.6779718 | 4797 | 3.6809697 |
| 4732 | 3.6750447 | 4765 | 3.6780629 | 4798 | 3.6810602 |
| 4733 | 3.6751365 | 4766 | 3.6781540 | 4799 | 3.6811507 |
| 4734 | 3.6752283 | 4767 | 3.6782452 | 4800 | 3.6812412 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 4801 | 3.6813317  | 4834 | 3.6843066  | 4867 | 3.6872613  |
| 4802 | 3.6814222  | 4835 | 3.6843965  | 4868 | 3.6873506  |
| 4803 | 3.6815126  | 4836 | 3.6844863  | 4869 | 3.6874398  |
| 4804 | 3.6816030  | 4837 | 3.6845761  | 4870 | 3.6875290  |
| 4805 | 3.6816934  | 4838 | 3.6846659  | 4871 | 3.6876181  |
| 4806 | 3.6817838  | 4839 | 3.6847556  | 4872 | 3.6877073  |
| 4807 | 3.6818741  | 4840 | 3.6848454  | 4873 | 3.6877964  |
| 4808 | 3.6819645  | 4841 | 3.6849351  | 4874 | 3.6878855  |
| 4809 | 3.6820548  | 4842 | 3.6850248  | 4875 | 3.6879746  |
| 4810 | 3.6821451  | 4843 | 3.6851145  | 4876 | 3.6880637  |
| 4811 | 3.6822354  | 4844 | 3.6852041  | 4877 | 3.6881528  |
| 4812 | 3.6823256  | 4845 | 3.6852938  | 4878 | 3.6882418  |
| 4813 | 3.6824159  | 4846 | 3.6853834  | 4879 | 3.6883308  |
| 4814 | 3.6825061  | 4847 | 3.6854730  | 4880 | 3.6884198  |
| 4815 | 3.6825963  | 4848 | 3.6855626  | 4881 | 3.6885088  |
| 4816 | 3.6826865  | 4849 | 3.6856522  | 4882 | 3.6885978  |
| 4817 | 3.6827766  | 4850 | 3.6857417  | 4883 | 3.6886867  |
| 4818 | 3.6828668  | 4851 | 3.6858313  | 4884 | 3.6887756  |
| 4819 | 3.6829569  | 4852 | 3.6859208  | 4885 | 3.6888646  |
| 4820 | 3.6830470  | 4853 | 3.6860103  | 4886 | 3.6889535  |
| 4821 | 3.6831371  | 4854 | 3.6860998  | 4887 | 3.6890423  |
| 4822 | 3.6832272  | 4855 | 3.6861892  | 4888 | 3.6891312  |
| 4823 | 3.6833173  | 4856 | 3.6862787  | 4889 | 3.6892200  |
| 4824 | 3.6834073  | 4857 | 3.6863681  | 4890 | 3.6893089  |
| 4825 | 3.6834973  | 4858 | 3.6864575  | 4891 | 3.6893977  |
| 4826 | 3.6835873  | 4859 | 3.6865469  | 4892 | 3.6894864  |
| 4827 | 3.6836773  | 4860 | 3.6866363  | 4893 | 3.6895752  |
| 4828 | 3.6837673  | 4861 | 3.6867256  | 4894 | 3.6896640  |
| 4839 | 3.6838572  | 4862 | 3.6868149  | 4895 | 3.6897527  |
| 4830 | 3.6839471  | 4863 | 3.6869043  | 4896 | 3.6898414  |
| 4831 | 3.6840370  | 4864 | 3.6869936  | 4897 | 3.6899301  |
| 4832 | 3.6841269  | 4865 | 3.6870828  | 4898 | 3.6900188  |
| 4833 | 3.6842168  | 4866 | 3.6871721  | 4899 | 3.6901074  |
| 4834 | 3.6843066  | 4867 | 3.6872613  | 4900 | 3.6901961  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 4901 | 3.6902847  | 4934 | 3.6931991  | 4967 | 3.6960942  |
| 4902 | 3.6903733  | 4935 | 3.6932872  | 4968 | 3.6961816  |
| 4903 | 3.6904619  | 4936 | 3.6933752  | 4969 | 3.6962690  |
| 4904 | 3.6905505  | 4937 | 3.6934631  | 4970 | 3.6963564  |
| 4905 | 3.6906390  | 4938 | 3.6935511  | 4971 | 3.6964438  |
| 4906 | 3.6907275  | 4939 | 3.6936390  | 4972 | 3.6965311  |
| 4907 | 3.6908161  | 4940 | 3.6937269  | 4973 | 3.6966185  |
| 4908 | 3.6909046  | 4941 | 3.6938148  | 4974 | 3.6967058  |
| 4909 | 3.6909930  | 4942 | 3.6939027  | 4975 | 3.6967931  |
| 4910 | 3.6910815  | 4943 | 3.6939905  | 4976 | 3.6968804  |
| 4911 | 3.6911700  | 4944 | 3.6940784  | 4977 | 3.6969676  |
| 4912 | 3.6912584  | 4945 | 3.6941663  | 4978 | 3.6970549  |
| 4913 | 3.6913469  | 4946 | 3.6942541  | 4979 | 3.6971421  |
| 4914 | 3.6914353  | 4947 | 3.6943420  | 4980 | 3.6972293  |
| 4915 | 3.6915238  | 4948 | 3.6944298  | 4981 | 3.6973165  |
| 4916 | 3.6916122  | 4949 | 3.6945177  | 4982 | 3.6974037  |
| 4917 | 3.6917007  | 4950 | 3.6946055  | 4983 | 3.6974909  |
| 4918 | 3.6917891  | 4951 | 3.6946934  | 4984 | 3.6975780  |
| 4919 | 3.6918776  | 4952 | 3.6947812  | 4985 | 3.6976652  |
| 4920 | 3.6919660  | 4953 | 3.6948691  | 4986 | 3.6977523  |
| 4921 | 3.6920545  | 4954 | 3.6949569  | 4987 | 3.6978394  |
| 4922 | 3.6921429  | 4955 | 3.6950448  | 4988 | 3.6979264  |
| 4923 | 3.6922314  | 4956 | 3.6951326  | 4989 | 3.6980135  |
| 4924 | 3.6923198  | 4957 | 3.6952205  | 4990 | 3.6981005  |
| 4925 | 3.6924083  | 4958 | 3.6953083  | 4991 | 3.6981876  |
| 4926 | 3.6924967  | 4959 | 3.6953962  | 4992 | 3.6982746  |
| 4927 | 3.6925852  | 4960 | 3.6954840  | 4993 | 3.6983616  |
| 4928 | 3.6926736  | 4961 | 3.6955719  | 4994 | 3.6984485  |
| 4929 | 3.6927621  | 4962 | 3.6956597  | 4995 | 3.6985355  |
| 4930 | 3.6928505  | 4963 | 3.6957476  | 4996 | 3.6986224  |
| 4931 | 3.6929390  | 4964 | 3.6958354  | 4997 | 3.6987093  |
| 4932 | 3.6930274  | 4965 | 3.6959233  | 4998 | 3.6987962  |
| 4933 | 3.6931159  | 4966 | 3.6960111  | 4999 | 3.6988831  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 5001 | 3.6990569 | 5034 | 3.7019132 | 5067 | 3.7047509 |
| 5002 | 3.6991437 | 5035 | 3.7019995 | 5068 | 3.7048366 |
| 5003 | 3.6992305 | 5036 | 3.7020857 | 5069 | 3.7049223 |
| 5004 | 3.6993173 | 5037 | 3.7021719 | 5070 | 3.7050080 |
| 5005 | 3.6994041 | 5038 | 3.7022582 | 5071 | 3.7050936 |
| 5006 | 3.6994908 | 5039 | 3.7023444 | 5072 | 3.7051792 |
| 5007 | 3.6995776 | 5040 | 3.7024305 | 5073 | 3.7052649 |
| 5008 | 3.6996643 | 5041 | 3.7025167 | 5074 | 3.7053505 |
| 5009 | 3.6997510 | 5042 | 3.7026028 | 5075 | 3.7054360 |
| 5010 | 3.6998377 | 5043 | 3.7026890 | 5076 | 3.7055216 |
| 5011 | 3.6999244 | 5044 | 3.7027751 | 5077 | 3.7056072 |
| 5012 | 3.7000111 | 5045 | 3.7028612 | 5078 | 3.7056927 |
| 5013 | 3.7000977 | 5046 | 3.7029472 | 5079 | 3.7057782 |
| 5014 | 3.7001843 | 5047 | 3.7030333 | 5080 | 3.7058637 |
| 5015 | 3.7002709 | 5048 | 3.7031193 | 5081 | 3.7059492 |
| 5016 | 3.7003575 | 5049 | 3.7032054 | 5082 | 3.7060347 |
| 5017 | 3.7004441 | 5050 | 3.7032914 | 5083 | 3.7061201 |
| 5018 | 3.7005307 | 5051 | 3.7033774 | 5084 | 3.7062055 |
| 5019 | 3.7006172 | 5052 | 3.7034633 | 5085 | 3.7062910 |
| 5020 | 3.7007037 | 5053 | 3.7035493 | 5086 | 3.7063764 |
| 5021 | 3.7007902 | 5054 | 3.7036352 | 5087 | 3.7064617 |
| 5022 | 3.7008767 | 5055 | 3.7037212 | 5088 | 3.7065471 |
| 5023 | 3.7009632 | 5056 | 3.7038071 | 5089 | 3.7066324 |
| 5024 | 3.7010496 | 5057 | 3.7038929 | 5090 | 3.7067178 |
| 5025 | 3.7011361 | 5058 | 3.7039788 | 5091 | 3.7068031 |
| 5026 | 3.7012225 | 5059 | 3.7040647 | 5092 | 3.7068884 |
| 5027 | 3.7013089 | 5060 | 3.7041505 | 5093 | 3.7069737 |
| 5028 | 3.7013953 | 5061 | 3.7042363 | 5094 | 3.7070589 |
| 5029 | 3.7014816 | 5062 | 3.7043221 | 5095 | 3.7071442 |
| 5030 | 3.7015680 | 5063 | 3.7044079 | 5096 | 3.7072294 |
| 5031 | 3.7016543 | 5064 | 3.7044937 | 5097 | 3.7073146 |
| 5032 | 3.7017406 | 5065 | 3.7045794 | 5098 | 3.7073998 |
| 5033 | 3.7018269 | 5066 | 3.7046652 | 5099 | 3.7074850 |
| 5034 | 3.7019132 | 5067 | 3.7047509 | 5100 | 3.7075702 |



| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 5101 | 3.7076553 | 5134 | 3.7104559 | 5167 | 3.7132385 |
| 5102 | 3.7077405 | 5135 | 3.7105404 | 5168 | 3.7133225 |
| 5103 | 3.7078256 | 5136 | 3.7106250 | 5169 | 3.7134065 |
| 5104 | 3.7079107 | 5137 | 3.7107096 | 5170 | 3.7134905 |
| 5105 | 3.7079957 | 5138 | 3.7107941 | 5171 | 3.7135745 |
| 5106 | 3.7080808 | 5139 | 3.7108786 | 5172 | 3.7136585 |
| 5107 | 3.7081659 | 5140 | 3.7109631 | 5173 | 3.7137425 |
| 5108 | 3.7082509 | 5141 | 3.7110476 | 5174 | 3.7138264 |
| 5109 | 3.7083359 | 5142 | 3.7111321 | 5175 | 3.7139104 |
| 5110 | 3.7084209 | 5143 | 3.7112165 | 5176 | 3.7139943 |
| 5111 | 3.7085059 | 5144 | 3.7113010 | 5177 | 3.7140782 |
| 5112 | 3.7085908 | 5145 | 3.7113854 | 5178 | 3.7141620 |
| 5113 | 3.7086758 | 5146 | 3.7114698 | 5179 | 3.7142459 |
| 5114 | 3.7087607 | 5147 | 3.7115542 | 5180 | 3.7143298 |
| 5115 | 3.7088456 | 5148 | 3.7116385 | 5181 | 3.7144136 |
| 5116 | 3.7089305 | 5149 | 3.7117229 | 5182 | 3.7144974 |
| 5117 | 3.7090154 | 5150 | 3.7118072 | 5183 | 3.7145812 |
| 5118 | 3.7091003 | 5151 | 3.7118915 | 5184 | 3.7146650 |
| 5119 | 3.7091851 | 5152 | 3.7119759 | 5185 | 3.7147488 |
| 5120 | 3.7092700 | 5153 | 3.7120601 | 5186 | 3.7148325 |
| 5121 | 3.7093548 | 5154 | 3.7121444 | 5187 | 3.7149162 |
| 5122 | 3.7094396 | 5155 | 3.7122287 | 5188 | 3.7150000 |
| 5123 | 3.7095244 | 5156 | 3.7123129 | 5189 | 3.7150837 |
| 5124 | 3.7096091 | 5157 | 3.7123971 | 5190 | 3.7151674 |
| 5125 | 3.7096939 | 5158 | 3.7124813 | 5191 | 3.7152510 |
| 5126 | 3.7097786 | 5159 | 3.7125655 | 5192 | 3.7153347 |
| 5127 | 3.7098633 | 5160 | 3.7126497 | 5193 | 3.7154183 |
| 5128 | 3.7099480 | 5161 | 3.7127339 | 5194 | 3.7155019 |
| 5129 | 3.7100327 | 5162 | 3.7128180 | 5195 | 3.7155856 |
| 5130 | 3.7101174 | 5163 | 3.7129021 | 5196 | 3.7156691 |
| 5131 | 3.7102020 | 5164 | 3.7129862 | 5197 | 3.7157527 |
| 5132 | 3.7102866 | 5165 | 3.7130703 | 5198 | 3.7158363 |
| 5133 | 3.7103713 | 5166 | 3.7131544 | 5199 | 3.7159198 |
| 5134 | 3.7104559 | 5167 | 3.7132385 | 5200 | 3.7160033 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 5201 | 3.7160869 | 5234 | 3.7188337 | 5267 | 3.7215633 |
| 5202 | 3.7161703 | 5235 | 3.7189167 | 5268 | 3.7216458 |
| 5203 | 3.7162538 | 5236 | 3.7189996 | 5269 | 3.7217282 |
| 5204 | 3.7163373 | 5237 | 3.7190826 | 5270 | 3.7218106 |
| 5205 | 3.7164207 | 5238 | 3.7191655 | 5271 | 3.7218930 |
| 5206 | 3.7165042 | 5239 | 3.7192484 | 5272 | 3.7219754 |
| 5207 | 3.7165876 | 5240 | 3.7193313 | 5273 | 3.7220578 |
| 5208 | 3.7166710 | 5241 | 3.7194142 | 5274 | 3.7221401 |
| 5209 | 3.7167544 | 5242 | 3.7194970 | 5275 | 3.7222225 |
| 5210 | 3.7168377 | 5243 | 3.7195799 | 5276 | 3.7223048 |
| 5211 | 3.7169211 | 5244 | 3.7196627 | 5277 | 3.7223871 |
| 5212 | 3.7170044 | 5245 | 3.7197455 | 5278 | 3.7224694 |
| 5213 | 3.7170877 | 5246 | 3.7198283 | 5279 | 3.7225517 |
| 5214 | 3.7171710 | 5247 | 3.7199111 | 5280 | 3.7226339 |
| 5215 | 3.7172543 | 5248 | 3.7199938 | 5281 | 3.7227162 |
| 5216 | 3.7173376 | 5249 | 3.7200766 | 5282 | 3.7227984 |
| 5217 | 3.7174208 | 5250 | 3.7201593 | 5283 | 3.7228806 |
| 5218 | 3.7175041 | 5251 | 3.7202420 | 5284 | 3.7229628 |
| 5219 | 3.7175873 | 5252 | 3.7203247 | 5285 | 3.7230450 |
| 5220 | 3.7176705 | 5253 | 3.7204074 | 5286 | 3.7231272 |
| 5221 | 3.7177537 | 5254 | 3.7204901 | 5287 | 3.7232093 |
| 5222 | 3.7178369 | 5255 | 3.7205727 | 5288 | 3.7232914 |
| 5223 | 3.7179200 | 5256 | 3.7206554 | 5289 | 3.7233736 |
| 5224 | 3.7180032 | 5257 | 3.7207380 | 5290 | 3.7234557 |
| 5225 | 3.7180863 | 5258 | 3.7208206 | 5291 | 3.7235378 |
| 5226 | 3.7181694 | 5259 | 3.7209032 | 5292 | 3.7236198 |
| 5227 | 3.7182525 | 5260 | 3.7209857 | 5293 | 3.7237019 |
| 5228 | 3.7183356 | 5261 | 3.7210683 | 5294 | 3.7237839 |
| 5229 | 3.7184186 | 5262 | 3.7211508 | 5295 | 3.7238660 |
| 5230 | 3.7185017 | 5263 | 3.7212334 | 5296 | 3.7239480 |
| 5231 | 3.7185847 | 5264 | 3.7213159 | 5297 | 3.7240300 |
| 5232 | 3.7186677 | 5265 | 3.7213984 | 5298 | 3.7241120 |
| 5233 | 3.7187507 | 5266 | 3.7214809 | 5299 | 3.7241939 |
| 5234 | 3.7188337 | 5267 | 3.7215633 | 5300 | 3.7242759 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 5301 | 3.7243578 | 5334 | 3.7270530 | 5367 | 3.7297316 |
| 5302 | 3.7244397 | 5335 | 3.7271344 | 5368 | 3.7298125 |
| 5303 | 3.7245216 | 5336 | 3.7272158 | 5369 | 3.7298934 |
| 5304 | 3.7246035 | 5337 | 3.7272972 | 5370 | 3.7299743 |
| 5305 | 3.7246854 | 5338 | 3.7273786 | 5371 | 3.7300551 |
| 5306 | 3.7247672 | 5339 | 3.7274599 | 5372 | 3.7301360 |
| 5307 | 3.7248491 | 5340 | 3.7275413 | 5373 | 3.7302168 |
| 5308 | 3.7249309 | 5341 | 3.7276226 | 5374 | 3.7302977 |
| 5309 | 3.7250127 | 5342 | 3.7277039 | 5375 | 3.7303785 |
| 5310 | 3.7250945 | 5343 | 3.7277852 | 5376 | 3.7304593 |
| 5311 | 3.7251763 | 5344 | 3.7278664 | 5377 | 3.7305400 |
| 5312 | 3.7252581 | 5345 | 3.7279477 | 5378 | 3.7306208 |
| 5313 | 3.7253398 | 5346 | 3.7280290 | 5379 | 3.7307015 |
| 5314 | 3.7254215 | 5347 | 3.7281102 | 5380 | 3.7307823 |
| 5315 | 3.7255033 | 5348 | 3.7281914 | 5381 | 3.7308630 |
| 5316 | 3.7255850 | 5349 | 3.7282726 | 5382 | 3.7309437 |
| 5317 | 3.7256667 | 5350 | 3.7283538 | 5383 | 3.7310244 |
| 5318 | 3.7257484 | 5351 | 3.7284349 | 5384 | 3.7311051 |
| 5319 | 3.7258300 | 5352 | 3.7285161 | 5385 | 3.7311857 |
| 5320 | 3.7259116 | 5353 | 3.7285972 | 5386 | 3.7312663 |
| 5321 | 3.7259933 | 5354 | 3.7286784 | 5387 | 3.7313470 |
| 5322 | 3.7260749 | 5355 | 3.7287595 | 5388 | 3.7314276 |
| 5323 | 3.7261565 | 5356 | 3.7288406 | 5389 | 3.7315082 |
| 5324 | 3.7262380 | 5357 | 3.7289216 | 5390 | 3.7315888 |
| 5325 | 3.7263196 | 5358 | 3.7290027 | 5391 | 3.7316693 |
| 5326 | 3.7264012 | 5359 | 3.7290838 | 5392 | 3.7317499 |
| 5327 | 3.7264827 | 5360 | 3.7291648 | 5393 | 3.7318304 |
| 5328 | 3.7265642 | 5361 | 3.7292458 | 5394 | 3.7319109 |
| 5329 | 3.7266457 | 5362 | 3.7293268 | 5395 | 3.7319914 |
| 5330 | 3.7267272 | 5363 | 3.7294078 | 5396 | 3.7320719 |
| 5331 | 3.7268087 | 5364 | 3.7294888 | 5397 | 3.7321524 |
| 5332 | 3.7268901 | 5365 | 3.7295697 | 5398 | 3.7322329 |
| 5333 | 3.7269716 | 5366 | 3.7296507 | 5399 | 3.7323133 |
| 5334 | 3.7270530 | 5367 | 3.7297316 | 5400 | 3.7323938 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 5401 | 3.7324742 | 5434 | 3.7351196 | 5467 | 3.7377491 |
| 5402 | 3.7325546 | 5435 | 3.7351995 | 5468 | 3.7378285 |
| 5403 | 3.7326350 | 5436 | 3.7352794 | 5469 | 3.7379079 |
| 5404 | 3.7327153 | 5437 | 3.7353593 | 5470 | 3.7379873 |
| 5405 | 3.7327957 | 5438 | 3.7354392 | 5471 | 3.7380667 |
| 5406 | 3.7328760 | 5439 | 3.7355191 | 5472 | 3.7381461 |
| 5407 | 3.7329564 | 5440 | 3.7355989 | 5473 | 3.7382254 |
| 5408 | 3.7330367 | 5441 | 3.7356787 | 5474 | 3.7383048 |
| 5409 | 3.7331170 | 5442 | 3.7357585 | 5475 | 3.7383841 |
| 5410 | 3.7331973 | 5443 | 3.7358383 | 5476 | 3.7384634 |
| 5411 | 3.7332775 | 5444 | 3.7359181 | 5477 | 3.7385427 |
| 5412 | 3.7333578 | 5445 | 3.7359979 | 5478 | 3.7386220 |
| 5413 | 3.7334380 | 5446 | 3.7360776 | 5479 | 3.7387013 |
| 5414 | 3.7335182 | 5447 | 3.7361574 | 5480 | 3.7387806 |
| 5415 | 3.7335985 | 5448 | 3.7362371 | 5481 | 3.7388598 |
| 5416 | 3.7336787 | 5449 | 3.7363168 | 5482 | 3.7389390 |
| 5417 | 3.7337588 | 5450 | 3.7363965 | 5483 | 3.7390182 |
| 5418 | 3.7338390 | 5451 | 3.7364762 | 5484 | 3.7390974 |
| 5419 | 3.7339191 | 5452 | 3.7365558 | 5485 | 3.7391766 |
| 5420 | 3.7339993 | 5453 | 3.7366355 | 5486 | 3.7392558 |
| 5421 | 3.7340794 | 5454 | 3.7367151 | 5487 | 3.7393350 |
| 5422 | 3.7341595 | 5455 | 3.7367948 | 5488 | 3.7394141 |
| 5423 | 3.7342396 | 5456 | 3.7368744 | 5489 | 3.7394932 |
| 5424 | 3.7343197 | 5457 | 3.7369540 | 5490 | 3.7395723 |
| 5425 | 3.7343997 | 5458 | 3.7370335 | 5491 | 3.7396514 |
| 5426 | 3.7344798 | 5459 | 3.7371131 | 5492 | 3.7397305 |
| 5427 | 3.7345598 | 5460 | 3.7371926 | 5493 | 3.7398096 |
| 5428 | 3.7346398 | 5461 | 3.7372722 | 5494 | 3.7398886 |
| 5429 | 3.7347198 | 5462 | 3.7373517 | 5495 | 3.7399677 |
| 5430 | 3.7347998 | 5463 | 3.7374312 | 5496 | 3.7400467 |
| 5431 | 3.7348798 | 5464 | 3.7375107 | 5497 | 3.7401257 |
| 5432 | 3.7349598 | 5465 | 3.7375902 | 5498 | 3.7402047 |
| 5433 | 3.7350397 | 5466 | 3.7376696 | 5499 | 3.7402837 |
| 5434 | 3.7351196 | 5467 | 3.7377491 | 5500 | 3.7403627 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 5501 | 3.7404416 | 5534 | 3.7430392 | 5567 | 3.7456212 |
| 5502 | 3.7405206 | 5535 | 3.7431176 | 5568 | 3.7456992 |
| 5503 | 3.7405995 | 5536 | 3.7431961 | 5569 | 3.7457772 |
| 5504 | 3.7406784 | 5537 | 3.7432745 | 5570 | 3.7458552 |
| 5505 | 3.7407573 | 5538 | 3.7433530 | 5571 | 3.7459332 |
| 5506 | 3.7408362 | 5539 | 3.7434314 | 5572 | 3.7460111 |
| 5507 | 3.7409151 | 5540 | 3.7435098 | 5573 | 3.7460870 |
| 5508 | 3.7409939 | 5541 | 3.7435881 | 5574 | 3.7461690 |
| 5509 | 3.7410728 | 5542 | 3.7436665 | 5575 | 3.7462449 |
| 5510 | 3.7411516 | 5543 | 3.7437449 | 5576 | 3.7463228 |
| 5511 | 3.7412304 | 5544 | 3.7438232 | 5577 | 3.7464006 |
| 5512 | 3.7413092 | 5545 | 3.7439015 | 5578 | 3.7464785 |
| 5513 | 3.7413880 | 5546 | 3.7439799 | 5579 | 3.7465564 |
| 5514 | 3.7414668 | 5547 | 3.7440582 | 5580 | 3.7466342 |
| 5515 | 3.7415455 | 5548 | 3.7441365 | 5581 | 3.7467120 |
| 5516 | 3.7416243 | 5549 | 3.7442147 | 5582 | 3.7467898 |
| 5517 | 3.7417030 | 5550 | 3.7442930 | 5583 | 3.7468676 |
| 5518 | 3.7417817 | 5551 | 3.7443712 | 5584 | 3.7469454 |
| 5519 | 3.7418604 | 5552 | 3.7444495 | 5585 | 3.7470232 |
| 5520 | 3.7419391 | 5553 | 3.7445277 | 5586 | 3.7471009 |
| 5521 | 3.7420177 | 5554 | 3.7446059 | 5587 | 3.7471787 |
| 5522 | 3.7420964 | 5555 | 3.7446841 | 5588 | 3.7472564 |
| 5523 | 3.7421750 | 5556 | 3.7447622 | 5589 | 3.7473341 |
| 5524 | 3.7422537 | 5557 | 3.7448404 | 5590 | 3.7474118 |
| 5525 | 3.7423323 | 5558 | 3.7449185 | 5591 | 3.7474895 |
| 5526 | 3.7424109 | 5559 | 3.7449967 | 5592 | 3.7475672 |
| 5527 | 3.7424895 | 5560 | 3.7450748 | 5593 | 3.7476448 |
| 5528 | 3.7425680 | 5561 | 3.7451529 | 5594 | 3.7477225 |
| 5529 | 3.7426466 | 5562 | 3.7452310 | 5595 | 3.7478001 |
| 5530 | 3.7427251 | 5563 | 3.7453091 | 5596 | 3.7478777 |
| 5531 | 3.7428037 | 5564 | 3.7453871 | 5597 | 3.7479553 |
| 5532 | 3.7428822 | 5565 | 3.7454652 | 5598 | 3.7480329 |
| 5533 | 3.7429607 | 5566 | 3.7455432 | 5599 | 3.7481105 |
| 5534 | 3.7430392 | 5567 | 3.7456212 | 5600 | 3.7481880 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 5601 | 3.7482656 | 5634 | 3.7508168 | 5667 | 3.7533532 |
| 5602 | 3.7483431 | 5635 | 3.7508939 | 5668 | 3.7534298 |
| 5603 | 3.7484206 | 5636 | 3.7509710 | 5669 | 3.7535065 |
| 5604 | 3.7484981 | 5637 | 3.7510480 | 5670 | 3.7535831 |
| 5605 | 3.7485756 | 5638 | 3.7511251 | 5671 | 3.7536596 |
| 5606 | 3.7486531 | 5639 | 3.7512021 | 5672 | 3.7537362 |
| 5607 | 3.7487306 | 5640 | 3.7512791 | 5673 | 3.7538128 |
| 5608 | 3.7488080 | 5641 | 3.7513561 | 5674 | 3.7538893 |
| 5609 | 3.7488854 | 5642 | 3.7514331 | 5675 | 3.7539659 |
| 5610 | 3.7489629 | 5643 | 3.7515100 | 5676 | 3.7540424 |
| 5611 | 3.7490403 | 5644 | 3.7515870 | 5677 | 3.7541189 |
| 5612 | 3.7491177 | 5645 | 3.7516639 | 5678 | 3.7541954 |
| 5613 | 3.7491950 | 5646 | 3.7517409 | 5679 | 3.7542719 |
| 5614 | 3.7492724 | 5647 | 3.7518178 | 5680 | 3.7543483 |
| 5615 | 3.7493498 | 5648 | 3.7518947 | 5681 | 3.7544248 |
| 5616 | 3.7494271 | 5649 | 3.7519716 | 5682 | 3.7545012 |
| 5617 | 3.7495044 | 5650 | 3.7520484 | 5683 | 3.7545777 |
| 5618 | 3.7495817 | 5651 | 3.7521253 | 5684 | 3.7546541 |
| 5619 | 3.7496590 | 5652 | 3.7522022 | 5685 | 3.7547305 |
| 5620 | 3.7497363 | 5653 | 3.7522790 | 5686 | 3.7548069 |
| 5621 | 3.7498136 | 5654 | 3.7523558 | 5687 | 3.7548832 |
| 5622 | 3.7498908 | 5655 | 3.7524326 | 5688 | 3.7549596 |
| 5623 | 3.7499681 | 5656 | 3.7525094 | 5689 | 3.7550359 |
| 5624 | 3.7500453 | 5657 | 3.7525862 | 5690 | 3.7551123 |
| 5625 | 3.7501225 | 5658 | 3.7526629 | 5691 | 3.7551886 |
| 5626 | 3.7501997 | 5659 | 3.7527397 | 5692 | 3.7552649 |
| 5627 | 3.7502769 | 5660 | 3.7528164 | 5693 | 3.7553412 |
| 5628 | 3.7503541 | 5661 | 3.7528932 | 5694 | 3.7554175 |
| 5629 | 3.7504312 | 5662 | 3.7529699 | 5695 | 3.7554937 |
| 5630 | 3.7505084 | 5663 | 3.7530466 | 5696 | 3.7555700 |
| 5631 | 3.7505855 | 5664 | 3.7531232 | 5697 | 3.7556462 |
| 5632 | 3.7506626 | 5665 | 3.7531999 | 5698 | 3.7557224 |
| 5633 | 3.7507398 | 5666 | 3.7532766 | 5699 | 3.7557987 |
| 5634 | 3.7508168 | 5667 | 3.7533532 | 5700 | 3.7558749 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 4901 | 3.6902847  | 4934 | 3.6931991  | 4967 | 3.6960942  |
| 4902 | 3.6903733  | 4935 | 3.6932872  | 4968 | 3.6961816  |
| 4903 | 3.6904619  | 4936 | 3.6933752  | 4969 | 3.6962690  |
| 4904 | 3.6905505  | 4937 | 3.6934631  | 4970 | 3.6963564  |
| 4905 | 3.6906390  | 4938 | 3.6935511  | 4971 | 3.6964438  |
| 4906 | 3.6907275  | 4939 | 3.6936390  | 4972 | 3.6965311  |
| 4907 | 3.6908161  | 4940 | 3.6937269  | 4973 | 3.6966185  |
| 4908 | 3.6909046  | 4941 | 3.6938148  | 4974 | 3.6967058  |
| 4909 | 3.6909930  | 4942 | 3.6939027  | 4975 | 3.6967931  |
| 4910 | 3.6910815  | 4943 | 3.6939906  | 4976 | 3.6968804  |
| 4911 | 3.6911699  | 4944 | 3.6940785  | 4977 | 3.6969676  |
| 4912 | 3.6912584  | 4945 | 3.6941663  | 4978 | 3.6970549  |
| 4913 | 3.6913468  | 4946 | 3.6942541  | 4979 | 3.6971421  |
| 4914 | 3.6914352  | 4947 | 3.6943419  | 4980 | 3.6972293  |
| 4915 | 3.6915235  | 4948 | 3.6944297  | 4981 | 3.6973165  |
| 4916 | 3.6916119  | 4949 | 3.6945174  | 4982 | 3.6974037  |
| 4917 | 3.6917002  | 4950 | 3.6946052  | 4983 | 3.6974909  |
| 4918 | 3.6917885  | 4951 | 3.6946929  | 4984 | 3.6975780  |
| 4919 | 3.6918768  | 4952 | 3.6947806  | 4985 | 3.6976652  |
| 4920 | 3.6919651  | 4953 | 3.6948683  | 4986 | 3.6977523  |
| 4921 | 3.6920534  | 4954 | 3.6949560  | 4987 | 3.6978394  |
| 4922 | 3.6921416  | 4955 | 3.6950437  | 4988 | 3.6979264  |
| 4923 | 3.6922298  | 4956 | 3.6951313  | 4989 | 3.6980135  |
| 4924 | 3.6923180  | 4957 | 3.6952189  | 4990 | 3.6981005  |
| 4925 | 3.6924062  | 4958 | 3.6953065  | 4991 | 3.6981876  |
| 4926 | 3.6924944  | 4959 | 3.6953941  | 4992 | 3.6982746  |
| 4927 | 3.6925826  | 4960 | 3.6954817  | 4993 | 3.6983616  |
| 4928 | 3.6926707  | 4961 | 3.6955692  | 4994 | 3.6984485  |
| 4929 | 3.6927588  | 4962 | 3.6956568  | 4995 | 3.6985355  |
| 4930 | 3.6928469  | 4963 | 3.6957443  | 4996 | 3.6986224  |
| 4931 | 3.6929350  | 4964 | 3.6958318  | 4997 | 3.6987093  |
| 4932 | 3.6930231  | 4965 | 3.6959193  | 4998 | 3.6987963  |
| 4933 | 3.6931111  | 4966 | 3.6960067  | 4999 | 3.6988831  |
| 4934 | 3.6931991  | 4967 | 3.6960942  | 5000 | 3.6989700  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 5001 | 3.6990569  | 5034 | 3.7019132  | 5067 | 3.7047509  |
| 5002 | 3.6991437  | 5035 | 3.7019995  | 5068 | 3.7048366  |
| 5003 | 3.6992305  | 5036 | 3.7020857  | 5069 | 3.7049223  |
| 5004 | 3.6993173  | 5037 | 3.7021719  | 5070 | 3.7050080  |
| 5005 | 3.6994041  | 5038 | 3.7022582  | 5071 | 3.7050936  |
| 5006 | 3.6994908  | 5039 | 3.7023444  | 5072 | 3.7051792  |
| 5007 | 3.6995776  | 5040 | 3.7024305  | 5073 | 3.7052649  |
| 5008 | 3.6996643  | 5041 | 3.7025167  | 5074 | 3.7053505  |
| 5009 | 3.6997510  | 5042 | 3.7026028  | 5075 | 3.7054360  |
| 5010 | 3.6998377  | 5043 | 3.7026890  | 5076 | 3.7055216  |
| 5011 | 3.6999244  | 5044 | 3.7027751  | 5077 | 3.7056072  |
| 5012 | 3.7000111  | 5045 | 3.7028612  | 5078 | 3.7056927  |
| 5013 | 3.7000977  | 5046 | 3.7029472  | 5079 | 3.7057782  |
| 5014 | 3.7001843  | 5047 | 3.7030333  | 5080 | 3.7058637  |
| 5015 | 3.7002709  | 5048 | 3.7031193  | 5081 | 3.7059492  |
| 5016 | 3.7003575  | 5049 | 3.7032054  | 5082 | 3.7060347  |
| 5017 | 3.7004441  | 5050 | 3.7032914  | 5083 | 3.7061201  |
| 5018 | 3.7005307  | 5051 | 3.7033774  | 5084 | 3.7062055  |
| 5019 | 3.7006172  | 5052 | 3.7034633  | 5085 | 3.7062910  |
| 5020 | 3.7007037  | 5053 | 3.7035493  | 5086 | 3.7063764  |
| 5021 | 3.7007902  | 5054 | 3.7036352  | 5087 | 3.7064617  |
| 5022 | 3.7008767  | 5055 | 3.7037212  | 5088 | 3.7065471  |
| 5023 | 3.7009632  | 5056 | 3.7038071  | 5089 | 3.7066324  |
| 5024 | 3.7010496  | 5057 | 3.7038929  | 5090 | 3.7067178  |
| 5025 | 3.7011361  | 5058 | 3.7039788  | 5091 | 3.7068031  |
| 5026 | 3.7012225  | 5059 | 3.7040647  | 5092 | 3.7068884  |
| 5027 | 3.7013089  | 5060 | 3.7041505  | 5093 | 3.7069737  |
| 5028 | 3.7013953  | 5061 | 3.7042363  | 5094 | 3.7070589  |
| 5029 | 3.7014816  | 5062 | 3.7043221  | 5095 | 3.7071442  |
| 5030 | 3.7015680  | 5063 | 3.7044079  | 5096 | 3.7072294  |
| 5031 | 3.7016543  | 5064 | 3.7044937  | 5097 | 3.7073146  |
| 5032 | 3.7017406  | 5065 | 3.7045794  | 5098 | 3.7073998  |
| 5033 | 3.7018269  | 5066 | 3.7046652  | 5099 | 3.7074850  |
| 5034 | 3.7019132  | 5067 | 3.7047509  | 5100 | 3.7075702  |



| N.   | Logarithh. | N.   | Logarithh. | N.   | Logarithh. |
|------|------------|------|------------|------|------------|
| 5101 | 3.7076553  | 5134 | 3.7104559  | 5167 | 3.7132385  |
| 5102 | 3.7077405  | 5135 | 3.7105404  | 5168 | 3.7133225  |
| 5103 | 3.7078256  | 5136 | 3.7106250  | 5169 | 3.7134065  |
| 5104 | 3.7079107  | 5137 | 3.7107096  | 5170 | 3.7134905  |
| 5105 | 3.7079957  | 5138 | 3.7107941  | 5171 | 3.7135745  |
| 5106 | 3.7080808  | 5139 | 3.7108786  | 5172 | 3.7136585  |
| 5107 | 3.7081659  | 5140 | 3.7109631  | 5173 | 3.7137425  |
| 5108 | 3.7082509  | 5141 | 3.7110476  | 5174 | 3.7138264  |
| 5109 | 3.7083359  | 5142 | 3.7111321  | 5175 | 3.7139104  |
| 5110 | 3.7084209  | 5143 | 3.7112165  | 5176 | 3.7139943  |
| 5111 | 3.7085059  | 5144 | 3.7113010  | 5177 | 3.7140782  |
| 5112 | 3.7085908  | 5145 | 3.7113854  | 5178 | 3.7141620  |
| 5113 | 3.7086758  | 5146 | 3.7114698  | 5179 | 3.7142459  |
| 5114 | 3.7087607  | 5147 | 3.7115542  | 5180 | 3.7143298  |
| 5115 | 3.7088456  | 5148 | 3.7116385  | 5181 | 3.7144136  |
| 5116 | 3.7089305  | 5149 | 3.7117229  | 5182 | 3.7144974  |
| 5117 | 3.7090154  | 5150 | 3.7118072  | 5183 | 3.7145812  |
| 5118 | 3.7091003  | 5151 | 3.7118915  | 5184 | 3.7146650  |
| 5119 | 3.7091851  | 5152 | 3.7119759  | 5185 | 3.7147488  |
| 5120 | 3.7092700  | 5153 | 3.7120601  | 5186 | 3.7148325  |
| 5121 | 3.7093548  | 5154 | 3.7121444  | 5187 | 3.7149162  |
| 5122 | 3.7094396  | 5155 | 3.7122287  | 5188 | 3.7150000  |
| 5123 | 3.7095244  | 5156 | 3.7123129  | 5189 | 3.7150837  |
| 5124 | 3.7096091  | 5157 | 3.7123971  | 5190 | 3.7151674  |
| 5125 | 3.7096939  | 5158 | 3.7124813  | 5191 | 3.7152510  |
| 5126 | 3.7097786  | 5159 | 3.7125655  | 5192 | 3.7153347  |
| 5127 | 3.7098633  | 5160 | 3.7126497  | 5193 | 3.7154183  |
| 5128 | 3.7099480  | 5161 | 3.7127339  | 5194 | 3.7155019  |
| 5129 | 3.7100327  | 5162 | 3.7128180  | 5195 | 3.7155856  |
| 5130 | 3.7101174  | 5163 | 3.7129021  | 5196 | 3.7156691  |
| 5131 | 3.7102020  | 5164 | 3.7129862  | 5197 | 3.7157527  |
| 5132 | 3.7102866  | 5165 | 3.7130703  | 5198 | 3.7158363  |
| 5133 | 3.7103713  | 5166 | 3.7131544  | 5199 | 3.7159198  |
| 5134 | 3.7104559  | 5167 | 3.7132385  | 5200 | 3.7160033  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 5201 | 3.7160869  | 5234 | 3.7188337  | 5267 | 3.7215633  |
| 5202 | 3.7161703  | 5235 | 3.7189167  | 5268 | 3.7216458  |
| 5203 | 3.7162538  | 5236 | 3.7189996  | 5269 | 3.7217282  |
| 5204 | 3.7163373  | 5237 | 3.7190826  | 5270 | 3.7218106  |
| 5205 | 3.7164207  | 5238 | 3.7191655  | 5271 | 3.7218930  |
| 5206 | 3.7165042  | 5239 | 3.7192484  | 5272 | 3.7219754  |
| 5207 | 3.7165876  | 5240 | 3.7193313  | 5273 | 3.7220578  |
| 5208 | 3.7166710  | 5241 | 3.7194142  | 5274 | 3.7221401  |
| 5209 | 3.7167544  | 5242 | 3.7194970  | 5275 | 3.7222225  |
| 5210 | 3.7168377  | 5243 | 3.7195799  | 5276 | 3.7223048  |
| 5211 | 3.7169211  | 5244 | 3.7196627  | 5277 | 3.7223871  |
| 5212 | 3.7170044  | 5245 | 3.7197455  | 5278 | 3.7224694  |
| 5213 | 3.7170877  | 5246 | 3.7198283  | 5279 | 3.7225517  |
| 5214 | 3.7171710  | 5247 | 3.7199111  | 5280 | 3.7226339  |
| 5215 | 3.7172543  | 5248 | 3.7199938  | 5281 | 3.7227162  |
| 5216 | 3.7173376  | 5249 | 3.7200766  | 5282 | 3.7227984  |
| 5217 | 3.7174208  | 5250 | 3.7201593  | 5283 | 3.7228806  |
| 5218 | 3.7175041  | 5251 | 3.7202420  | 5284 | 3.7229628  |
| 5219 | 3.7175873  | 5252 | 3.7203247  | 5285 | 3.7230450  |
| 5220 | 3.7176705  | 5253 | 3.7204074  | 5286 | 3.7231272  |
| 5221 | 3.7177537  | 5254 | 3.7204901  | 5287 | 3.7232093  |
| 5222 | 3.7178369  | 5255 | 3.7205727  | 5288 | 3.7232914  |
| 5223 | 3.7179200  | 5256 | 3.7206554  | 5289 | 3.7233736  |
| 5224 | 3.7180032  | 5257 | 3.7207380  | 5290 | 3.7234557  |
| 5225 | 3.7180863  | 5258 | 3.7208206  | 5291 | 3.7235378  |
| 5226 | 3.7181694  | 5259 | 3.7209032  | 5292 | 3.7236198  |
| 5227 | 3.7182525  | 5260 | 3.7209857  | 5293 | 3.7237019  |
| 5228 | 3.7183356  | 5261 | 3.7210683  | 5294 | 3.7237839  |
| 5229 | 3.7184186  | 5262 | 3.7211508  | 5295 | 3.7238660  |
| 5230 | 3.7185017  | 5263 | 3.7212334  | 5296 | 3.7239480  |
| 5231 | 3.7185847  | 5264 | 3.7213159  | 5297 | 3.7240300  |
| 5232 | 3.7186677  | 5265 | 3.7213984  | 5298 | 3.7241120  |
| 5233 | 3.7187507  | 5266 | 3.7214809  | 5299 | 3.7241939  |
| 5234 | 3.7188337  | 5267 | 3.7215633  | 5300 | 3.7242759  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 5301 | 3.7243578 | 5334 | 3.7270530 | 5367 | 3.7297316 |
| 5302 | 3.7244397 | 5335 | 3.7271344 | 5368 | 3.7298125 |
| 5303 | 3.7245216 | 5336 | 3.7272158 | 5369 | 3.7298934 |
| 5304 | 3.7246035 | 5337 | 3.7272972 | 5370 | 3.7299743 |
| 5305 | 3.7246854 | 5338 | 3.7273786 | 5371 | 3.7300551 |
| 5306 | 3.7247672 | 5339 | 3.7274599 | 5372 | 3.7301360 |
| 5307 | 3.7248491 | 5340 | 3.7275413 | 5373 | 3.7302168 |
| 5308 | 3.7249309 | 5341 | 3.7276226 | 5374 | 3.7302977 |
| 5309 | 3.7250127 | 5342 | 3.7277039 | 5375 | 3.7303785 |
| 5310 | 3.7250945 | 5343 | 3.7277852 | 5376 | 3.7304593 |
| 5311 | 3.7251763 | 5344 | 3.7278664 | 5377 | 3.7305400 |
| 5312 | 3.7252581 | 5345 | 3.7279477 | 5378 | 3.7306208 |
| 5313 | 3.7253398 | 5346 | 3.7280290 | 5379 | 3.7307015 |
| 5314 | 3.7254215 | 5347 | 3.7281102 | 5380 | 3.7307823 |
| 5315 | 3.7255033 | 5348 | 3.7281914 | 5381 | 3.7308630 |
| 5316 | 3.7255850 | 5349 | 3.7282726 | 5382 | 3.7309437 |
| 5317 | 3.7256667 | 5350 | 3.7283538 | 5383 | 3.7310244 |
| 5318 | 3.7257484 | 5351 | 3.7284349 | 5384 | 3.7311051 |
| 5319 | 3.7258300 | 5352 | 3.7285161 | 5385 | 3.7311857 |
| 5320 | 3.7259116 | 5353 | 3.7285972 | 5386 | 3.7312663 |
| 5321 | 3.7259933 | 5354 | 3.7286784 | 5387 | 3.7313470 |
| 5322 | 3.7260749 | 5355 | 3.7287595 | 5388 | 3.7314276 |
| 5323 | 3.7261565 | 5356 | 3.7288406 | 5389 | 3.7315082 |
| 5324 | 3.7262380 | 5357 | 3.7289216 | 5390 | 3.7315888 |
| 5325 | 3.7263196 | 5358 | 3.7290027 | 5391 | 3.7316693 |
| 5326 | 3.7264012 | 5359 | 3.7290838 | 5392 | 3.7317499 |
| 5327 | 3.7264827 | 5360 | 3.7291648 | 5393 | 3.7318304 |
| 5328 | 3.7265642 | 5361 | 3.7292458 | 5394 | 3.7319109 |
| 5329 | 3.7266457 | 5362 | 3.7293268 | 5395 | 3.7319914 |
| 5330 | 3.7267272 | 5363 | 3.7294078 | 5396 | 3.7320719 |
| 5331 | 3.7268087 | 5364 | 3.7294888 | 5397 | 3.7321524 |
| 5332 | 3.7268901 | 5365 | 3.7295697 | 5398 | 3.7322329 |
| 5333 | 3.7269716 | 5366 | 3.7296507 | 5399 | 3.7323133 |
| 5334 | 3.7270530 | 5367 | 3.7297316 | 5400 | 3.7323938 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 5401 | 3.7324742  | 5434 | 3.7351196  | 5467 | 3.7377491  |
| 5402 | 3.7325546  | 5435 | 3.7351995  | 5468 | 3.7378285  |
| 5403 | 3.7326350  | 5436 | 3.7352794  | 5469 | 3.7379079  |
| 5404 | 3.7327153  | 5437 | 3.7353593  | 5470 | 3.7379873  |
| 5405 | 3.7327957  | 5438 | 3.7354392  | 5471 | 3.7380667  |
| 5406 | 3.7328760  | 5439 | 3.7355191  | 5472 | 3.7381461  |
| 5407 | 3.7329564  | 5440 | 3.7355989  | 5473 | 3.7382254  |
| 5408 | 3.7330367  | 5441 | 3.7356787  | 5474 | 3.7383048  |
| 5409 | 3.7331170  | 5442 | 3.7357585  | 5475 | 3.7383841  |
| 5410 | 3.7331973  | 5443 | 3.7358383  | 5476 | 3.7384634  |
| 5411 | 3.7332775  | 5444 | 3.7359181  | 5477 | 3.7385427  |
| 5412 | 3.7333578  | 5445 | 3.7359979  | 5478 | 3.7386220  |
| 5413 | 3.7334380  | 5446 | 3.7360776  | 5479 | 3.7387013  |
| 5414 | 3.7335182  | 5447 | 3.7361574  | 5480 | 3.7387806  |
| 5415 | 3.7335985  | 5448 | 3.7362371  | 5481 | 3.7388598  |
| 5416 | 3.7336787  | 5449 | 3.7363168  | 5482 | 3.7389390  |
| 5417 | 3.7337588  | 5450 | 3.7363965  | 5483 | 3.7390182  |
| 5418 | 3.7338390  | 5451 | 3.7364762  | 5484 | 3.7390974  |
| 5419 | 3.7339191  | 5452 | 3.7365558  | 5485 | 3.7391766  |
| 5420 | 3.7339993  | 5453 | 3.7366355  | 5486 | 3.7392558  |
| 5421 | 3.7340794  | 5454 | 3.7367151  | 5487 | 3.7393350  |
| 5422 | 3.7341595  | 5455 | 3.7367948  | 5488 | 3.7394141  |
| 5423 | 3.7342396  | 5456 | 3.7368744  | 5489 | 3.7394932  |
| 5424 | 3.7343197  | 5457 | 3.7369540  | 5490 | 3.7395723  |
| 5425 | 3.7343997  | 5458 | 3.7370335  | 5491 | 3.7396514  |
| 5426 | 3.7344798  | 5459 | 3.7371131  | 5492 | 3.7397305  |
| 5427 | 3.7345598  | 5460 | 3.7371926  | 5493 | 3.7398096  |
| 5428 | 3.7346398  | 5461 | 3.7372722  | 5494 | 3.2398886  |
| 5429 | 3.7347198  | 5462 | 3.7373517  | 5495 | 3.7399677  |
| 5430 | 3.7347998  | 5463 | 3.7374312  | 5496 | 3.7400467  |
| 5431 | 3.7348798  | 5464 | 3.7375107  | 5497 | 3.7401257  |
| 5432 | 3.7349598  | 5465 | 3.7375902  | 5498 | 3.7402047  |
| 5433 | 3.7350397  | 5466 | 3.7376696  | 5499 | 3.7402837  |
| 5434 | 3.7351196  | 5467 | 3.7377491  | 5500 | 3.7403627  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 5501 | 3.7404416  | 5534 | 3.7430392  | 5567 | 3.7456212  |
| 5502 | 3.7405206  | 5535 | 3.7431176  | 5568 | 3.7456992  |
| 5503 | 3.7405995  | 5536 | 3.7431961  | 5569 | 3.7457772  |
| 5504 | 3.7406784  | 5537 | 3.7432745  | 5570 | 3.7458552  |
| 5505 | 3.7407573  | 5538 | 3.7433530  | 5571 | 3.7459332  |
| 5506 | 3.7408362  | 5539 | 3.7434314  | 5572 | 3.7460111  |
| 5507 | 3.7409151  | 5540 | 3.7435098  | 5573 | 3.7460870  |
| 5508 | 3.7409939  | 5541 | 3.7435881  | 5574 | 3.7461690  |
| 5509 | 3.7410728  | 5542 | 3.7436665  | 5575 | 3.7462449  |
| 5510 | 3.7411516  | 5543 | 3.7437449  | 5576 | 3.7463228  |
| 5511 | 3.7412304  | 5544 | 3.7438232  | 5577 | 3.7464006  |
| 5512 | 3.7413092  | 5545 | 3.7439015  | 5578 | 3.7464785  |
| 5513 | 3.7413880  | 5546 | 3.7439799  | 5579 | 3.7465564  |
| 5514 | 3.7414668  | 5547 | 3.7440582  | 5580 | 3.7466342  |
| 5515 | 3.7415455  | 5548 | 3.7441365  | 5581 | 3.7467120  |
| 5516 | 3.7416243  | 5549 | 3.7442147  | 5582 | 3.7467898  |
| 5517 | 3.7417030  | 5550 | 3.7442930  | 5583 | 3.7468676  |
| 5518 | 3.7417817  | 5551 | 3.7443712  | 5584 | 3.7469454  |
| 5519 | 3.7418604  | 5552 | 3.7444495  | 5585 | 3.7470232  |
| 5520 | 3.7419391  | 5553 | 3.7445277  | 5586 | 3.7471009  |
| 5521 | 3.7420177  | 5554 | 3.7446059  | 5587 | 3.7471787  |
| 5522 | 3.7420964  | 5555 | 3.7446841  | 5588 | 3.7472564  |
| 5523 | 3.7421750  | 5556 | 3.7447622  | 5589 | 3.7473341  |
| 5524 | 3.7422537  | 5557 | 3.7448404  | 5590 | 3.7474118  |
| 5525 | 3.7423323  | 5558 | 3.7449185  | 5591 | 3.7474895  |
| 5526 | 3.7424109  | 5559 | 3.7449967  | 5592 | 3.7475672  |
| 5527 | 3.7424895  | 5560 | 3.7450748  | 5593 | 3.7476448  |
| 5528 | 3.7425680  | 5561 | 3.7451529  | 5594 | 3.7477225  |
| 5529 | 3.7426466  | 5562 | 3.7452310  | 5595 | 3.7478001  |
| 5530 | 3.7427251  | 5563 | 3.7453091  | 5596 | 3.7478777  |
| 5531 | 3.7428037  | 5564 | 3.7453871  | 5597 | 3.7479553  |
| 5532 | 3.7428822  | 5565 | 3.7454652  | 5598 | 3.7480329  |
| 5533 | 3.7429607  | 5566 | 3.7455432  | 5599 | 3.7481105  |
| 5534 | 3.7430392  | 5567 | 3.7456212  | 5600 | 3.7481880  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 5601 | 3.7482656  | 5634 | 3.7508168  | 5667 | 3.7533532  |
| 5602 | 3.7483431  | 5635 | 3.7508939  | 5668 | 3.7534298  |
| 5603 | 3.7484206  | 5636 | 3.7509710  | 5669 | 3.7535065  |
| 5604 | 3.7484981  | 5637 | 3.7510480  | 5670 | 3.7535831  |
| 5605 | 3.7485756  | 5638 | 3.7511251  | 5671 | 3.7536596  |
| 5606 | 3.7486531  | 5639 | 3.7512021  | 5672 | 3.7537362  |
| 5607 | 3.7487306  | 5640 | 3.7512791  | 5673 | 3.7538128  |
| 5608 | 3.7488080  | 5641 | 3.7513561  | 5674 | 3.7538893  |
| 5609 | 3.7488854  | 5642 | 3.7514331  | 5675 | 3.7539659  |
| 5610 | 3.7489629  | 5643 | 3.7515100  | 5676 | 3.7540424  |
| 5611 | 3.7490403  | 5644 | 3.7515870  | 5677 | 3.7541189  |
| 5612 | 3.7491177  | 5645 | 3.7516639  | 5678 | 3.7541954  |
| 5613 | 3.7491950  | 5646 | 3.7517409  | 5679 | 3.7542719  |
| 5614 | 3.7492724  | 5647 | 3.7518178  | 5680 | 3.7543483  |
| 5615 | 3.7493498  | 5648 | 3.7518947  | 5681 | 3.7544248  |
| 5616 | 3.7494271  | 5649 | 3.7519716  | 5682 | 3.7545012  |
| 5617 | 3.7495044  | 5650 | 3.7520484  | 5683 | 3.7545777  |
| 5618 | 3.7495817  | 5651 | 3.7521253  | 5684 | 3.7546541  |
| 5619 | 3.7496590  | 5652 | 3.7522022  | 5685 | 3.7547305  |
| 5620 | 3.7497363  | 5653 | 3.7522790  | 5686 | 3.7548069  |
| 5621 | 3.7498136  | 5654 | 3.7523558  | 5687 | 3.7548832  |
| 5622 | 3.7498908  | 5655 | 3.7524326  | 5688 | 3.7549596  |
| 5623 | 3.7499681  | 5656 | 3.7525094  | 5689 | 3.7550359  |
| 5624 | 3.7500453  | 5657 | 3.7525862  | 5690 | 3.7551123  |
| 5625 | 3.7501225  | 5658 | 3.7526629  | 5691 | 3.7551886  |
| 5626 | 3.7501997  | 5659 | 3.7527397  | 5692 | 3.7552649  |
| 5627 | 3.7502769  | 5660 | 3.7528164  | 5693 | 3.7553412  |
| 5628 | 3.7503541  | 5661 | 3.7528932  | 5694 | 3.7554175  |
| 5629 | 3.7504312  | 5662 | 3.7529699  | 5695 | 3.7554937  |
| 5630 | 3.7505084  | 5663 | 3.7530466  | 5696 | 3.7555700  |
| 5631 | 3.7505855  | 5664 | 3.7531232  | 5697 | 3.7556462  |
| 5632 | 3.7506626  | 5665 | 3.7531999  | 5698 | 3.7557224  |
| 5633 | 3.7507398  | 5666 | 3.7532766  | 5699 | 3.7557987  |
| 5634 | 3.7508168  | 5667 | 3.7533532  | 5700 | 3.7558749  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 5701 | 3.7559510  | 5734 | 3.7584577  | 5767 | 3.7609500  |
| 5702 | 3.7560272  | 5735 | 3.7585334  | 5768 | 3.7610253  |
| 5703 | 3.7561034  | 5736 | 3.7586091  | 5769 | 3.7611005  |
| 5704 | 3.7561795  | 5737 | 3.7586848  | 5770 | 3.7611758  |
| 5705 | 3.7562556  | 5738 | 3.7587605  | 5771 | 3.7612511  |
| 5706 | 3.7563318  | 5739 | 3.7588362  | 5772 | 3.7613263  |
| 5707 | 3.7564079  | 5740 | 3.7589119  | 5773 | 3.7614016  |
| 5708 | 3.7564840  | 5741 | 3.7589875  | 5774 | 3.7614768  |
| 5709 | 3.7565600  | 5742 | 3.7590632  | 5775 | 3.7615520  |
| 5710 | 3.7566361  | 5743 | 3.7591388  | 5776 | 3.7616272  |
| 5711 | 3.7567122  | 5744 | 3.7592144  | 5777 | 3.7617024  |
| 5712 | 3.7567882  | 5745 | 3.7592900  | 5778 | 3.7617775  |
| 5713 | 3.7568642  | 5746 | 3.7593656  | 5779 | 3.7618527  |
| 5714 | 3.7569402  | 5747 | 3.7594412  | 5780 | 3.7619278  |
| 5715 | 3.7570162  | 5748 | 3.7595168  | 5781 | 3.7620030  |
| 5716 | 3.7570922  | 5749 | 3.7595923  | 5782 | 3.7620781  |
| 5717 | 3.7571682  | 5750 | 3.7596678  | 5783 | 3.7621532  |
| 5718 | 3.7572441  | 5751 | 3.7597434  | 5784 | 3.7622283  |
| 5719 | 3.7573201  | 5752 | 3.7598189  | 5785 | 3.7623034  |
| 5720 | 3.7573960  | 5753 | 3.7598944  | 5786 | 3.7623784  |
| 5721 | 3.7574719  | 5754 | 3.7599699  | 5787 | 3.7624535  |
| 5722 | 3.7575479  | 5755 | 3.7600453  | 5788 | 3.7625285  |
| 5723 | 3.7576237  | 5756 | 3.7601208  | 5789 | 3.7626035  |
| 5724 | 3.7576996  | 5757 | 3.7601962  | 5790 | 3.7626786  |
| 5725 | 3.7577755  | 5758 | 3.7602717  | 5791 | 3.7627536  |
| 5726 | 3.7578513  | 5759 | 3.7603471  | 5792 | 3.7628286  |
| 5727 | 3.7579272  | 5760 | 3.7604225  | 5793 | 3.7629035  |
| 5728 | 3.7580030  | 5761 | 3.7604979  | 5794 | 3.7629785  |
| 5729 | 3.7580788  | 5762 | 3.7605733  | 5795 | 3.7630534  |
| 5730 | 3.7581546  | 5763 | 3.7606486  | 5796 | 3.7631284  |
| 5731 | 3.7582304  | 5764 | 3.7607240  | 5797 | 3.7632033  |
| 5732 | 3.7583062  | 5765 | 3.7607993  | 5798 | 3.7632782  |
| 5733 | 3.7583819  | 5766 | 3.7608746  | 5799 | 3.7633531  |
| 5734 | 3.7584577  | 5767 | 3.7609500  | 5800 | 3.7634280  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 5801 | 3.7635029  | 5834 | 3.7659664  | 5867 | 3.7684161  |
| 5802 | 3.7635777  | 5835 | 3.7660409  | 5868 | 3.7684901  |
| 5803 | 3.7636526  | 5836 | 3.7661153  | 5869 | 3.7685641  |
| 5804 | 3.7637274  | 5837 | 3.7661897  | 5870 | 3.7686381  |
| 5805 | 3.7638022  | 5838 | 3.7662641  | 5871 | 3.7687121  |
| 5806 | 3.7638770  | 5839 | 3.7663385  | 5872 | 3.7687860  |
| 5807 | 3.7639518  | 5840 | 3.7664128  | 5873 | 3.7688600  |
| 5808 | 3.7640266  | 5841 | 3.7664872  | 5874 | 3.7689339  |
| 5809 | 3.7641014  | 5842 | 3.7665616  | 5875 | 3.7690079  |
| 5810 | 3.7641761  | 5843 | 3.7666359  | 5876 | 3.7690818  |
| 5811 | 3.7642509  | 5844 | 3.7667102  | 5877 | 3.7691557  |
| 5812 | 3.7643256  | 5845 | 3.7667845  | 5878 | 3.7692296  |
| 5813 | 3.7644003  | 5846 | 3.7668588  | 5879 | 3.7693035  |
| 5814 | 3.7644750  | 5847 | 3.7669331  | 5880 | 3.7693773  |
| 5815 | 3.7645497  | 5848 | 3.7670074  | 5881 | 3.7694512  |
| 5816 | 3.7646244  | 5849 | 3.7670816  | 5882 | 3.7695250  |
| 5817 | 3.7646991  | 5850 | 3.7671559  | 5883 | 3.7695988  |
| 5818 | 3.7647737  | 5851 | 3.7672301  | 5884 | 3.7696727  |
| 5819 | 3.7648484  | 5852 | 3.7673043  | 5885 | 3.7697465  |
| 5820 | 3.7649230  | 5853 | 3.7673785  | 5886 | 3.7698203  |
| 5821 | 3.7649976  | 5854 | 3.7674527  | 5887 | 3.7698940  |
| 5822 | 3.7650722  | 5855 | 3.7675269  | 5888 | 3.7699678  |
| 5823 | 3.7651468  | 5856 | 3.7676011  | 5889 | 3.7700416  |
| 5824 | 3.7652214  | 5857 | 3.7676752  | 5890 | 3.7701153  |
| 5825 | 3.7652959  | 5858 | 3.7677494  | 5891 | 3.7701890  |
| 5826 | 3.7653705  | 5859 | 3.7678235  | 5892 | 3.7702627  |
| 5827 | 3.7654450  | 5860 | 3.7678976  | 5893 | 3.7703364  |
| 5828 | 3.7655195  | 5861 | 3.7679717  | 5894 | 3.7704101  |
| 5829 | 3.7655941  | 5862 | 3.7680458  | 5895 | 3.7704838  |
| 5830 | 3.7656686  | 5863 | 3.7681199  | 5896 | 3.7705575  |
| 5831 | 3.7657430  | 5864 | 3.7681940  | 5897 | 3.7706311  |
| 5832 | 3.7658175  | 5865 | 3.7682680  | 5898 | 3.7707048  |
| 5833 | 3.7658920  | 5866 | 3.7683421  | 5899 | 3.7707784  |
| 5834 | 3.7659664  | 5867 | 3.7684161  | 5900 | 3.7708520  |



| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 5901 | 3.7709256  | 5934 | 3.7733475  | 5967 | 3.7757560  |
| 5902 | 3.7709992  | 5935 | 3.7734207  | 5968 | 3.7758288  |
| 5903 | 3.7710728  | 5936 | 3.7734939  | 5969 | 3.7759016  |
| 5904 | 3.7711463  | 5937 | 3.7735670  | 5970 | 3.7759743  |
| 5905 | 3.7712199  | 5938 | 3.7736402  | 5971 | 3.7760471  |
| 5906 | 3.7712934  | 5939 | 3.7737133  | 5972 | 3.7761198  |
| 5907 | 3.7713670  | 5940 | 3.7737864  | 5973 | 3.7761925  |
| 5908 | 3.7714405  | 5941 | 3.7738596  | 5974 | 3.7762652  |
| 5909 | 3.7715140  | 5942 | 3.7739326  | 5975 | 3.7763379  |
| 5910 | 3.7715875  | 5943 | 3.7740057  | 5976 | 3.7764106  |
| 5911 | 3.7716610  | 5944 | 3.7740788  | 5977 | 3.7764833  |
| 5912 | 3.7717344  | 5945 | 3.7741519  | 5978 | 3.7765559  |
| 5913 | 3.7718079  | 5946 | 3.7742249  | 5979 | 3.7766286  |
| 5914 | 3.7718813  | 5947 | 3.7742979  | 5980 | 3.7767012  |
| 5915 | 3.7719547  | 5948 | 3.7743710  | 5981 | 3.7767738  |
| 5916 | 3.7720282  | 5949 | 3.7744440  | 5982 | 3.7768464  |
| 5917 | 3.7721016  | 5950 | 3.7745170  | 5983 | 3.7769190  |
| 5918 | 3.7721750  | 5951 | 3.7745899  | 5984 | 3.7769916  |
| 5919 | 3.7722483  | 5952 | 3.7746629  | 5985 | 3.7770642  |
| 5920 | 3.7723217  | 5953 | 3.7747359  | 5986 | 3.7771367  |
| 5921 | 3.7723951  | 5954 | 3.7748088  | 5987 | 3.7772093  |
| 5922 | 3.7724684  | 5955 | 3.7748818  | 5988 | 3.7772818  |
| 5923 | 3.7725417  | 5956 | 3.7749547  | 5989 | 3.7773543  |
| 5924 | 3.7726150  | 5957 | 3.7750276  | 5990 | 3.7774268  |
| 5925 | 3.7726884  | 5958 | 3.7751005  | 5991 | 3.7774993  |
| 5926 | 3.7727616  | 5959 | 3.7751734  | 5992 | 3.7775718  |
| 5927 | 3.7728349  | 5960 | 3.7752463  | 5993 | 3.7776443  |
| 5928 | 3.7729082  | 5961 | 3.7753191  | 5994 | 3.7777167  |
| 5929 | 3.7729814  | 5962 | 3.7753920  | 5995 | 3.7777892  |
| 5930 | 3.7730547  | 5963 | 3.7754648  | 5996 | 3.7778616  |
| 5931 | 3.7731279  | 5964 | 3.7755376  | 5997 | 3.7779340  |
| 5932 | 3.7732011  | 5965 | 3.7756104  | 5998 | 3.7780065  |
| 5933 | 3.7732743  | 5966 | 3.7756832  | 5999 | 3.7780789  |
| 5934 | 3.7733475  | 5967 | 3.7757560  | 6000 | 3.7781512  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 6001 | 3.7782236  | 6034 | 3.7806053  | 6067 | 3.7829740  |
| 6002 | 3.7782960  | 6035 | 3.7806773  | 6068 | 3.7830456  |
| 6003 | 3.7783683  | 6036 | 3.7807492  | 6069 | 3.7831171  |
| 6004 | 3.7784407  | 6037 | 3.7808212  | 6070 | 3.7831887  |
| 6005 | 3.7785130  | 6038 | 3.7808931  | 6071 | 3.7832602  |
| 6006 | 3.7785853  | 6039 | 3.7809650  | 6072 | 3.7833318  |
| 6007 | 3.7786576  | 6040 | 3.7810369  | 6073 | 3.7834033  |
| 6008 | 3.7787299  | 6041 | 3.7811088  | 6074 | 3.7834748  |
| 6009 | 3.7788022  | 6042 | 3.7811807  | 6075 | 3.7835463  |
| 6010 | 3.7788745  | 6043 | 3.7812526  | 6076 | 3.7836178  |
| 6011 | 3.7789467  | 6044 | 3.7813245  | 6077 | 3.7836892  |
| 6012 | 3.7790190  | 6045 | 3.7813963  | 6078 | 3.7837607  |
| 6013 | 3.7790912  | 6046 | 3.7814681  | 6079 | 3.7838321  |
| 6014 | 3.7791634  | 6047 | 3.7815400  | 6080 | 3.7839036  |
| 6015 | 3.7792356  | 6048 | 3.7816118  | 6081 | 3.7839750  |
| 6016 | 3.7793078  | 6049 | 3.7816836  | 6082 | 3.7840464  |
| 6017 | 3.7793800  | 6050 | 3.7817554  | 6083 | 3.7841178  |
| 6018 | 3.7794522  | 6051 | 3.7818272  | 6084 | 3.7841892  |
| 6019 | 3.7795243  | 6052 | 3.7818989  | 6085 | 3.7842606  |
| 6020 | 3.7795965  | 6053 | 3.7819707  | 6086 | 3.7843319  |
| 6021 | 3.7796686  | 6054 | 3.7820424  | 6087 | 3.7844033  |
| 6022 | 3.7797408  | 6055 | 3.7821141  | 6088 | 3.7844746  |
| 6023 | 3.7798129  | 6056 | 3.7821859  | 6089 | 3.7845460  |
| 6024 | 3.7798850  | 6057 | 3.7822576  | 6090 | 3.7846173  |
| 6025 | 3.7799571  | 6058 | 3.7823293  | 6091 | 3.7846886  |
| 6026 | 3.7800291  | 6059 | 3.7824010  | 6092 | 3.7847599  |
| 6027 | 3.7801012  | 6060 | 3.7824726  | 6093 | 3.7848312  |
| 6028 | 3.7801732  | 6061 | 3.7825443  | 6094 | 3.7849024  |
| 6029 | 3.7802453  | 6062 | 3.7826159  | 6095 | 3.7849737  |
| 6030 | 3.7803173  | 6063 | 3.7826876  | 6096 | 3.7850450  |
| 6031 | 3.7803893  | 6064 | 3.7827592  | 6097 | 3.7851162  |
| 6032 | 3.7804613  | 6065 | 3.7828308  | 6098 | 3.7851874  |
| 6033 | 3.7805333  | 6066 | 3.7829024  | 6099 | 3.7852586  |
| 6034 | 3.7806053  | 6067 | 3.7829740  | 6100 | 3.7853298  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 6101 | 3.7854010 | 6134 | 3.7877438 | 6167 | 3.7900739 |
| 6102 | 3.7854722 | 6135 | 3.7878146 | 6168 | 3.7901444 |
| 6103 | 3.7855434 | 6136 | 3.7878853 | 6169 | 3.7902148 |
| 6104 | 3.7856145 | 6137 | 3.7879561 | 6170 | 3.7902852 |
| 6105 | 3.7856857 | 6138 | 3.7880269 | 6171 | 3.7903555 |
| 6106 | 3.7857568 | 6139 | 3.7880976 | 6172 | 3.7904259 |
| 6107 | 3.7858279 | 6140 | 3.7881684 | 6173 | 3.7904963 |
| 6108 | 3.7858990 | 6141 | 3.7882391 | 6174 | 3.7905666 |
| 6109 | 3.7859701 | 6142 | 3.7883098 | 6175 | 3.7906370 |
| 6110 | 3.7860412 | 6143 | 3.7883805 | 6176 | 3.7907073 |
| 6111 | 3.7861123 | 6144 | 3.7884512 | 6177 | 3.7907776 |
| 6112 | 3.7861833 | 6145 | 3.7885219 | 6178 | 3.7908479 |
| 6113 | 3.7862544 | 6146 | 3.7885926 | 6179 | 3.7909182 |
| 6114 | 3.7863254 | 6147 | 3.7886632 | 6180 | 3.7909885 |
| 6115 | 3.7863965 | 6148 | 3.7887339 | 6181 | 3.7910587 |
| 6116 | 3.7864675 | 6149 | 3.7888045 | 6182 | 3.7911290 |
| 6117 | 3.7865385 | 6150 | 3.7888751 | 6183 | 3.7911992 |
| 6118 | 3.7866095 | 6151 | 3.7889457 | 6184 | 3.7912695 |
| 6119 | 3.7866805 | 6152 | 3.7890163 | 6185 | 3.7913397 |
| 6120 | 3.7867514 | 6153 | 3.7890869 | 6186 | 3.7914099 |
| 6121 | 3.7868224 | 6154 | 3.7891575 | 6187 | 3.7914801 |
| 6122 | 3.7868933 | 6155 | 3.7892281 | 6188 | 3.7915503 |
| 6123 | 3.7869643 | 6156 | 3.7892986 | 6189 | 3.7916205 |
| 6124 | 3.7870352 | 6157 | 3.7893691 | 6190 | 3.7916906 |
| 6125 | 3.7871061 | 6158 | 3.7894397 | 6191 | 3.7917608 |
| 6126 | 3.7871770 | 6159 | 3.7895102 | 6192 | 3.7918309 |
| 6127 | 3.7872479 | 6160 | 3.7895807 | 6193 | 3.7919011 |
| 6128 | 3.7873188 | 6161 | 3.7896512 | 6194 | 3.7919712 |
| 6129 | 3.7873896 | 6162 | 3.7897217 | 6195 | 3.7920413 |
| 6130 | 3.7874605 | 6163 | 3.7897922 | 6196 | 3.7921114 |
| 6131 | 3.7875313 | 6164 | 3.7898626 | 6197 | 3.7921815 |
| 6132 | 3.7876021 | 6165 | 3.7899331 | 6198 | 3.7922516 |
| 6133 | 3.7876730 | 6166 | 3.7900035 | 6199 | 3.7923216 |
| 6134 | 3.7877438 | 6167 | 3.7900739 | 6200 | 3.7923917 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 6201 | 3.7924617  | 6234 | 3.7947668  | 6267 | 3.7970597  |
| 6202 | 3.7925318  | 6235 | 3.7948365  | 6268 | 3.7971290  |
| 6203 | 3.7926018  | 6236 | 3.7949061  | 6269 | 3.7971983  |
| 6204 | 3.7926718  | 6237 | 3.7949757  | 6270 | 3.7972675  |
| 6205 | 3.7927418  | 6238 | 3.7950454  | 6271 | 3.7973368  |
| 6206 | 3.7928118  | 6239 | 3.7951150  | 6272 | 3.7974060  |
| 6207 | 3.7928817  | 6240 | 3.7951846  | 6273 | 3.7974753  |
| 6208 | 3.7929517  | 6241 | 3.7952542  | 6274 | 3.7975445  |
| 6209 | 3.7930217  | 6242 | 3.7953238  | 6275 | 3.7976137  |
| 6210 | 3.7930916  | 6243 | 3.7953933  | 6276 | 3.7976829  |
| 6211 | 3.7931615  | 6244 | 3.7954629  | 6277 | 3.7977521  |
| 6212 | 3.7932314  | 6245 | 3.7955324  | 6278 | 3.7978213  |
| 6213 | 3.7933014  | 6246 | 3.7956020  | 6279 | 3.7978905  |
| 6214 | 3.7933712  | 6247 | 3.7956715  | 6280 | 3.7979596  |
| 6215 | 3.7934411  | 6248 | 3.7957410  | 6281 | 3.7980288  |
| 6216 | 3.7935110  | 6249 | 3.7958105  | 6282 | 3.7980979  |
| 6217 | 3.7935809  | 6250 | 3.7958800  | 6283 | 3.7981671  |
| 6218 | 3.7936507  | 6251 | 3.7959495  | 6284 | 3.7982362  |
| 6219 | 3.7937206  | 6252 | 3.7960190  | 6285 | 3.7983053  |
| 6220 | 3.7937904  | 6253 | 3.7960884  | 6286 | 3.7983744  |
| 6221 | 3.7938602  | 6254 | 3.7961579  | 6287 | 3.7984435  |
| 6222 | 3.7939300  | 6255 | 3.7962273  | 6288 | 3.7985125  |
| 6223 | 3.7939998  | 6256 | 3.7962967  | 6289 | 3.7985816  |
| 6224 | 3.7940696  | 6257 | 3.7963662  | 6290 | 3.7986506  |
| 6225 | 3.7941394  | 6258 | 3.7964356  | 6291 | 3.7987197  |
| 6226 | 3.7942091  | 6259 | 3.7965050  | 6292 | 3.7987887  |
| 6227 | 3.7942789  | 6260 | 3.7965743  | 6293 | 3.7988577  |
| 6228 | 3.7943486  | 6261 | 3.7966437  | 6294 | 3.7989267  |
| 6229 | 3.7944183  | 6262 | 3.7967131  | 6295 | 3.7989957  |
| 6230 | 3.7944880  | 6263 | 3.7967824  | 6296 | 3.7990647  |
| 6231 | 3.7945578  | 6264 | 3.7968517  | 6297 | 3.7991337  |
| 6232 | 3.7946274  | 6265 | 3.7969211  | 6298 | 3.7992027  |
| 6233 | 3.7946971  | 6266 | 3.7969904  | 6299 | 3.7992716  |
| 6234 | 3.7947668  | 6267 | 3.7970597  | 6300 | 3.7993405  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 6301 | 3.7994095 | 6334 | 3.8016781 | 6367 | 3.8039348 |
| 6302 | 3.7994784 | 6335 | 3.8017466 | 6368 | 3.8040031 |
| 6303 | 3.7995473 | 6336 | 3.8018152 | 6369 | 3.8040712 |
| 6304 | 3.7996162 | 6337 | 3.8018837 | 6370 | 3.8041394 |
| 6305 | 3.7996851 | 6338 | 3.8019522 | 6371 | 3.8042076 |
| 6306 | 3.7997540 | 6339 | 3.8020208 | 6372 | 3.8042758 |
| 6307 | 3.7998228 | 6340 | 3.8020893 | 6373 | 3.8043439 |
| 6308 | 3.7998917 | 6341 | 3.8021578 | 6374 | 3.8044121 |
| 6309 | 3.7999605 | 6342 | 3.8022262 | 6375 | 3.8044802 |
| 6310 | 3.8000294 | 6343 | 3.8022947 | 6376 | 3.8045483 |
| 6311 | 3.8000982 | 6344 | 3.8023632 | 6377 | 3.8046164 |
| 6312 | 3.8001670 | 6345 | 3.8024316 | 6378 | 3.8046845 |
| 6313 | 3.8002358 | 6346 | 3.8025001 | 6379 | 3.8047526 |
| 6314 | 3.8003046 | 6347 | 3.8025685 | 6380 | 3.8048207 |
| 6315 | 3.8003734 | 6348 | 3.8026369 | 6381 | 3.8048887 |
| 6316 | 3.8004421 | 6349 | 3.8027053 | 6382 | 3.8049568 |
| 6317 | 3.8005109 | 6350 | 3.8027737 | 6383 | 3.8050248 |
| 6318 | 3.8005796 | 6351 | 3.8028421 | 6384 | 3.8050929 |
| 6319 | 3.8006484 | 6352 | 3.8029105 | 6385 | 3.8051609 |
| 6320 | 3.8007171 | 6353 | 3.8029789 | 6386 | 3.8052289 |
| 6321 | 3.8007858 | 6354 | 3.8030472 | 6387 | 3.8052969 |
| 6322 | 3.8008545 | 6355 | 3.8031156 | 6388 | 3.8053649 |
| 6323 | 3.8009232 | 6356 | 3.8031839 | 6389 | 3.8054329 |
| 6324 | 3.8009919 | 6357 | 3.8032522 | 6390 | 3.8055009 |
| 6325 | 3.8010605 | 6358 | 3.8033205 | 6391 | 3.8055688 |
| 6326 | 3.8011292 | 6359 | 3.8033888 | 6392 | 3.8056368 |
| 6327 | 3.8011978 | 6360 | 3.8034571 | 6393 | 3.8057047 |
| 6328 | 3.8012665 | 6361 | 3.8035254 | 6394 | 3.8057726 |
| 6329 | 3.8013351 | 6362 | 3.8035937 | 6395 | 3.8058405 |
| 6330 | 3.8014037 | 6363 | 3.8036619 | 6396 | 3.8059085 |
| 6331 | 3.8014723 | 6364 | 3.8037302 | 6397 | 3.8059763 |
| 6332 | 3.8015409 | 6365 | 3.8037984 | 6398 | 3.8060442 |
| 6333 | 3.8016095 | 6366 | 3.8038666 | 6399 | 3.8061121 |
| 6334 | 3.8016781 | 6367 | 3.8039348 | 6400 | 3.8061800 |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 6401 | 3.8062478  | 6434 | 3.8084811  | 6467 | 3.8107029  |
| 6402 | 3.8063157  | 6435 | 3.8085485  | 6468 | 3.8107700  |
| 6403 | 3.8063835  | 6436 | 3.8086160  | 6469 | 3.8108371  |
| 6404 | 3.8064513  | 6437 | 3.8086835  | 6470 | 3.8109043  |
| 6405 | 3.8065191  | 6438 | 3.8087510  | 6471 | 3.8109714  |
| 6406 | 3.8065869  | 6439 | 3.8088184  | 6472 | 3.8110385  |
| 6407 | 3.8066547  | 6440 | 3.8088859  | 6473 | 3.8111056  |
| 6408 | 3.8067225  | 6441 | 3.8089533  | 6474 | 3.8111727  |
| 6409 | 3.8067903  | 6442 | 3.8090207  | 6475 | 3.8112398  |
| 6410 | 3.8068580  | 6443 | 3.8090881  | 6476 | 3.8113068  |
| 6411 | 3.8069258  | 6444 | 3.8091555  | 6477 | 3.8113739  |
| 6412 | 3.8069935  | 6445 | 3.8092229  | 6478 | 3.8114409  |
| 6413 | 3.8070612  | 6446 | 3.8092903  | 6479 | 3.8115080  |
| 6414 | 3.8071290  | 6447 | 3.8093577  | 6480 | 3.8115750  |
| 6415 | 3.8071967  | 6448 | 3.8094250  | 6481 | 3.8116420  |
| 6416 | 3.8072644  | 6449 | 3.8094924  | 6482 | 3.8117090  |
| 6417 | 3.8073320  | 6450 | 3.8095597  | 6483 | 3.8117760  |
| 6418 | 3.8073997  | 6451 | 3.8096270  | 6484 | 3.8118430  |
| 6419 | 3.8074674  | 6452 | 3.8096944  | 6485 | 3.8119100  |
| 6420 | 3.8075350  | 6453 | 3.8097617  | 6486 | 3.8119769  |
| 6421 | 3.8076027  | 6454 | 3.8098290  | 6487 | 3.8120439  |
| 6422 | 3.8076703  | 6455 | 3.8098962  | 6488 | 3.8121108  |
| 6423 | 3.8077379  | 6456 | 3.8099635  | 6489 | 3.8121778  |
| 6424 | 3.8078055  | 6457 | 3.8100308  | 6490 | 3.8122447  |
| 6425 | 3.8078731  | 6458 | 3.8100980  | 6491 | 3.8123116  |
| 6426 | 3.8079407  | 6459 | 3.8101653  | 6492 | 3.8123785  |
| 6427 | 3.8080083  | 6460 | 3.8102325  | 6493 | 3.8124454  |
| 6428 | 3.8080759  | 6461 | 3.8102997  | 6494 | 3.8125123  |
| 6429 | 3.8081434  | 6462 | 3.8103670  | 6495 | 3.8125792  |
| 6430 | 3.8082110  | 6463 | 3.8104342  | 6466 | 3.8126460  |
| 6431 | 3.8082785  | 6464 | 3.8105013  | 6497 | 3.8127129  |
| 6432 | 3.8083460  | 6465 | 3.8105685  | 6498 | 3.8127797  |
| 6433 | 3.8084136  | 6466 | 3.8106357  | 6499 | 3.8128465  |
| 6434 | 3.8084811  | 6467 | 3.8107029  | 6500 | 3.8129134  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 6501 | 3.8129802  | 6534 | 3.8151791  | 6567 | 3.8173670  |
| 6502 | 3.8130470  | 6535 | 3.8152456  | 6568 | 3.8174331  |
| 6503 | 3.8131138  | 6536 | 3.8153120  | 6569 | 3.8174993  |
| 6504 | 3.8131805  | 6537 | 3.8153785  | 6570 | 3.8175654  |
| 6505 | 3.8132473  | 6538 | 3.8154449  | 6571 | 3.8176315  |
| 6506 | 3.8133141  | 6539 | 3.8155113  | 6572 | 3.8176976  |
| 6507 | 3.8133808  | 6540 | 3.8155777  | 6573 | 3.8177636  |
| 6508 | 3.8134475  | 6541 | 3.8156441  | 6574 | 3.8178297  |
| 6509 | 3.8135143  | 6542 | 3.8157105  | 6575 | 3.8178958  |
| 6510 | 3.8135810  | 6543 | 3.8157769  | 6576 | 3.8179618  |
| 6511 | 3.8136477  | 6544 | 3.8158433  | 6577 | 3.8180278  |
| 6512 | 3.8137144  | 6545 | 3.8159096  | 6578 | 3.8180939  |
| 6513 | 3.8137811  | 6546 | 3.8159760  | 6579 | 3.8181599  |
| 6514 | 3.8138478  | 6547 | 3.8160423  | 6580 | 3.8182259  |
| 6515 | 3.8139144  | 6548 | 3.8161087  | 6581 | 3.8182919  |
| 6516 | 3.8139811  | 6549 | 3.8161750  | 6582 | 3.8183579  |
| 6517 | 3.8140477  | 6550 | 3.8162413  | 6583 | 3.8184239  |
| 6518 | 3.7141144  | 6551 | 3.8163076  | 6584 | 3.8184898  |
| 6519 | 3.8141810  | 6552 | 3.8163739  | 6585 | 3.8185558  |
| 6520 | 3.8142476  | 6553 | 3.8164402  | 6586 | 3.8186217  |
| 6521 | 3.8143142  | 6554 | 3.8165064  | 6587 | 3.8186877  |
| 6522 | 3.8143808  | 6555 | 3.8165727  | 6588 | 3.8187536  |
| 6523 | 3.8144474  | 6556 | 3.8166389  | 6589 | 3.8188195  |
| 6524 | 3.8145140  | 6557 | 3.8167052  | 6590 | 3.8188854  |
| 6525 | 3.8145805  | 6558 | 3.8167714  | 6591 | 3.8189513  |
| 6526 | 3.8146471  | 6559 | 3.8168376  | 6592 | 3.8190172  |
| 6527 | 3.8147136  | 6560 | 3.8169038  | 6593 | 3.8190831  |
| 6528 | 3.8147801  | 6561 | 3.8169700  | 6594 | 3.8191489  |
| 6529 | 3.8148467  | 6562 | 3.8170362  | 6595 | 3.8192148  |
| 6530 | 3.8149132  | 6563 | 3.8171024  | 6596 | 3.8192806  |
| 6531 | 3.8149797  | 6564 | 3.8171686  | 6597 | 3.8193465  |
| 6532 | 3.8150462  | 6565 | 3.8172347  | 6598 | 3.8194123  |
| 6533 | 3.8151127  | 6566 | 3.8173009  | 6599 | 3.8194781  |
| 6534 | 3.8151791  | 6567 | 3.8173670  | 6600 | 3.8195439  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 6601 | 3.8196097 | 6634 | 3.8217755 | 6667 | 3.8239305 |
| 6602 | 3.8196755 | 6635 | 3.8218409 | 6668 | 3.8239956 |
| 6603 | 3.8197413 | 6636 | 3.8219064 | 6669 | 3.8240607 |
| 6604 | 3.8198071 | 6637 | 3.8219718 | 6670 | 3.8241258 |
| 6605 | 3.8198728 | 6638 | 3.8220372 | 6671 | 3.8241909 |
| 6606 | 3.8199386 | 6639 | 3.8221027 | 6672 | 3.8242560 |
| 6607 | 3.8200043 | 6640 | 3.8221681 | 6673 | 3.8243211 |
| 6608 | 3.8200700 | 6641 | 3.8222335 | 6674 | 3.8243862 |
| 6609 | 3.8201358 | 6642 | 3.8222989 | 6675 | 3.8244513 |
| 6610 | 3.8202015 | 6643 | 3.8223643 | 6676 | 3.8245163 |
| 6611 | 3.8202672 | 6644 | 3.8224296 | 6677 | 3.8245814 |
| 6612 | 3.8203328 | 6645 | 3.8224950 | 6678 | 3.8246464 |
| 6613 | 3.8203985 | 6646 | 3.8225603 | 6679 | 3.8247114 |
| 6614 | 3.8204642 | 6647 | 3.8226257 | 6680 | 3.8247765 |
| 6615 | 3.8205298 | 6648 | 3.8226910 | 6681 | 3.8248415 |
| 6616 | 3.8205955 | 6649 | 3.8227563 | 6682 | 3.8249065 |
| 6617 | 3.8206611 | 6650 | 3.8228216 | 6683 | 3.8249715 |
| 6618 | 3.8207268 | 6651 | 3.8228869 | 6684 | 3.8250364 |
| 6619 | 3.8207924 | 6652 | 3.8229522 | 6685 | 3.8251014 |
| 6620 | 3.8208580 | 6653 | 3.8230175 | 6686 | 3.8251664 |
| 6621 | 3.8209236 | 6654 | 3.8230828 | 6687 | 3.8252313 |
| 6622 | 3.8209892 | 6655 | 3.8231481 | 6688 | 3.8252963 |
| 6623 | 3.8210548 | 6656 | 3.8232133 | 6689 | 3.8253612 |
| 6624 | 3.8211203 | 6657 | 3.8232786 | 6690 | 3.8254261 |
| 6625 | 3.8211859 | 6658 | 3.8233438 | 6691 | 3.8254910 |
| 6626 | 3.8212514 | 6659 | 3.8234090 | 6692 | 3.8255559 |
| 6627 | 3.8213170 | 6660 | 3.8234742 | 6693 | 3.8256208 |
| 6628 | 3.8213825 | 6661 | 3.8235394 | 6694 | 3.8256857 |
| 6629 | 3.8214480 | 6662 | 3.8236046 | 6695 | 3.8257506 |
| 6630 | 3.8215135 | 6663 | 3.8236698 | 6696 | 3.8258154 |
| 6631 | 3.8215790 | 6664 | 3.8237350 | 6697 | 3.8258803 |
| 6632 | 3.8216445 | 6665 | 3.8238002 | 6698 | 3.8259451 |
| 6633 | 3.8217100 | 6666 | 3.8238653 | 6699 | 3.8260100 |
| 6634 | 3.8217755 | 6667 | 3.8239305 | 6700 | 3.8260748 |



| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 5901 | 3.7709256 | 5934 | 3.7733475 | 5967 | 3.7757560 |
| 5902 | 3.7709992 | 5935 | 3.7734207 | 5968 | 3.7758288 |
| 5903 | 3.7710728 | 5936 | 3.7734939 | 5969 | 3.7759016 |
| 5904 | 3.7711463 | 5937 | 3.7735670 | 5970 | 3.7759743 |
| 5905 | 3.7712199 | 5938 | 3.7736402 | 5971 | 3.7760471 |
| 5906 | 3.7712934 | 5939 | 3.7737133 | 5972 | 3.7761198 |
| 5907 | 3.7713670 | 5940 | 3.7737864 | 5973 | 3.7761925 |
| 5908 | 3.7714405 | 5941 | 3.7738596 | 5974 | 3.7762652 |
| 5909 | 3.7715140 | 5942 | 3.7739326 | 5975 | 3.7763379 |
| 5910 | 3.7715875 | 5943 | 3.7740057 | 5976 | 3.7764106 |
| 5911 | 3.7716610 | 5944 | 3.7740788 | 5977 | 3.7764833 |
| 5912 | 3.7717344 | 5945 | 3.7741519 | 5978 | 3.7765559 |
| 5913 | 3.7718079 | 5946 | 3.7742249 | 5979 | 3.7766286 |
| 5914 | 3.7718813 | 5947 | 3.7742979 | 5980 | 3.7767012 |
| 5915 | 3.7719547 | 5948 | 3.7743710 | 5981 | 3.7767738 |
| 5916 | 3.7720282 | 5949 | 3.7744440 | 5982 | 3.7768464 |
| 5917 | 3.7721016 | 5950 | 3.7745170 | 5983 | 3.7769190 |
| 5918 | 3.7721750 | 5951 | 3.7745899 | 5984 | 3.7769916 |
| 5919 | 3.7722483 | 5952 | 3.7746629 | 5985 | 3.7770642 |
| 5920 | 3.7723217 | 5953 | 3.7747359 | 5986 | 3.7771367 |
| 5921 | 3.7723951 | 5954 | 3.7748089 | 5987 | 3.7772093 |
| 5922 | 3.7724684 | 5955 | 3.7748818 | 5988 | 3.7772818 |
| 5923 | 3.7725417 | 5956 | 3.7749547 | 5989 | 3.7773543 |
| 5924 | 3.7726150 | 5957 | 3.7750276 | 5990 | 3.7774268 |
| 5925 | 3.7726884 | 5958 | 3.7751005 | 5991 | 3.7774993 |
| 5926 | 3.7727616 | 5959 | 3.7751734 | 5992 | 3.7775718 |
| 5927 | 3.7728349 | 5960 | 3.7752463 | 5993 | 3.7776443 |
| 5928 | 3.7729082 | 5961 | 3.7753191 | 5994 | 3.7777167 |
| 5929 | 3.7729814 | 5962 | 3.7753920 | 5995 | 3.7777892 |
| 5930 | 3.7730547 | 5963 | 3.7754648 | 5996 | 3.7778616 |
| 5931 | 3.7731279 | 5964 | 3.7755376 | 5997 | 3.7779340 |
| 5932 | 3.7732011 | 5965 | 3.7756104 | 5998 | 3.7780065 |
| 5933 | 3.7732743 | 5966 | 3.7756832 | 5999 | 3.7780789 |
| 5934 | 3.7733475 | 5967 | 3.7757560 | 6000 | 3.7781512 |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 6001 | 3.7782236  | 6034 | 3.7806053  | 6067 | 3.7829740  |
| 6002 | 3.7782960  | 6035 | 3.7806773  | 6068 | 3.7830456  |
| 6003 | 3.7783683  | 6036 | 3.7807492  | 6069 | 3.7831171  |
| 6004 | 3.7784407  | 6037 | 3.7808212  | 6070 | 3.7831887  |
| 6005 | 3.7785130  | 6038 | 3.7808931  | 6071 | 3.7832602  |
| 6006 | 3.7785853  | 6039 | 3.7809650  | 6072 | 3.7833318  |
| 6007 | 3.7786576  | 6040 | 3.7810369  | 6073 | 3.7834033  |
| 6008 | 3.7787299  | 6041 | 3.7811088  | 6074 | 3.7834748  |
| 6009 | 3.7788022  | 6042 | 3.7811807  | 6075 | 3.7835463  |
| 6010 | 3.7788745  | 6043 | 3.7812526  | 6076 | 3.7836178  |
| 6011 | 3.7789467  | 6044 | 3.7813245  | 6077 | 3.7836892  |
| 6012 | 3.7790190  | 6045 | 3.7813963  | 6078 | 3.7837607  |
| 6013 | 3.7790912  | 6046 | 3.7814681  | 6079 | 3.7838321  |
| 6014 | 3.7791634  | 6047 | 3.7815400  | 6080 | 3.7839036  |
| 6015 | 3.7792356  | 6048 | 3.7816118  | 6081 | 3.7839750  |
| 6016 | 3.7793078  | 6049 | 3.7816836  | 6082 | 3.7840464  |
| 6017 | 3.7793800  | 6050 | 3.7817554  | 6083 | 3.7841178  |
| 6018 | 3.7794522  | 6051 | 3.7818272  | 6084 | 3.7841892  |
| 6019 | 3.7795243  | 6052 | 3.7818989  | 6085 | 3.7842606  |
| 6020 | 3.7795965  | 6053 | 3.7819707  | 6086 | 3.7843319  |
| 6021 | 3.7796686  | 6054 | 3.7820424  | 6087 | 3.7844033  |
| 6022 | 3.7797408  | 6055 | 3.7821141  | 6088 | 3.7844746  |
| 6023 | 3.7798129  | 6056 | 3.7821859  | 6089 | 3.7845460  |
| 6024 | 3.7798850  | 6057 | 3.7822576  | 6090 | 3.7846173  |
| 6025 | 3.7799571  | 6058 | 3.7823293  | 6091 | 3.7846886  |
| 6026 | 3.7800291  | 6059 | 3.7824010  | 6092 | 3.7847599  |
| 6027 | 3.7801012  | 6060 | 3.7824726  | 6093 | 3.7848312  |
| 6028 | 3.7801732  | 6061 | 3.7825443  | 6094 | 3.7849024  |
| 6029 | 3.7802453  | 6062 | 3.7826159  | 6095 | 3.7849737  |
| 6030 | 3.7803173  | 6063 | 3.7826876  | 6096 | 3.7850450  |
| 6031 | 3.7803893  | 6064 | 3.7827592  | 6097 | 3.7851162  |
| 6032 | 3.7804613  | 6065 | 3.7828308  | 6098 | 3.7851874  |
| 6033 | 3.7805333  | 6066 | 3.7829024  | 6099 | 3.7852586  |
| 6034 | 3.7806053  | 6067 | 3.7829740  | 6100 | 3.7853298  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 6101 | 3.7854010 | 6134 | 3.7877438 | 6167 | 3.7900739 |
| 6102 | 3.7854722 | 6135 | 3.7878146 | 6168 | 3.7901444 |
| 6103 | 3.7855434 | 6136 | 3.7878853 | 6169 | 3.7902148 |
| 6104 | 3.7856145 | 6137 | 3.7879561 | 6170 | 3.7902852 |
| 6105 | 3.7856857 | 6138 | 3.7880269 | 6171 | 3.7903555 |
| 6106 | 3.7857568 | 6139 | 3.7880976 | 6172 | 3.7904259 |
| 6107 | 3.7858279 | 6140 | 3.7881684 | 6173 | 3.7904963 |
| 6108 | 3.7858990 | 6141 | 3.7882391 | 6174 | 3.7905666 |
| 6109 | 3.7859701 | 6142 | 3.7883098 | 6175 | 3.7906370 |
| 6110 | 3.7860412 | 6143 | 3.7883805 | 6176 | 3.7907073 |
| 6111 | 3.7861123 | 6144 | 3.7884512 | 6177 | 3.7907776 |
| 6112 | 3.7861833 | 6145 | 3.7885219 | 6178 | 3.7908479 |
| 6113 | 3.7862544 | 6146 | 3.7885926 | 6179 | 3.7909182 |
| 6114 | 3.7863254 | 6147 | 3.7886632 | 6180 | 3.7909885 |
| 6115 | 3.7863965 | 6148 | 3.7887339 | 6181 | 3.7910587 |
| 6116 | 3.7864675 | 6149 | 3.7888045 | 6182 | 3.7911290 |
| 6117 | 3.7865385 | 6150 | 3.7888751 | 6183 | 3.7911992 |
| 6118 | 3.7866095 | 6151 | 3.7889457 | 6184 | 3.7912695 |
| 6119 | 3.7866805 | 6152 | 3.7890163 | 6185 | 3.7913397 |
| 6120 | 3.7867514 | 6153 | 3.7890869 | 6186 | 3.7914099 |
| 6121 | 3.7868224 | 6154 | 3.7891575 | 6187 | 3.7914801 |
| 6122 | 3.7868933 | 6155 | 3.7892281 | 6188 | 3.7915503 |
| 6123 | 3.7869643 | 6156 | 3.7892986 | 6189 | 3.7916205 |
| 6124 | 3.7870352 | 6157 | 3.7893691 | 6190 | 3.7916906 |
| 6125 | 3.7871061 | 6158 | 3.7894397 | 6191 | 3.7917608 |
| 6126 | 3.7871770 | 6159 | 3.7895102 | 6192 | 3.7918309 |
| 6127 | 3.7872479 | 6160 | 3.7895807 | 6193 | 3.7919011 |
| 6128 | 3.7873188 | 6161 | 3.7896512 | 6194 | 3.7919712 |
| 6129 | 3.7873896 | 6162 | 3.7897217 | 6195 | 3.7920413 |
| 6130 | 3.7874605 | 6163 | 3.7897922 | 6196 | 3.7921114 |
| 6131 | 3.7875313 | 6164 | 3.7898626 | 6197 | 3.7921815 |
| 6132 | 3.7876021 | 6165 | 3.7899331 | 6198 | 3.7922516 |
| 6133 | 3.7876730 | 6166 | 3.7900035 | 6199 | 3.7923216 |
| 6134 | 3.7877438 | 6167 | 3.7900739 | 6200 | 3.7923917 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 6201 | 3.7924617  | 6234 | 3.7947668  | 6267 | 3.7970597  |
| 6202 | 3.7925318  | 6235 | 3.7948365  | 6268 | 3.7971290  |
| 6203 | 3.7926018  | 6236 | 3.7949061  | 6269 | 3.7971983  |
| 6204 | 3.7926718  | 6237 | 3.7949757  | 6270 | 3.7972675  |
| 6205 | 3.7927418  | 6238 | 3.7950454  | 6271 | 3.7973368  |
| 6206 | 3.7928118  | 6239 | 3.7951150  | 6272 | 3.7974060  |
| 6207 | 3.7928817  | 6240 | 3.7951846  | 6273 | 3.7974753  |
| 6208 | 3.7929517  | 6241 | 3.7952542  | 6274 | 3.7975445  |
| 6209 | 3.7930217  | 6242 | 3.7953238  | 6275 | 3.7976137  |
| 6210 | 3.7930916  | 6243 | 3.7953933  | 6276 | 3.7976829  |
| 6211 | 3.7931615  | 6244 | 3.7954629  | 6277 | 3.7977521  |
| 6212 | 3.7932314  | 6245 | 3.7955324  | 6278 | 3.7978213  |
| 6213 | 3.7933014  | 6246 | 3.7956020  | 6279 | 3.7978905  |
| 6214 | 3.7933712  | 6247 | 3.7956715  | 6280 | 3.7979596  |
| 6215 | 3.7934411  | 6248 | 3.7957410  | 6281 | 3.7980288  |
| 6216 | 3.7935110  | 6249 | 3.7958105  | 6282 | 3.7980979  |
| 6217 | 3.7935809  | 6250 | 3.7958800  | 6283 | 3.7981671  |
| 6218 | 3.7936507  | 6251 | 3.7959495  | 6284 | 3.7982362  |
| 6219 | 3.7937206  | 6252 | 3.7960190  | 6285 | 3.7983053  |
| 6220 | 3.7937904  | 6253 | 3.7960884  | 6286 | 3.7983744  |
| 6221 | 3.7938602  | 6254 | 3.7961579  | 6287 | 3.7984435  |
| 6222 | 3.7939300  | 6255 | 3.7962273  | 6288 | 3.7985125  |
| 6223 | 3.7939998  | 6256 | 3.7962967  | 6289 | 3.7985816  |
| 6224 | 3.7940696  | 6257 | 3.7963662  | 6290 | 3.7986506  |
| 6225 | 3.7941394  | 6258 | 3.7964356  | 6291 | 3.7987197  |
| 6226 | 3.7942091  | 6259 | 3.7965050  | 6292 | 3.7987887  |
| 6227 | 3.7942789  | 6260 | 3.7965743  | 6293 | 3.7988577  |
| 6228 | 3.7943486  | 6261 | 3.7966437  | 6294 | 3.7989267  |
| 6229 | 3.7944183  | 6262 | 3.7967131  | 6295 | 3.7989957  |
| 6230 | 3.7944880  | 6263 | 3.7967824  | 6296 | 3.7990647  |
| 6231 | 3.7945578  | 6264 | 3.7968517  | 6297 | 3.7991337  |
| 6232 | 3.7946274  | 6265 | 3.7969211  | 6298 | 3.7992027  |
| 6233 | 3.7946971  | 6266 | 3.7969904  | 6299 | 3.7992716  |
| 6234 | 3.7947668  | 6267 | 3.7970597  | 6300 | 3.7993405  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 6301 | 3.7994095  | 6334 | 3.8016781  | 6367 | 3.8039348  |
| 6302 | 3.7994784  | 6335 | 3.8017466  | 6368 | 3.8040031  |
| 6303 | 3.7995473  | 6336 | 3.8018152  | 6369 | 3.8040712  |
| 6304 | 3.7996162  | 6337 | 3.8018837  | 6370 | 3.8041394  |
| 6305 | 3.7996851  | 6338 | 3.8019522  | 6371 | 3.8042076  |
| 6306 | 3.7997540  | 6339 | 3.8020208  | 6372 | 3.8042758  |
| 6307 | 3.7998228  | 6340 | 3.8020893  | 6373 | 3.8043439  |
| 6308 | 3.7998917  | 6341 | 3.8021578  | 6374 | 3.8044121  |
| 6309 | 3.7999605  | 6342 | 3.8022262  | 6375 | 3.8044802  |
| 6310 | 3.8000294  | 6343 | 3.8022947  | 6376 | 3.8045483  |
| 6311 | 3.8000982  | 6344 | 3.8023632  | 6377 | 3.8046164  |
| 6312 | 3.8001670  | 6345 | 3.8024316  | 6378 | 3.8046845  |
| 6313 | 3.8002358  | 6346 | 3.8025001  | 6379 | 3.8047526  |
| 6314 | 3.8003046  | 6347 | 3.8025685  | 6380 | 3.8048207  |
| 6315 | 3.8003734  | 6348 | 3.8026369  | 6381 | 3.8048887  |
| 6316 | 3.8004421  | 6349 | 3.8027053  | 6382 | 3.8049568  |
| 6317 | 3.8005109  | 6350 | 3.8027737  | 6383 | 3.8050248  |
| 6318 | 3.8005796  | 6351 | 3.8028421  | 6384 | 3.8050929  |
| 6319 | 3.8006484  | 6352 | 3.8029105  | 6385 | 3.8051609  |
| 6320 | 3.8007171  | 6353 | 3.8029789  | 6386 | 3.8052289  |
| 6321 | 3.8007858  | 6354 | 3.8030472  | 6387 | 3.8052969  |
| 6322 | 3.8008545  | 6355 | 3.8031156  | 6388 | 3.8053649  |
| 6323 | 3.8009232  | 6356 | 3.8031839  | 6389 | 3.8054329  |
| 6324 | 3.8009919  | 6357 | 3.8032522  | 6390 | 3.8055009  |
| 6325 | 3.8010605  | 6358 | 3.8033205  | 6391 | 3.8055688  |
| 6326 | 3.8011292  | 6359 | 3.8033888  | 6392 | 3.8056368  |
| 6327 | 3.8011978  | 6360 | 3.8034571  | 6393 | 3.8057047  |
| 6328 | 3.8012665  | 6361 | 3.8035254  | 6394 | 3.8057726  |
| 6329 | 3.8013351  | 6362 | 3.8035937  | 6395 | 3.8058405  |
| 6330 | 3.8014037  | 6363 | 3.8036619  | 6396 | 3.8059085  |
| 6331 | 3.8014723  | 6364 | 3.8037302  | 6397 | 3.8059763  |
| 6332 | 3.8015409  | 6365 | 3.8037984  | 6398 | 3.8060442  |
| 6333 | 3.8016095  | 6366 | 3.8038666  | 6399 | 3.8061121  |
| 6334 | 3.8016781  | 6367 | 3.8039348  | 6400 | 3.8061800  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 6401 | 3.8062478 | 6434 | 3.8084811 | 6467 | 3.8107029 |
| 6402 | 3.8063157 | 6435 | 3.8085485 | 6468 | 3.8107700 |
| 6403 | 3.8063835 | 6436 | 3.8086160 | 6469 | 3.8108371 |
| 6404 | 3.8064513 | 6437 | 3.8086835 | 6470 | 3.8109043 |
| 6405 | 3.8065191 | 6438 | 3.8087510 | 6471 | 3.8109714 |
| 6406 | 3.8065869 | 6439 | 3.8088184 | 6472 | 3.8110385 |
| 6407 | 3.8066547 | 6440 | 3.8088859 | 6473 | 3.8111056 |
| 6408 | 3.8067225 | 6441 | 3.8089533 | 6474 | 3.8111727 |
| 6409 | 3.8067903 | 6442 | 3.8090207 | 6475 | 3.8112398 |
| 6410 | 3.8068580 | 6443 | 3.8090881 | 6476 | 3.8113069 |
| 6411 | 3.8069258 | 6444 | 3.8091555 | 6477 | 3.8113739 |
| 6412 | 3.8069935 | 6445 | 3.8092229 | 6478 | 3.8114409 |
| 6413 | 3.8070612 | 6446 | 3.8092903 | 6479 | 3.8115080 |
| 6414 | 3.8071290 | 6447 | 3.8093577 | 6480 | 3.8115750 |
| 6415 | 3.8071967 | 6448 | 3.8094250 | 6481 | 3.8116420 |
| 6416 | 3.8072644 | 6449 | 3.8094924 | 6482 | 3.8117090 |
| 6417 | 3.8073320 | 6450 | 3.8095597 | 6483 | 3.8117760 |
| 6418 | 3.8073997 | 6451 | 3.8096270 | 6484 | 3.8118430 |
| 6419 | 3.8074674 | 6452 | 3.8096944 | 6485 | 3.8119100 |
| 6420 | 3.8075350 | 6453 | 3.8097617 | 6486 | 3.8119769 |
| 6421 | 3.8076027 | 6454 | 3.8098290 | 6487 | 3.8120439 |
| 6422 | 3.8076703 | 6455 | 3.8098962 | 6488 | 3.8121108 |
| 6423 | 3.8077379 | 6456 | 3.8099635 | 6489 | 3.8121778 |
| 6424 | 3.8078055 | 6457 | 3.8100308 | 6490 | 3.8122447 |
| 6425 | 3.8078731 | 6458 | 3.8100980 | 6491 | 3.8123116 |
| 6426 | 3.8079407 | 6459 | 3.8101653 | 6492 | 3.8123785 |
| 6427 | 3.8080083 | 6460 | 3.8102325 | 6493 | 3.8124454 |
| 6428 | 3.8080759 | 6461 | 3.8102997 | 6494 | 3.8125123 |
| 6429 | 3.8081434 | 6462 | 3.8103670 | 6495 | 3.8125792 |
| 6430 | 3.8082110 | 6463 | 3.8104342 | 6466 | 3.8126460 |
| 6431 | 3.8082785 | 6464 | 3.8105013 | 6497 | 3.8127129 |
| 6432 | 3.8083460 | 6465 | 3.8105685 | 6498 | 3.8127797 |
| 6433 | 3.8084136 | 6466 | 3.8106357 | 6499 | 3.8128465 |
| 6434 | 3.8084811 | 6467 | 3.8107029 | 6500 | 3.8129134 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 6501 | 3.8129802 | 6534 | 3.8151791 | 6567 | 3.8173670 |
| 6502 | 3.8130470 | 6535 | 3.8152456 | 6568 | 3.8174331 |
| 6503 | 3.8131138 | 6536 | 3.8153120 | 6569 | 3.8174993 |
| 6504 | 3.8131805 | 6537 | 3.8153785 | 6570 | 3.8175654 |
| 6505 | 3.8132473 | 6538 | 3.8154449 | 6571 | 3.8176315 |
| 6506 | 3.8133141 | 6539 | 3.8155113 | 6572 | 3.8176976 |
| 6507 | 3.8133808 | 6540 | 3.8155777 | 6573 | 3.8177636 |
| 6508 | 3.8134475 | 6541 | 3.8156441 | 6574 | 3.8178297 |
| 6509 | 3.8135143 | 6542 | 3.8157105 | 6575 | 3.8178958 |
| 6510 | 3.8135810 | 6543 | 3.8157769 | 6576 | 3.8179618 |
| 6511 | 3.8136477 | 6544 | 3.8158433 | 6577 | 3.8180278 |
| 6512 | 3.8137144 | 6545 | 3.8159096 | 6578 | 3.8180939 |
| 6513 | 3.8137811 | 6546 | 3.8159760 | 6579 | 3.8181599 |
| 6514 | 3.8138478 | 6547 | 3.8160423 | 6580 | 3.8182259 |
| 6515 | 3.8139144 | 6548 | 3.8161087 | 6581 | 3.8182919 |
| 6516 | 3.8139811 | 6549 | 3.8161750 | 6582 | 3.8183579 |
| 6517 | 3.8140477 | 6550 | 3.8162413 | 6583 | 3.8184239 |
| 6518 | 3.7141144 | 6551 | 3.8163076 | 6584 | 3.8184898 |
| 6519 | 3.8141810 | 6552 | 3.8163739 | 6585 | 3.8185558 |
| 6520 | 3.8142476 | 6553 | 3.8164402 | 6586 | 3.8186217 |
| 6521 | 3.8143142 | 6554 | 3.8165064 | 6587 | 3.8186877 |
| 6522 | 3.8143808 | 6555 | 3.8165727 | 6588 | 3.8187536 |
| 6523 | 3.8144474 | 6556 | 3.8166389 | 6589 | 3.8188195 |
| 6524 | 3.8145140 | 6557 | 3.8167052 | 6590 | 3.8188854 |
| 6525 | 3.8145805 | 6558 | 3.8167714 | 6591 | 3.8189513 |
| 6526 | 3.8146471 | 6559 | 3.8168376 | 6592 | 3.8190172 |
| 6527 | 3.8147136 | 6560 | 3.8169038 | 6593 | 3.8190831 |
| 6528 | 3.8147801 | 6561 | 3.8169700 | 6594 | 3.8191489 |
| 6529 | 3.8148467 | 6562 | 3.8170362 | 6595 | 3.8192148 |
| 6530 | 3.8149132 | 6563 | 3.8171024 | 6596 | 3.8192806 |
| 6531 | 3.8149797 | 6564 | 3.8171686 | 6597 | 3.8193465 |
| 6532 | 3.8150462 | 6565 | 3.8172347 | 6598 | 3.8194123 |
| 6533 | 3.8151127 | 6566 | 3.8173009 | 6599 | 3.8194781 |
| 6534 | 3.8151791 | 6567 | 3.8173670 | 6600 | 3.8195439 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 6601 | 3.8196097  | 6634 | 3.8217755  | 6667 | 3.8239305  |
| 6602 | 3.8196755  | 6635 | 3.8218409  | 6668 | 3.8239956  |
| 6603 | 3.8197413  | 6636 | 3.8219064  | 6669 | 3.8240607  |
| 6604 | 3.8198071  | 6637 | 3.8219718  | 6670 | 3.8241258  |
| 6605 | 3.8198728  | 6638 | 3.8220372  | 6671 | 3.8241909  |
| 6606 | 3.8199386  | 6639 | 3.8221027  | 6672 | 3.8242560  |
| 6607 | 3.8200043  | 6640 | 3.8221681  | 6673 | 3.8243211  |
| 6608 | 3.8200700  | 6641 | 3.8222335  | 6674 | 3.8243862  |
| 6609 | 3.8201358  | 6642 | 3.8222989  | 6675 | 3.8244513  |
| 6610 | 3.8202015  | 6643 | 3.8223643  | 6676 | 3.8245163  |
| 6611 | 3.8202672  | 6644 | 3.8224296  | 6677 | 3.8245814  |
| 6612 | 3.8203328  | 6645 | 3.8224950  | 6678 | 3.8246464  |
| 6613 | 3.8203985  | 6646 | 3.8225603  | 6679 | 3.8247114  |
| 6614 | 3.8204642  | 6647 | 3.8226257  | 6680 | 3.8247765  |
| 6615 | 3.8205298  | 6648 | 3.8226910  | 6681 | 3.8248415  |
| 6616 | 3.8205955  | 6649 | 3.8227563  | 6682 | 3.8249065  |
| 6617 | 3.8206611  | 6650 | 3.8228216  | 6683 | 3.8249715  |
| 6618 | 3.8207268  | 6651 | 3.8228869  | 6684 | 3.8250364  |
| 6619 | 3.8207924  | 6652 | 3.8229522  | 6685 | 3.8251014  |
| 6620 | 3.8208580  | 6653 | 3.8230175  | 6686 | 3.8251664  |
| 6621 | 3.8209236  | 6654 | 3.8230828  | 6687 | 3.8252313  |
| 6622 | 3.8209892  | 6655 | 3.8231481  | 6688 | 3.8252963  |
| 6623 | 3.8210548  | 6656 | 3.8232133  | 6689 | 3.8253612  |
| 6624 | 3.8211203  | 6657 | 3.8232786  | 6690 | 3.8254261  |
| 6625 | 3.8211859  | 6658 | 3.8233438  | 6691 | 3.8254910  |
| 6626 | 3.8212514  | 6659 | 3.8234090  | 6692 | 3.8255559  |
| 6627 | 3.8213170  | 6660 | 3.8234742  | 6693 | 3.8256208  |
| 6628 | 3.8213825  | 6661 | 3.8235394  | 6694 | 3.8256857  |
| 6629 | 3.8214480  | 6662 | 3.8236046  | 6695 | 3.8257506  |
| 6630 | 3.8215135  | 6663 | 3.8236698  | 6696 | 3.8258154  |
| 6631 | 3.8215790  | 6664 | 3.8237350  | 6697 | 3.8258803  |
| 6632 | 3.8216445  | 6665 | 3.8238002  | 6698 | 3.8259451  |
| 6633 | 3.8217100  | 6666 | 3.8238653  | 6699 | 3.8260100  |
| 6634 | 3.8217755  | 6667 | 3.8239305  | 6700 | 3.8260748  |



| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 6701 | 3.8261396  | 6734 | 3.8282731  | 6767 | 3.8303962  |
| 6702 | 3.8262044  | 6735 | 3.8283376  | 6768 | 3.8304603  |
| 6703 | 3.8262692  | 6736 | 3.8284021  | 6769 | 3.8305245  |
| 6704 | 3.8263340  | 6737 | 3.8284665  | 6770 | 3.8305887  |
| 6705 | 3.8263988  | 6738 | 3.8285310  | 6771 | 3.8306528  |
| 6706 | 3.8264635  | 6739 | 3.8285955  | 6772 | 3.8307169  |
| 6707 | 3.8265283  | 6740 | 3.8286599  | 6773 | 3.8307811  |
| 6708 | 3.8265931  | 6741 | 3.8287243  | 6774 | 3.8308452  |
| 6709 | 3.8266578  | 6742 | 3.8287887  | 6775 | 3.8309093  |
| 6710 | 3.8267225  | 6743 | 3.8288532  | 6776 | 3.8309734  |
| 6711 | 3.8267872  | 6744 | 3.8289176  | 6777 | 3.8310375  |
| 6712 | 3.8268519  | 6745 | 3.8289820  | 6778 | 3.8311016  |
| 6713 | 3.8269166  | 6746 | 3.8290463  | 6779 | 3.8311656  |
| 6714 | 3.8269813  | 6747 | 3.8291107  | 6780 | 3.8312297  |
| 6715 | 3.8270460  | 6748 | 3.8291751  | 6781 | 3.8312937  |
| 6716 | 3.8271107  | 6749 | 3.8292394  | 6782 | 3.8313578  |
| 6717 | 3.8271753  | 6750 | 3.8293038  | 6783 | 3.8314218  |
| 6718 | 3.8272400  | 6751 | 3.7293681  | 6784 | 3.8314858  |
| 6719 | 3.8273046  | 6752 | 3.8294324  | 6785 | 3.8315499  |
| 6720 | 3.8273693  | 6753 | 3.8294967  | 6786 | 3.8316139  |
| 6721 | 3.8274339  | 6754 | 3.8295611  | 6787 | 3.8316778  |
| 6722 | 3.8274985  | 6755 | 3.8296254  | 6788 | 3.8317418  |
| 6723 | 3.8275631  | 6756 | 3.8296896  | 6789 | 3.8318058  |
| 6724 | 3.8276277  | 6757 | 3.8297539  | 6790 | 3.8318698  |
| 6725 | 3.8276923  | 6758 | 3.8298182  | 6791 | 3.8319337  |
| 6726 | 3.8277569  | 6759 | 3.8298824  | 6792 | 3.8319977  |
| 6727 | 3.8278214  | 6760 | 3.8299467  | 6793 | 3.8320616  |
| 6728 | 3.8278860  | 6761 | 3.8300109  | 6794 | 3.8321255  |
| 6729 | 3.8279505  | 6762 | 3.8300752  | 6795 | 3.8321895  |
| 6730 | 3.8280151  | 6763 | 3.8301394  | 6796 | 3.8322534  |
| 6731 | 3.8280796  | 6764 | 3.8302036  | 6797 | 3.8323173  |
| 6732 | 3.8281441  | 6765 | 3.8302678  | 6798 | 3.8323812  |
| 6733 | 3.8282086  | 6766 | 3.8303320  | 6799 | 3.8324450  |
| 6734 | 3.8282731  | 6767 | 3.8303962  | 6800 | 3.8325089  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 6801 | 3.8325728  | 6834 | 3.8346750  | 6867 | 3.8367670  |
| 6802 | 3.8326366  | 6835 | 3.8347385  | 6868 | 3.8368303  |
| 6803 | 3.8327005  | 6836 | 3.8348021  | 6869 | 3.8368935  |
| 6804 | 3.8327643  | 6837 | 3.8348656  | 6870 | 3.8369567  |
| 6805 | 3.8328281  | 6838 | 3.8349291  | 6871 | 3.8370199  |
| 6806 | 3.8328919  | 6839 | 3.8349926  | 6872 | 3.8370832  |
| 6807 | 3.8329558  | 6840 | 3.8350561  | 6873 | 3.8371463  |
| 6808 | 3.8330195  | 6841 | 3.8351196  | 6874 | 3.8372095  |
| 6809 | 3.8330833  | 6842 | 3.8351831  | 6875 | 3.8372727  |
| 6810 | 3.8331471  | 6843 | 3.8352465  | 6876 | 3.8373359  |
| 6811 | 3.8332109  | 6844 | 3.8353100  | 6877 | 3.8373990  |
| 6812 | 3.8332746  | 6845 | 3.8353735  | 6878 | 3.8374622  |
| 6813 | 3.8333384  | 6846 | 3.8354369  | 6879 | 3.8375253  |
| 6814 | 3.8334021  | 6847 | 3.8355003  | 6880 | 3.8375884  |
| 6815 | 3.8334659  | 6848 | 3.8355638  | 6881 | 3.8376516  |
| 6816 | 3.8335296  | 6849 | 3.8356272  | 6882 | 3.8377147  |
| 6817 | 3.8335933  | 6850 | 3.8356906  | 6883 | 3.8377778  |
| 6818 | 3.8336570  | 6851 | 3.8357540  | 6884 | 3.8378409  |
| 6819 | 3.8337207  | 6852 | 3.8358174  | 6885 | 3.8379039  |
| 6820 | 3.8337844  | 6853 | 3.8358807  | 6886 | 3.8379670  |
| 6821 | 3.8338480  | 6854 | 3.8359441  | 6887 | 3.8380301  |
| 6822 | 3.8339117  | 6855 | 3.8360075  | 6888 | 3.8380931  |
| 6823 | 3.8339754  | 6856 | 3.8360708  | 6889 | 3.8381562  |
| 6824 | 3.8340390  | 6857 | 3.8361341  | 6890 | 3.8382192  |
| 6825 | 3.8341027  | 6858 | 3.8361975  | 6891 | 3.8382822  |
| 6826 | 3.8341663  | 6859 | 3.8362608  | 6892 | 3.8383453  |
| 6827 | 3.8342299  | 6860 | 3.8363241  | 6893 | 3.8384083  |
| 6828 | 3.8342935  | 6861 | 3.8363874  | 6894 | 3.8384713  |
| 6829 | 3.8343571  | 6862 | 3.8364507  | 6895 | 3.8385343  |
| 6830 | 3.8344207  | 6863 | 3.8365140  | 6896 | 3.8385973  |
| 6831 | 3.8344843  | 6864 | 3.8365773  | 6897 | 3.8386602  |
| 6832 | 3.8345479  | 6865 | 3.8366405  | 6898 | 3.8387232  |
| 6833 | 3.8346114  | 6866 | 3.8367038  | 6899 | 3.8387861  |
| 6834 | 3.8346750  | 6867 | 3.8367670  | 6900 | 3.8388491  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 6901 | 3.8389120 | 6934 | 3.8409838 | 6967 | 3.8430458 |
| 6902 | 3.8389750 | 6935 | 3.8410465 | 6968 | 3.8431081 |
| 6903 | 3.8390379 | 6936 | 3.8411091 | 6969 | 3.8431705 |
| 6904 | 3.8391008 | 6937 | 3.8411717 | 6970 | 3.8432328 |
| 6905 | 3.8391637 | 6938 | 3.8412343 | 6971 | 3.8432951 |
| 6906 | 3.8392266 | 6939 | 3.8412969 | 6972 | 3.8433574 |
| 6907 | 3.8392895 | 6940 | 3.8413595 | 6973 | 3.8434197 |
| 6908 | 3.8393523 | 6941 | 3.8414220 | 6974 | 3.8434819 |
| 6909 | 3.8394152 | 6942 | 3.8414846 | 6975 | 3.8435442 |
| 6910 | 3.8394780 | 6943 | 3.8415472 | 6976 | 3.8436065 |
| 6911 | 3.8395409 | 6944 | 3.8416097 | 6977 | 3.8436687 |
| 6912 | 3.8396037 | 6945 | 3.8416722 | 6978 | 3.8437310 |
| 6913 | 3.8396666 | 6946 | 3.8417348 | 6979 | 3.8437932 |
| 6914 | 3.8397294 | 6947 | 3.8417973 | 6980 | 3.8438554 |
| 6915 | 3.8397922 | 6948 | 3.8418598 | 6981 | 3.8439176 |
| 6916 | 3.8398550 | 6949 | 3.8419223 | 6982 | 3.8439798 |
| 6917 | 3.8399178 | 6950 | 3.8419848 | 6983 | 3.8440420 |
| 6918 | 3.8399806 | 6951 | 3.8420473 | 6984 | 3.8441042 |
| 6919 | 3.8400433 | 6952 | 3.8421098 | 6985 | 3.8441664 |
| 6920 | 3.8401061 | 6953 | 3.8421722 | 6986 | 3.8442286 |
| 6921 | 3.8401688 | 6954 | 3.8422347 | 6987 | 3.8442907 |
| 6922 | 3.8402316 | 6955 | 3.8422971 | 6988 | 3.8443529 |
| 6923 | 3.8402943 | 6956 | 3.8423596 | 6989 | 3.8444150 |
| 6924 | 3.8403571 | 6957 | 3.8424220 | 6990 | 3.8444772 |
| 6925 | 3.8404198 | 6958 | 3.8424844 | 6991 | 3.8445393 |
| 6926 | 3.8404825 | 6959 | 3.8425468 | 6992 | 3.8416014 |
| 6927 | 3.8405452 | 6960 | 3.8426092 | 6993 | 3.8426635 |
| 6928 | 3.8406079 | 6961 | 3.8426716 | 6994 | 3.8447256 |
| 6929 | 3.8406706 | 6962 | 3.8427340 | 6995 | 3.8447877 |
| 6930 | 3.8407332 | 6963 | 3.8427964 | 6996 | 3.8448498 |
| 6931 | 3.8407959 | 6964 | 3.8428588 | 6997 | 3.8449119 |
| 6932 | 3.8408586 | 6965 | 3.8429211 | 6998 | 3.8449739 |
| 6933 | 3.8409212 | 6966 | 3.8429835 | 6999 | 3.8450360 |
| 6934 | 3.8409838 | 6967 | 3.8430458 | 7000 | 3.8450980 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 7001 | 3.8451601 | 7034 | 3.8472024 | 7067 | 3.8492351 |
| 7002 | 3.8452221 | 7035 | 3.8472641 | 7068 | 3.8492965 |
| 7003 | 3.8452841 | 7036 | 3.8473258 | 7069 | 3.8493580 |
| 7004 | 3.8453461 | 7037 | 3.8473876 | 7070 | 3.8494194 |
| 7005 | 3.8454081 | 7038 | 3.8474493 | 7071 | 3.8494808 |
| 7006 | 3.8454701 | 7039 | 3.8475110 | 7072 | 3.8495423 |
| 7007 | 3.8455321 | 7040 | 3.8475727 | 7073 | 3.8496037 |
| 7008 | 3.8455941 | 7041 | 3.8476343 | 7074 | 3.8496651 |
| 7009 | 3.8456561 | 7042 | 3.8476960 | 7075 | 3.8497264 |
| 7010 | 3.8457180 | 7043 | 3.8477577 | 7076 | 3.8497878 |
| 7011 | 3.8457800 | 7044 | 3.8478193 | 7077 | 3.8498492 |
| 7012 | 3.8458419 | 7045 | 3.8478810 | 7078 | 3.8499106 |
| 7013 | 3.8459038 | 7046 | 3.8479426 | 7079 | 3.8499719 |
| 7014 | 3.8459658 | 7047 | 3.8480043 | 7080 | 3.8500333 |
| 7015 | 3.8460277 | 7048 | 3.8480659 | 7081 | 3.8500946 |
| 7016 | 3.8460896 | 7049 | 3.8481275 | 7082 | 3.8501559 |
| 7017 | 3.8461515 | 7050 | 3.8481891 | 7083 | 3.8502172 |
| 7018 | 3.8462134 | 7051 | 3.8482507 | 7084 | 3.8502786 |
| 7019 | 3.8462752 | 7052 | 3.8483123 | 7085 | 3.8503399 |
| 7020 | 3.8463371 | 7053 | 3.8483739 | 7086 | 3.8504011 |
| 7021 | 3.8463990 | 7054 | 3.8484355 | 7087 | 3.8504624 |
| 7022 | 3.8464608 | 7055 | 3.8484970 | 7088 | 3.8505237 |
| 7023 | 3.8465227 | 7056 | 3.8485586 | 7089 | 3.8505850 |
| 7024 | 3.8465845 | 7057 | 3.8486201 | 7090 | 3.8506462 |
| 7025 | 3.8466463 | 7058 | 3.8486817 | 7091 | 3.8507075 |
| 7026 | 3.8467081 | 7059 | 3.8487432 | 7092 | 3.8507687 |
| 7027 | 3.8467700 | 7060 | 3.8488047 | 7093 | 3.8508300 |
| 7028 | 3.8468318 | 7061 | 3.8488662 | 7094 | 3.8508912 |
| 7029 | 3.8468935 | 7062 | 3.8489277 | 7095 | 3.8509524 |
| 7030 | 3.8469553 | 7063 | 3.8489892 | 7096 | 3.8510136 |
| 7031 | 3.8470171 | 7064 | 3.8490507 | 7097 | 3.8510748 |
| 7032 | 3.8470789 | 7065 | 3.8491122 | 7098 | 3.8511360 |
| 7033 | 3.8471406 | 7066 | 3.8491736 | 7099 | 3.8511972 |
| 7064 | 3.8472024 | 7067 | 3.8492351 | 7100 | 3.8512583 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 7101 | 3.8513195 | 7134 | 3.8533331 | 7167 | 3.8553374 |
| 7102 | 3.8513807 | 7135 | 3.8533940 | 7168 | 3.8553980 |
| 7103 | 3.8514418 | 7136 | 3.8534548 | 7169 | 3.8554586 |
| 7104 | 3.8515030 | 7137 | 3.8535157 | 7170 | 3.8555192 |
| 7105 | 3.8515641 | 7138 | 3.8535765 | 7171 | 3.8555790 |
| 7106 | 3.8516252 | 7139 | 3.8536374 | 7172 | 3.8556403 |
| 7107 | 3.8516863 | 7140 | 3.8536982 | 7173 | 3.8557008 |
| 7108 | 3.8517474 | 7141 | 3.8537590 | 7174 | 3.8557614 |
| 7109 | 3.8518085 | 7142 | 3.8538198 | 7175 | 3.8558219 |
| 7110 | 3.8518696 | 7143 | 3.8538806 | 7176 | 3.8558824 |
| 7111 | 3.8519307 | 7144 | 3.8539414 | 7177 | 3.8559429 |
| 7112 | 3.8519917 | 7145 | 3.8540022 | 7178 | 3.8560035 |
| 7113 | 3.8520528 | 7146 | 3.8540630 | 7179 | 3.8560640 |
| 7114 | 3.8521139 | 7147 | 3.8541238 | 7180 | 3.8561244 |
| 7115 | 3.8521749 | 7148 | 3.8541845 | 7181 | 3.8561849 |
| 7116 | 3.8522359 | 7149 | 3.8542453 | 7182 | 3.8562454 |
| 7117 | 3.8522970 | 7150 | 3.8543060 | 7183 | 3.8563059 |
| 7118 | 3.8523580 | 7151 | 3.8543668 | 7184 | 3.8563663 |
| 7119 | 3.8524190 | 7152 | 3.8544275 | 7185 | 3.8564268 |
| 7120 | 3.8524800 | 7153 | 3.8544882 | 7186 | 3.8564872 |
| 7121 | 3.8525410 | 7154 | 3.8545489 | 7187 | 3.8565476 |
| 7122 | 3.8526020 | 7155 | 3.8546096 | 7188 | 3.8566081 |
| 7123 | 3.8526629 | 7156 | 3.8546703 | 7189 | 3.8566685 |
| 7124 | 3.8527239 | 7157 | 3.8547310 | 7190 | 3.8567289 |
| 7125 | 3.8527849 | 7158 | 3.8547917 | 7191 | 3.8567893 |
| 7126 | 3.8528458 | 7159 | 3.8548524 | 7192 | 3.8568497 |
| 7127 | 3.8529068 | 7160 | 3.8549130 | 7193 | 3.8569101 |
| 7128 | 3.8529677 | 7161 | 3.8549737 | 7194 | 3.8569704 |
| 7129 | 3.8530286 | 7162 | 3.8550343 | 7195 | 3.8570308 |
| 7130 | 3.8530895 | 7163 | 3.8550949 | 7196 | 3.8570912 |
| 7131 | 3.8531504 | 7164 | 3.8551556 | 7197 | 3.8571515 |
| 7132 | 3.8532113 | 7165 | 3.8552162 | 7198 | 3.8572118 |
| 7133 | 3.8532722 | 7166 | 3.8552768 | 7199 | 3.8572722 |
| 7134 | 3.8533331 | 7167 | 3.8553374 | 7200 | 3.8573325 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 7201 | 3.8573928  | 7234 | 3.8593785  | 7267 | 3.8613852  |
| 7202 | 3.8574531  | 7235 | 3.8594385  | 7268 | 3.8614149  |
| 7203 | 3.8575134  | 7236 | 3.8594986  | 7269 | 3.8614747  |
| 7204 | 3.8575737  | 7237 | 3.8595586  | 7270 | 3.8615344  |
| 7205 | 3.8576340  | 7238 | 3.8596186  | 7271 | 3.8615941  |
| 7206 | 3.8576943  | 7239 | 3.8596786  | 7272 | 3.8616539  |
| 7207 | 3.8577545  | 7240 | 3.8597386  | 7273 | 3.8617136  |
| 7208 | 3.8578148  | 7241 | 3.8597985  | 7274 | 3.8617733  |
| 7209 | 3.8578750  | 7242 | 3.8598585  | 7275 | 3.8618330  |
| 7210 | 3.8579353  | 7243 | 3.8599185  | 7276 | 3.8618927  |
| 7211 | 3.8579955  | 7244 | 3.8599784  | 7277 | 3.8619524  |
| 7212 | 3.8580557  | 7245 | 3.8600384  | 7278 | 3.8620120  |
| 7213 | 3.8581159  | 7246 | 3.8600983  | 7279 | 3.8620717  |
| 7214 | 3.8581761  | 7247 | 3.8601583  | 7280 | 3.8621314  |
| 7215 | 3.8582363  | 7248 | 3.8602182  | 7281 | 3.8621910  |
| 7216 | 3.8582965  | 7249 | 3.8602781  | 7282 | 3.8622507  |
| 7217 | 3.8583567  | 7250 | 3.8603380  | 7283 | 3.8623103  |
| 7218 | 3.8584169  | 7251 | 3.8603979  | 7284 | 3.8623699  |
| 7219 | 3.8584770  | 7252 | 3.8604578  | 7285 | 3.8624296  |
| 7220 | 3.8585372  | 7253 | 3.8605177  | 7286 | 3.8624892  |
| 7221 | 3.8585973  | 7254 | 3.8605776  | 7287 | 3.8625488  |
| 7222 | 3.8586575  | 7255 | 3.8606374  | 7288 | 3.8626084  |
| 7223 | 3.8587176  | 7256 | 3.8606973  | 7289 | 3.8626679  |
| 7224 | 3.8587777  | 7257 | 3.8607571  | 7290 | 3.8627275  |
| 7225 | 3.8588379  | 7258 | 3.8608170  | 7291 | 3.8627871  |
| 7226 | 3.8588980  | 7259 | 3.8608768  | 7292 | 3.8628467  |
| 7227 | 3.8589581  | 7260 | 3.8609366  | 7293 | 3.8629062  |
| 7228 | 3.8590181  | 7261 | 3.8609964  | 7294 | 3.8629658  |
| 7229 | 3.8590782  | 7262 | 3.8610562  | 7295 | 3.8630253  |
| 7230 | 3.8591383  | 7263 | 3.8611160  | 7296 | 3.8630848  |
| 7231 | 3.8591984  | 7264 | 3.8611758  | 7297 | 3.8631443  |
| 7232 | 3.8592584  | 7265 | 3.8612356  | 7298 | 3.8632039  |
| 7233 | 3.8593185  | 7266 | 3.8612954  | 7299 | 3.8632634  |
| 7234 | 3.8593785  | 7267 | 3.8613552  | 7300 | 3.8633229  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 7301 | 3.8633823  | 7334 | 3.8653409  | 7367 | 3.8672907  |
| 7302 | 3.8634418  | 7335 | 3.8654001  | 7368 | 3.8673496  |
| 7303 | 3.8635013  | 7336 | 3.8654593  | 7369 | 3.8674086  |
| 7304 | 3.8635608  | 7337 | 3.8655185  | 7370 | 3.8674675  |
| 7305 | 3.8636202  | 7338 | 3.8655777  | 7371 | 3.8675264  |
| 7306 | 3.8636797  | 7339 | 3.8656369  | 7372 | 3.8675853  |
| 7307 | 3.8637391  | 7340 | 3.8656961  | 7373 | 3.8676442  |
| 7308 | 3.8637985  | 7341 | 3.8657552  | 7374 | 3.8677031  |
| 7309 | 3.8638580  | 7342 | 3.8658144  | 7375 | 3.8677620  |
| 7310 | 3.8639174  | 7343 | 3.8658735  | 7376 | 3.8678209  |
| 7311 | 3.8639768  | 7344 | 3.8659327  | 7377 | 3.8678798  |
| 7312 | 3.8640362  | 7345 | 3.8659918  | 7378 | 3.8679387  |
| 7313 | 3.8640956  | 7346 | 3.8660509  | 7379 | 3.8679975  |
| 7314 | 3.8641550  | 7347 | 3.8661100  | 7380 | 3.8680564  |
| 7315 | 3.8642143  | 7348 | 3.8661691  | 7381 | 3.8681152  |
| 7316 | 3.8642737  | 7349 | 3.8662282  | 7382 | 3.8681740  |
| 7317 | 3.8643331  | 7350 | 3.8662873  | 7383 | 3.8682329  |
| 7318 | 3.8643924  | 7351 | 3.8663464  | 7384 | 3.8682917  |
| 7319 | 3.8644517  | 7352 | 3.8664055  | 7385 | 3.8683505  |
| 7320 | 3.8645111  | 7353 | 3.8664646  | 7386 | 3.8684093  |
| 7321 | 3.8645704  | 7354 | 3.8665236  | 7387 | 3.8684681  |
| 7322 | 3.8646297  | 7355 | 3.8665827  | 7388 | 3.8685269  |
| 7323 | 3.8646890  | 7356 | 3.8666417  | 7389 | 3.8685857  |
| 7324 | 3.8647483  | 7357 | 3.8667008  | 7390 | 3.8686444  |
| 7325 | 3.8648076  | 7358 | 3.8667598  | 7391 | 3.8687032  |
| 7326 | 3.8648669  | 7359 | 3.8668188  | 7392 | 3.8687620  |
| 7327 | 3.8649262  | 7360 | 3.8668778  | 7393 | 3.8688207  |
| 7328 | 3.8649855  | 7361 | 3.8669368  | 7394 | 3.8688794  |
| 7329 | 3.8650447  | 7362 | 3.8669958  | 7395 | 3.8689382  |
| 7330 | 3.8651040  | 7363 | 3.8670548  | 7396 | 3.8689969  |
| 7331 | 3.8651632  | 7364 | 3.8671138  | 7397 | 3.8690556  |
| 7332 | 3.8652225  | 7365 | 3.8671728  | 7398 | 3.8691143  |
| 7333 | 3.8652817  | 7366 | 3.8672317  | 7399 | 3.8691730  |
| 7334 | 3.8653409  | 7367 | 3.8672907  | 7400 | 3.8692317  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 7401 | 3.8692904  | 7434 | 3.8712226  | 7467 | 3.8731461  |
| 7402 | 3.8693491  | 7435 | 3.8712810  | 7468 | 3.8732043  |
| 7403 | 3.8694077  | 7436 | 3.8713394  | 7469 | 3.8732625  |
| 7404 | 3.8694664  | 7437 | 3.8713978  | 7470 | 3.8733206  |
| 7405 | 3.8695251  | 7438 | 3.8714562  | 7471 | 3.8733787  |
| 7406 | 3.8695837  | 7439 | 3.8715146  | 7472 | 3.8734369  |
| 7407 | 3.8696423  | 7440 | 3.8715729  | 7473 | 3.8734950  |
| 7408 | 3.8697010  | 7441 | 3.8716313  | 7474 | 3.8735531  |
| 7409 | 3.8697596  | 7442 | 3.8716897  | 7475 | 3.8736112  |
| 7410 | 3.8698182  | 7443 | 3.8717480  | 7476 | 3.8736693  |
| 7411 | 3.8698768  | 7444 | 3.8718064  | 7477 | 3.8737274  |
| 7412 | 3.8699354  | 7445 | 3.8718647  | 7478 | 3.8737855  |
| 7413 | 3.8699940  | 7446 | 3.8719230  | 7479 | 3.8738435  |
| 7414 | 3.8700526  | 7447 | 3.8719814  | 7480 | 3.8739016  |
| 7415 | 3.8701112  | 7448 | 3.8720397  | 7481 | 3.8739597  |
| 7416 | 3.8701693  | 7449 | 3.8720980  | 7482 | 3.8740177  |
| 7417 | 3.8702283  | 7450 | 3.8721563  | 7483 | 3.8740757  |
| 7418 | 3.8702868  | 7451 | 3.8722146  | 7484 | 3.8741338  |
| 7419 | 3.8703454  | 7452 | 3.8722728  | 7485 | 3.8741918  |
| 7420 | 3.8704039  | 7453 | 3.8723311  | 7486 | 3.8742498  |
| 7421 | 3.8704624  | 7454 | 3.8723894  | 7487 | 3.8743078  |
| 7422 | 3.8705209  | 7455 | 3.8724476  | 7488 | 3.8743658  |
| 7423 | 3.8705795  | 7456 | 3.8725059  | 7489 | 3.8744238  |
| 7424 | 3.8706380  | 7457 | 3.8725641  | 7490 | 3.8744818  |
| 7425 | 3.8706965  | 7458 | 3.8726224  | 7491 | 3.8745398  |
| 7426 | 3.8707549  | 7459 | 3.8726806  | 7492 | 3.8745978  |
| 7427 | 3.8708134  | 7460 | 3.8727388  | 7493 | 3.8746557  |
| 7428 | 3.8708719  | 7461 | 3.8727970  | 7494 | 3.8747137  |
| 7429 | 3.8709304  | 7462 | 3.8728552  | 7495 | 3.8747716  |
| 7430 | 3.8709888  | 7463 | 3.8729134  | 7496 | 3.8748296  |
| 7431 | 3.8710473  | 7464 | 3.8729716  | 7497 | 3.8748875  |
| 7432 | 3.8711057  | 7465 | 3.8730298  | 7498 | 3.8749454  |
| 7433 | 3.8711641  | 7466 | 3.8730880  | 7499 | 3.8750034  |
| 7434 | 3.8712226  | 7467 | 3.8731461  | 7500 | 3.8750613  |



7500

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 7501 | 3.8751192 | 7534 | 3.8770256 | 7567 | 3.8789237 |
| 7502 | 3.8751771 | 7535 | 3.8770833 | 7568 | 3.8789811 |
| 7503 | 3.8752349 | 7536 | 3.8771409 | 7569 | 3.8790385 |
| 7504 | 3.8752928 | 7537 | 3.8771985 | 7570 | 3.8790959 |
| 7505 | 3.8753507 | 7538 | 3.8772561 | 7571 | 3.8791532 |
| 7506 | 3.8754086 | 7539 | 3.8773137 | 7572 | 3.8792106 |
| 7507 | 3.8754664 | 7540 | 3.8773713 | 7573 | 3.8792680 |
| 7508 | 3.8755243 | 7541 | 3.8774289 | 7574 | 3.8793253 |
| 7509 | 3.8755821 | 7542 | 3.8774865 | 7575 | 3.8793826 |
| 7510 | 3.8756399 | 7543 | 3.8775441 | 7576 | 3.8794400 |
| 7511 | 3.8756978 | 7544 | 3.8776017 | 7577 | 3.8794973 |
| 7512 | 3.8757556 | 7545 | 3.8776592 | 7578 | 3.8795546 |
| 7513 | 3.8758134 | 7546 | 3.8777168 | 7579 | 3.8796119 |
| 7514 | 3.8758712 | 7547 | 3.8777743 | 7580 | 3.8796692 |
| 7515 | 3.8759290 | 7548 | 3.8778319 | 7581 | 3.8797265 |
| 7516 | 3.8759868 | 7549 | 3.8778894 | 7582 | 3.8797838 |
| 7517 | 3.8760445 | 7550 | 3.8779469 | 7583 | 3.8798411 |
| 7518 | 3.8761023 | 7551 | 3.8780045 | 7584 | 3.8798983 |
| 7519 | 3.8761601 | 7552 | 3.8780620 | 7585 | 3.8799556 |
| 7520 | 3.8762178 | 7553 | 3.8781195 | 7586 | 3.8800128 |
| 7521 | 3.8762756 | 7554 | 3.8781770 | 7587 | 3.8800701 |
| 7522 | 3.8763333 | 7555 | 3.8782345 | 7588 | 3.8801273 |
| 7523 | 3.8763911 | 7556 | 3.8782919 | 7589 | 3.8801846 |
| 7524 | 3.8764488 | 7557 | 3.8783494 | 7590 | 3.8802418 |
| 7525 | 3.8765065 | 7558 | 3.8784069 | 7591 | 3.8802990 |
| 7526 | 3.8765642 | 7559 | 3.8784643 | 7592 | 3.8803562 |
| 7527 | 3.8766219 | 7560 | 3.8785218 | 7593 | 3.8804134 |
| 7528 | 3.8766796 | 7561 | 3.8785792 | 7594 | 3.8804706 |
| 7529 | 3.8767373 | 7562 | 3.8786367 | 7595 | 3.8805278 |
| 7530 | 3.8767950 | 7563 | 3.8786941 | 7596 | 3.8805850 |
| 7531 | 3.8768526 | 7564 | 3.8787515 | 7597 | 3.8806421 |
| 7532 | 3.8769103 | 7565 | 3.8788089 | 7598 | 3.8806993 |
| 7533 | 3.8769680 | 7566 | 3.8788663 | 7599 | 3.8807564 |
| 7534 | 3.8770256 | 7567 | 3.8789237 | 7600 | 3.8808136 |

7600

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 7601 | 3.8808707  | 7634 | 3.8827522  | 7667 | 3.8846255  |
| 7602 | 3.8809279  | 7635 | 3.8828090  | 7668 | 3.8846821  |
| 7603 | 3.8809850  | 7636 | 3.8828659  | 7669 | 3.8847387  |
| 7604 | 3.8810421  | 7637 | 3.8829228  | 7670 | 3.8847954  |
| 7605 | 3.8810992  | 7638 | 3.8829797  | 7671 | 3.8848520  |
| 7606 | 3.8811563  | 7639 | 3.8830365  | 7672 | 3.8849086  |
| 7607 | 3.8812134  | 7640 | 3.8830934  | 7673 | 3.8849652  |
| 7608 | 3.8812705  | 7641 | 3.8831502  | 7674 | 3.8850218  |
| 7609 | 3.8813276  | 7642 | 3.8832070  | 7675 | 3.8850784  |
| 7610 | 3.8813847  | 7643 | 3.8832639  | 7676 | 3.8851350  |
| 7611 | 3.8814417  | 7644 | 3.8833207  | 7677 | 3.8851915  |
| 7612 | 3.8814988  | 7645 | 3.8833775  | 7678 | 3.8852481  |
| 7613 | 3.8815558  | 7646 | 3.8834343  | 7679 | 3.8853047  |
| 7614 | 3.8816129  | 7647 | 3.8834911  | 7680 | 3.8853612  |
| 7615 | 3.8816699  | 7648 | 3.8835479  | 7681 | 3.8854178  |
| 7616 | 3.8817269  | 7649 | 3.8836047  | 7682 | 3.8854743  |
| 7617 | 3.8817840  | 7650 | 3.8836614  | 7683 | 3.8855308  |
| 7618 | 3.8818410  | 7651 | 3.8837182  | 7684 | 3.8855874  |
| 7619 | 3.8818980  | 7652 | 3.8837750  | 7685 | 3.8856439  |
| 7620 | 3.8819550  | 7653 | 3.8838317  | 7686 | 3.8857004  |
| 7621 | 3.8820120  | 7654 | 3.8838885  | 7687 | 3.8857569  |
| 7622 | 3.8820689  | 7655 | 3.8839452  | 7688 | 3.8858134  |
| 7623 | 3.8821259  | 7656 | 3.8840019  | 7689 | 3.8858699  |
| 7624 | 3.8821829  | 7657 | 3.8840586  | 7690 | 3.8859263  |
| 7625 | 3.8822398  | 7658 | 3.8841154  | 7691 | 3.8859828  |
| 7626 | 3.8822968  | 7659 | 3.8841721  | 7692 | 3.8860393  |
| 7627 | 3.8823537  | 7660 | 3.8842288  | 7693 | 3.8860957  |
| 7628 | 3.8824107  | 7661 | 3.8842855  | 7694 | 3.8861522  |
| 7629 | 3.8824676  | 7662 | 3.8843421  | 7695 | 3.8862086  |
| 7630 | 3.8825245  | 7663 | 3.8843988  | 7696 | 3.8862651  |
| 7631 | 3.8825815  | 7664 | 3.8844555  | 7697 | 3.8863215  |
| 7632 | 3.8826384  | 7665 | 3.8845122  | 7698 | 3.8863779  |
| 7633 | 3.8826953  | 7666 | 3.8845688  | 7699 | 3.8864343  |
| 7634 | 3.8827522  | 7667 | 3.8846255  | 7700 | 3.8864907  |

7700

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 7701 | 3.8865471  | 7734 | 3.8884042  | 7767 | 3.8902533  |
| 7702 | 3.8866035  | 7735 | 3.8884603  | 7768 | 3.8903092  |
| 7703 | 3.8866599  | 7736 | 3.8885165  | 7769 | 3.8903651  |
| 7704 | 3.8867163  | 7737 | 3.8885726  | 7770 | 3.8904210  |
| 7705 | 3.8867726  | 7738 | 3.8886287  | 7771 | 3.8904769  |
| 7706 | 3.8868290  | 7739 | 3.8886848  | 7772 | 3.8905328  |
| 7707 | 3.8868854  | 7740 | 3.8887410  | 7773 | 3.8905887  |
| 7708 | 3.8869417  | 7741 | 3.8887971  | 7774 | 3.8906445  |
| 7709 | 3.8869980  | 7742 | 3.8888532  | 7775 | 3.8907004  |
| 7710 | 3.8870544  | 7743 | 3.8889093  | 7776 | 3.8907563  |
| 7711 | 3.8871107  | 7744 | 3.8889653  | 7777 | 3.8908121  |
| 7712 | 3.8871670  | 7745 | 3.8890214  | 7778 | 3.8908679  |
| 7713 | 3.8872233  | 7746 | 3.8890775  | 7779 | 3.8909238  |
| 7714 | 3.8872796  | 7747 | 3.8891336  | 7780 | 3.8909796  |
| 7715 | 3.8873359  | 7748 | 3.8891896  | 7781 | 3.8910354  |
| 7716 | 3.8873922  | 7749 | 3.8892457  | 7782 | 3.8910912  |
| 7717 | 3.8874485  | 7750 | 3.8893017  | 7783 | 3.8911470  |
| 7718 | 3.8875048  | 7751 | 3.8893577  | 7784 | 3.8912028  |
| 7719 | 3.8875610  | 7752 | 3.8894138  | 7785 | 3.8912586  |
| 7720 | 3.8876173  | 7753 | 3.8894698  | 7786 | 3.8913144  |
| 7721 | 3.8876736  | 7754 | 3.8895258  | 7787 | 3.8913702  |
| 7722 | 3.8877298  | 7755 | 3.8895818  | 7788 | 3.8914259  |
| 7723 | 3.8877860  | 7756 | 3.8896378  | 7789 | 3.8914817  |
| 7724 | 3.8878423  | 7757 | 3.8896938  | 7790 | 3.8915375  |
| 7725 | 3.8878985  | 7758 | 3.8897498  | 7791 | 3.8915932  |
| 7726 | 3.8879547  | 7759 | 3.8898058  | 7792 | 3.8916489  |
| 7727 | 3.8880109  | 7760 | 3.8898617  | 7793 | 3.8917047  |
| 7728 | 3.8880671  | 7761 | 3.8899177  | 7794 | 3.8917604  |
| 7729 | 3.8881233  | 7762 | 3.8899736  | 7795 | 3.8918161  |
| 7730 | 3.8881795  | 7763 | 3.8900296  | 7796 | 3.8918718  |
| 7731 | 3.8882357  | 7764 | 3.8900855  | 7797 | 3.8919275  |
| 7732 | 3.8882918  | 7765 | 3.8901415  | 7798 | 3.8919832  |
| 7733 | 3.8883480  | 7766 | 3.8901974  | 7799 | 3.8920389  |
| 7734 | 3.8884042  | 7767 | 3.8902533  | 7800 | 3.8920946  |

7800

7800

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 7801 | 3.8921503 | 7834 | 3.8939836 | 7867 | 3.8958091 |
| 7802 | 3.8922059 | 7835 | 3.8940390 | 7868 | 3.8958643 |
| 7803 | 3.8922616 | 7836 | 3.8940944 | 7869 | 3.8959195 |
| 7804 | 3.8923173 | 7837 | 3.8941498 | 7870 | 3.8959747 |
| 7805 | 3.8923729 | 7838 | 3.8942053 | 7871 | 3.8960299 |
| 7806 | 3.8924285 | 7839 | 3.8942607 | 7872 | 3.8960851 |
| 7807 | 3.8924842 | 7840 | 3.8943161 | 7873 | 3.8961403 |
| 7808 | 3.8925398 | 7841 | 3.8943715 | 7874 | 3.8961954 |
| 7809 | 3.8925954 | 7842 | 3.8944268 | 7875 | 3.8962506 |
| 7810 | 3.8926510 | 7843 | 3.8944822 | 7876 | 3.8963057 |
| 7811 | 3.8927066 | 7844 | 3.8945376 | 7877 | 3.8963608 |
| 7812 | 3.8927622 | 7845 | 3.8945929 | 7878 | 3.8964160 |
| 7813 | 3.8928178 | 7846 | 3.8946483 | 7879 | 3.8964711 |
| 7814 | 3.8928734 | 7847 | 3.8947037 | 7880 | 3.8965262 |
| 7815 | 3.8929290 | 7848 | 3.8947590 | 7881 | 3.8965813 |
| 7816 | 3.8929846 | 7849 | 3.8948143 | 7882 | 3.8966364 |
| 7817 | 3.8930401 | 7850 | 3.8948697 | 7883 | 3.8966915 |
| 7818 | 3.8930957 | 7851 | 3.8949250 | 7884 | 3.8967466 |
| 7819 | 3.8931512 | 7852 | 3.8949803 | 7885 | 3.8968017 |
| 7820 | 3.8932068 | 7853 | 3.8950356 | 7886 | 3.8968568 |
| 7821 | 3.8932623 | 7854 | 3.8950909 | 7887 | 3.8969118 |
| 7822 | 3.8933178 | 7855 | 3.8951462 | 7888 | 3.8969669 |
| 7823 | 3.8933733 | 7856 | 3.8952015 | 7889 | 3.8970220 |
| 7824 | 3.8934288 | 7857 | 3.8952568 | 7890 | 3.8970770 |
| 7825 | 3.8934843 | 7858 | 3.8953120 | 7891 | 3.8971320 |
| 7826 | 3.8935398 | 7859 | 3.8953673 | 7892 | 3.8971871 |
| 7827 | 3.8935953 | 7860 | 3.8954225 | 7893 | 3.8972421 |
| 7828 | 3.8936508 | 7861 | 3.8954778 | 7894 | 3.8972971 |
| 7829 | 3.8937063 | 7862 | 3.8955330 | 7895 | 3.8973521 |
| 7830 | 3.8937618 | 7863 | 3.8955883 | 7896 | 3.8974071 |
| 7831 | 3.8938172 | 7864 | 3.8956435 | 7897 | 3.8974621 |
| 7832 | 3.8938727 | 7865 | 3.8956987 | 7898 | 3.8975171 |
| 7833 | 3.8939281 | 7866 | 3.8957539 | 7899 | 3.8975721 |
| 7834 | 3.8939836 | 7867 | 3.8958091 | 7900 | 3.8976271 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 7901 | 3.8976821 | 7934 | 3.8994922 | 7967 | 3.9012948 |
| 7902 | 3.8977370 | 7935 | 3.8995469 | 7968 | 3.9013493 |
| 7903 | 3.8977920 | 7936 | 3.8996017 | 7969 | 3.9014038 |
| 7904 | 3.8978469 | 7937 | 3.8996564 | 7970 | 3.9014583 |
| 7905 | 3.8979019 | 7938 | 3.8997111 | 7971 | 3.9015128 |
| 7906 | 3.8979568 | 7939 | 3.8997658 | 7972 | 3.9015673 |
| 7907 | 3.8980117 | 7940 | 3.8998205 | 7973 | 3.9016218 |
| 7908 | 3.8980667 | 7941 | 3.8998752 | 7974 | 3.9016762 |
| 7909 | 3.8981216 | 7942 | 3.8999299 | 7975 | 3.9017307 |
| 7910 | 3.8981765 | 7943 | 3.8999846 | 7976 | 3.9017851 |
| 7911 | 3.8982314 | 7944 | 3.9000392 | 7977 | 3.9018396 |
| 7912 | 3.8982863 | 7945 | 3.9000939 | 7978 | 3.9018940 |
| 7913 | 3.8983412 | 7946 | 3.9001486 | 7979 | 3.9019485 |
| 7914 | 3.8983960 | 7947 | 3.9002032 | 7980 | 3.9020029 |
| 7915 | 3.8984509 | 7948 | 3.9002579 | 7981 | 3.9020573 |
| 7916 | 3.8985058 | 7949 | 3.9003125 | 7982 | 3.9021117 |
| 7917 | 3.8985606 | 7950 | 3.9003671 | 7983 | 3.9021661 |
| 7918 | 3.8986155 | 7951 | 3.9004218 | 7984 | 3.9022205 |
| 7919 | 3.8986703 | 7952 | 3.9004764 | 7985 | 3.9022749 |
| 7920 | 3.8987252 | 7953 | 3.9005310 | 7986 | 3.9023293 |
| 7921 | 3.8987800 | 7954 | 3.9005856 | 7987 | 3.9023837 |
| 7922 | 3.8988348 | 7955 | 3.9006402 | 7988 | 3.9024381 |
| 7923 | 3.8988897 | 7956 | 3.9006948 | 7989 | 3.9024924 |
| 7924 | 3.8989445 | 7957 | 3.9007494 | 7990 | 3.9025468 |
| 7925 | 3.8989993 | 7958 | 3.9008039 | 7991 | 3.9026011 |
| 7926 | 3.8990541 | 7959 | 3.9008585 | 7992 | 3.9026555 |
| 7927 | 3.8991089 | 7960 | 3.9009131 | 7993 | 3.9027098 |
| 7928 | 3.8991636 | 7961 | 3.9009676 | 7994 | 3.9027641 |
| 7929 | 3.8992184 | 7962 | 3.9010222 | 7995 | 3.9028185 |
| 7930 | 3.8992732 | 7963 | 3.9010767 | 7996 | 3.9028728 |
| 7931 | 3.8993279 | 7964 | 3.9011313 | 7997 | 3.9029271 |
| 7932 | 3.8993827 | 7965 | 3.9011858 | 7998 | 3.9029814 |
| 7933 | 3.8994375 | 7966 | 3.9012403 | 7999 | 3.9030357 |
| 7934 | 3.8994922 | 7967 | 3.9012948 | 8000 | 3.9030900 |

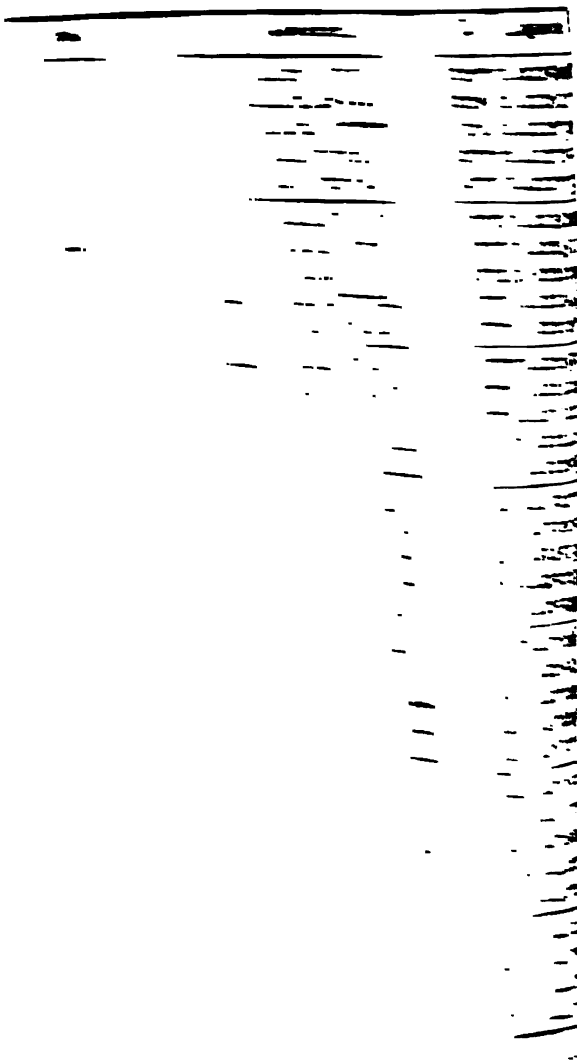
| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 8001 | 3.9031443  | 8034 | 3.9049318  | 8067 | 3.9067121  |
| 8002 | 3.9031985  | 8035 | 3.9049859  | 8068 | 3.9067659  |
| 8003 | 3.9032528  | 8036 | 3.9050399  | 8069 | 3.9068197  |
| 8004 | 3.9033071  | 8037 | 3.9050940  | 8070 | 3.9068735  |
| 8005 | 3.9033613  | 8038 | 3.9051480  | 8071 | 3.9069273  |
| 8006 | 3.9034156  | 8039 | 3.9052020  | 8072 | 3.9069812  |
| 8007 | 3.9034698  | 8040 | 3.9052560  | 8073 | 3.9070350  |
| 8008 | 3.9035241  | 8041 | 3.9053101  | 8074 | 3.9070887  |
| 8009 | 3.9035783  | 8042 | 3.9053641  | 8075 | 3.9071425  |
| 8010 | 3.9036325  | 8043 | 3.9054181  | 8076 | 3.9071963  |
| 8011 | 3.9036867  | 8044 | 3.9054721  | 8077 | 3.9072501  |
| 8012 | 3.9037409  | 8045 | 3.9055260  | 8078 | 3.9073038  |
| 8013 | 3.9037951  | 8046 | 3.9055800  | 8079 | 3.9073576  |
| 8014 | 3.9038493  | 8047 | 3.9056340  | 8080 | 3.9074114  |
| 8015 | 3.9039035  | 8048 | 3.9056880  | 8081 | 3.9074651  |
| 8016 | 3.9039577  | 8049 | 3.9057419  | 8082 | 3.9075188  |
| 8017 | 3.9040119  | 8050 | 3.9057959  | 8083 | 3.9075726  |
| 8018 | 3.9040661  | 8051 | 3.9058498  | 8084 | 3.9076263  |
| 8019 | 3.9041202  | 8052 | 3.9059038  | 8085 | 3.9076800  |
| 8020 | 3.9041744  | 8053 | 3.9059577  | 8086 | 3.9077337  |
| 8021 | 3.9042285  | 8054 | 3.9060116  | 8087 | 3.9077874  |
| 8022 | 3.9042827  | 8055 | 3.9060655  | 8088 | 3.9078411  |
| 8023 | 3.9043368  | 8056 | 3.9061195  | 8089 | 3.9078948  |
| 8024 | 3.9043909  | 8057 | 3.9061734  | 8090 | 3.9079485  |
| 8025 | 3.9044450  | 8058 | 3.9062273  | 8091 | 3.9080022  |
| 8026 | 3.9044992  | 8059 | 3.9062812  | 8092 | 3.9080559  |
| 8027 | 3.9045533  | 8060 | 3.9063350  | 8093 | 3.9081095  |
| 8028 | 3.9046074  | 8061 | 3.9063889  | 8094 | 3.9081632  |
| 8029 | 3.9046615  | 8062 | 3.9064428  | 8095 | 3.9082169  |
| 8030 | 3.9047155  | 8063 | 3.9064967  | 8096 | 3.9082705  |
| 8031 | 3.9047696  | 8064 | 3.9065505  | 8097 | 3.9083241  |
| 8032 | 3.9048237  | 8065 | 3.9066044  | 8098 | 3.9083778  |
| 8033 | 3.9048778  | 8066 | 3.9066582  | 8099 | 3.9084314  |
| 8034 | 3.9049318  | 8067 | 3.9067121  | 8100 | 3.9084850  |

## 8100

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 8101 | 3.9085386  | 8134 | 3.9103042  | 8167 | 3.9120626  |
| 8102 | 3.9085922  | 8135 | 3.9103576  | 8168 | 3.9121157  |
| 8103 | 3.9086458  | 8136 | 3.9104109  | 8169 | 3.9121689  |
| 8104 | 3.9086994  | 8137 | 3.9104643  | 8170 | 3.9122221  |
| 8105 | 3.9087530  | 8138 | 3.9105177  | 8171 | 3.9122752  |
| 8106 | 3.9088066  | 8139 | 3.9105710  | 8172 | 3.9123284  |
| 8107 | 3.9088602  | 8140 | 3.9106244  | 8173 | 3.9123815  |
| 8108 | 3.9089137  | 8141 | 3.9106778  | 8174 | 3.9124346  |
| 8109 | 3.9089673  | 8142 | 3.9107311  | 8175 | 3.9124878  |
| 8110 | 3.9090209  | 8143 | 3.9107844  | 8176 | 3.9125409  |
| 8111 | 3.9090744  | 8144 | 3.9108378  | 8177 | 3.9125940  |
| 8112 | 3.9091279  | 8145 | 3.9108911  | 8178 | 3.9126471  |
| 8113 | 3.9091815  | 8146 | 3.9109444  | 8179 | 3.9127002  |
| 8114 | 3.9092350  | 8147 | 3.9109977  | 8180 | 3.9127533  |
| 8115 | 3.9092885  | 8148 | 3.9110510  | 8181 | 3.9128064  |
| 8116 | 3.9093420  | 8149 | 3.9111043  | 8182 | 3.9128595  |
| 8117 | 3.9093955  | 8150 | 3.9111576  | 8183 | 3.9129126  |
| 8118 | 3.9094490  | 8151 | 3.9112109  | 8184 | 3.9129656  |
| 8119 | 3.9095025  | 8152 | 3.9112642  | 8185 | 3.9130187  |
| 8120 | 3.9095560  | 8153 | 3.9113174  | 8186 | 3.9130717  |
| 8121 | 3.9096095  | 8154 | 3.9113707  | 8187 | 3.9131248  |
| 8122 | 3.9096630  | 8155 | 3.9114240  | 8188 | 3.9131778  |
| 8123 | 3.9097165  | 8156 | 3.9114772  | 8189 | 3.9132309  |
| 8124 | 3.9097699  | 8157 | 3.9115305  | 8190 | 3.9132839  |
| 8125 | 3.9098234  | 8158 | 3.9115837  | 8191 | 3.9133369  |
| 8126 | 3.9098768  | 8159 | 3.9116369  | 8192 | 3.9133899  |
| 8127 | 3.9099303  | 8160 | 3.9116902  | 8193 | 3.9134430  |
| 8128 | 3.9099837  | 8161 | 3.9117434  | 8194 | 3.9134960  |
| 8129 | 3.9100371  | 8162 | 3.9117966  | 8195 | 3.9135490  |
| 8130 | 3.9100905  | 8163 | 3.9118498  | 8196 | 3.9136019  |
| 8131 | 3.9101440  | 8164 | 3.9119030  | 8197 | 3.9136549  |
| 8132 | 3.9101974  | 8165 | 3.9119562  | 8198 | 3.9137079  |
| 8133 | 3.9102508  | 8166 | 3.9120091  | 8199 | 3.9137609  |
| 8134 | 3.9103042  | 8167 | 3.9120626  | 8200 | 3.9138139  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 8201 | 3.9138668  | 8234 | 3.9156109  | 8267 | 3.9173479  |
| 8202 | 3.9139198  | 8235 | 3.9156636  | 8268 | 3.9174005  |
| 8203 | 3.9139727  | 8236 | 3.9157163  | 8269 | 3.9174530  |
| 8204 | 3.9140257  | 8237 | 3.9157691  | 8270 | 3.9175055  |
| 8205 | 3.9140786  | 8238 | 3.9158218  | 8271 | 3.9175580  |
| 8206 | 3.9141315  | 8239 | 3.9158745  | 8272 | 3.9176105  |
| 8207 | 3.9141844  | 8240 | 3.9159272  | 8273 | 3.9176630  |
| 8208 | 3.9142378  | 8241 | 3.9159799  | 8274 | 3.9177155  |
| 8209 | 3.9142903  | 8242 | 3.9160326  | 8275 | 3.9177680  |
| 8210 | 3.9143432  | 8243 | 3.9160853  | 8276 | 3.9178205  |
| 8211 | 3.9143961  | 8244 | 3.9161380  | 8277 | 3.9178730  |
| 8212 | 3.9144489  | 8245 | 3.9161907  | 8278 | 3.9179254  |
| 8213 | 3.9145018  | 8246 | 3.9162433  | 8279 | 3.9179779  |
| 8214 | 3.9145547  | 8247 | 3.9162960  | 8280 | 3.9180303  |
| 8215 | 3.9146076  | 8248 | 3.9163487  | 8281 | 3.9180828  |
| 8216 | 3.9146604  | 8249 | 3.9164013  | 8282 | 3.9181352  |
| 8217 | 3.9147133  | 8250 | 3.9164539  | 8283 | 3.9181877  |
| 8218 | 3.9147661  | 8251 | 3.9165066  | 8284 | 3.9182401  |
| 8219 | 3.9148190  | 8252 | 3.9165592  | 8285 | 3.9182925  |
| 8220 | 3.9148718  | 8253 | 3.9166118  | 8286 | 3.9183449  |
| 8221 | 3.9149246  | 8254 | 3.9166645  | 8287 | 3.9183973  |
| 8222 | 3.9149775  | 8255 | 3.9167171  | 8288 | 3.9184497  |
| 8223 | 3.9150303  | 8256 | 3.9167697  | 8289 | 3.9185021  |
| 8224 | 3.9150831  | 8257 | 3.9168223  | 8290 | 3.9185545  |
| 8225 | 3.9151359  | 8258 | 3.9168749  | 8291 | 3.9186069  |
| 8226 | 3.9151887  | 8259 | 3.9169275  | 8292 | 3.9186593  |
| 8227 | 3.9152415  | 8260 | 3.9169800  | 8293 | 3.9187117  |
| 8228 | 3.9152943  | 8261 | 3.9170326  | 8294 | 3.9187640  |
| 8229 | 3.9153471  | 8262 | 3.9170852  | 8295 | 3.9188164  |
| 8230 | 3.9153998  | 8263 | 3.9171378  | 8296 | 3.9188687  |
| 8231 | 3.9154526  | 8264 | 3.9171903  | 8297 | 3.9189211  |
| 8232 | 3.9155054  | 8265 | 3.9172429  | 8298 | 3.9189734  |
| 8233 | 3.9155581  | 8266 | 3.9172954  | 8299 | 3.9190258  |
| 8234 | 3.9156109  | 8267 | 3.9173479  | 8300 | 3.9190781  |





| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 8401 | 3.9243310  | 8434 | 3.9260336  | 8467 | 3.9277296  |
| 8402 | 3.9243827  | 8435 | 3.9260851  | 8468 | 3.9277808  |
| 8403 | 3.9244344  | 8436 | 3.9261366  | 8469 | 3.9278321  |
| 8404 | 3.9244860  | 8437 | 3.9261880  | 8470 | 3.9278834  |
| 8405 | 3.9245377  | 8438 | 3.9262395  | 8471 | 3.9279347  |
| 8406 | 3.9245894  | 8439 | 3.9262910  | 8472 | 3.9279859  |
| 8407 | 3.9246410  | 8440 | 3.9263424  | 8473 | 3.9280372  |
| 8408 | 3.9246927  | 8441 | 3.9263939  | 8474 | 3.9280885  |
| 8409 | 3.9247444  | 8442 | 3.9264453  | 8475 | 3.9281397  |
| 8410 | 3.9247960  | 8443 | 3.9264968  | 8476 | 3.9281909  |
| 8411 | 3.9248476  | 8444 | 3.9265482  | 8477 | 3.9282422  |
| 8412 | 3.9248993  | 8445 | 3.9265997  | 8478 | 3.9282934  |
| 8413 | 3.9249509  | 8446 | 3.9266511  | 8479 | 3.9283446  |
| 8414 | 3.9250025  | 8447 | 3.9267025  | 8480 | 3.9283959  |
| 8415 | 3.9250541  | 8448 | 3.9267539  | 8481 | 3.9284471  |
| 8416 | 3.9251057  | 8449 | 3.9268053  | 8482 | 3.9284983  |
| 8417 | 3.9251573  | 8450 | 3.9268567  | 8483 | 3.9285495  |
| 8418 | 3.9252089  | 8451 | 3.9269081  | 8484 | 3.9286007  |
| 8419 | 3.9252605  | 8452 | 3.9269595  | 8485 | 3.9286518  |
| 8420 | 3.9253121  | 8453 | 3.9270109  | 8486 | 3.9287030  |
| 8421 | 3.9253637  | 8454 | 3.9270622  | 8487 | 3.9287542  |
| 8422 | 3.9254152  | 8455 | 3.9271136  | 8488 | 3.9288054  |
| 8423 | 3.9254668  | 8456 | 3.9271650  | 8489 | 3.9288565  |
| 8424 | 3.9255184  | 8457 | 3.9272163  | 8490 | 3.9289077  |
| 8425 | 3.9255699  | 8458 | 3.9272677  | 8491 | 3.9289588  |
| 8426 | 3.9256215  | 8459 | 3.9273190  | 8492 | 3.9290100  |
| 8427 | 3.9256730  | 8460 | 3.9273704  | 8493 | 3.9290611  |
| 8428 | 3.9257245  | 8461 | 3.9274217  | 8494 | 3.9291123  |
| 8429 | 3.9257761  | 8462 | 3.9274730  | 8495 | 3.9291634  |
| 8430 | 3.9258276  | 8463 | 3.9275243  | 8496 | 3.9292145  |
| 8431 | 3.9258791  | 8464 | 3.9275757  | 8497 | 3.9292656  |
| 8432 | 3.9259306  | 8465 | 3.9276270  | 8498 | 3.9293167  |
| 8433 | 3.9259821  | 8466 | 3.9276783  | 8499 | 3.9293678  |
| 8434 | 3.9260336  | 8467 | 3.9277296  | 8500 | 3.9294189  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 7501 | 3.8751192 | 7534 | 3.8770256 | 7567 | 3.8789237 |
| 7502 | 3.8751771 | 7535 | 3.8770833 | 7568 | 3.8789811 |
| 7503 | 3.8752349 | 7536 | 3.8771409 | 7569 | 3.8790385 |
| 7504 | 3.8752928 | 7537 | 3.8771985 | 7570 | 3.8790959 |
| 7505 | 3.8753507 | 7538 | 3.8772561 | 7571 | 3.8791532 |
| 7506 | 3.8754086 | 7539 | 3.8773137 | 7572 | 3.8792106 |
| 7507 | 3.8754664 | 7540 | 3.8773713 | 7573 | 3.8792680 |
| 7508 | 3.8755243 | 7541 | 3.8774289 | 7574 | 3.8793253 |
| 7509 | 3.8755821 | 7542 | 3.8774865 | 7575 | 3.8793826 |
| 7510 | 3.8756399 | 7543 | 3.8775441 | 7576 | 3.8794400 |
| 7511 | 3.8756978 | 7544 | 3.8776017 | 7577 | 3.8794973 |
| 7512 | 3.8757556 | 7545 | 3.8776592 | 7578 | 3.8795546 |
| 7513 | 3.8758134 | 7546 | 3.8777168 | 7579 | 3.8796119 |
| 7514 | 3.8758712 | 7547 | 3.8777743 | 7580 | 3.8796692 |
| 7515 | 3.8759290 | 7548 | 3.8778319 | 7581 | 3.8797265 |
| 7516 | 3.8759868 | 7549 | 3.8778894 | 7582 | 3.8797838 |
| 7517 | 3.8760445 | 7550 | 3.8779469 | 7583 | 3.8798411 |
| 7518 | 3.8761023 | 7551 | 3.8780045 | 7584 | 3.8798983 |
| 7519 | 3.8761601 | 7552 | 3.8780620 | 7585 | 3.8799556 |
| 7520 | 3.8762178 | 7553 | 3.8781195 | 7586 | 3.8800128 |
| 7521 | 3.8762756 | 7554 | 3.8781770 | 7587 | 3.8800701 |
| 7522 | 3.8763333 | 7555 | 3.8782345 | 7588 | 3.8801273 |
| 7523 | 3.8763911 | 7556 | 3.8782919 | 7589 | 3.8801846 |
| 7524 | 3.8764488 | 7557 | 3.8783494 | 7590 | 3.8802418 |
| 7525 | 3.8765065 | 7558 | 3.8784069 | 7591 | 3.8802990 |
| 7526 | 3.8765642 | 7559 | 3.8784643 | 7592 | 3.8803562 |
| 7527 | 3.8766219 | 7560 | 3.8785218 | 7593 | 3.8804134 |
| 7528 | 3.8766796 | 7561 | 3.8785792 | 7594 | 3.8804706 |
| 7529 | 3.8767373 | 7562 | 3.8786367 | 7595 | 3.8805278 |
| 7530 | 3.8767950 | 7563 | 3.8786941 | 7596 | 3.8805850 |
| 7531 | 3.8768526 | 7564 | 3.8787515 | 7597 | 3.8806421 |
| 7532 | 3.8769103 | 7565 | 3.8788089 | 7598 | 3.8806993 |
| 7533 | 3.8769680 | 7566 | 3.8788663 | 7599 | 3.8807564 |
| 7534 | 3.8770256 | 7567 | 3.8789237 | 7600 | 3.8808136 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 7601 | 3.8808707 | 7634 | 3.8827522 | 7667 | 3.8846255 |
| 7602 | 3.8809279 | 7635 | 3.8828090 | 7668 | 3.8846821 |
| 7603 | 3.8809850 | 7636 | 3.8828659 | 7669 | 3.8847387 |
| 7604 | 3.8810421 | 7637 | 3.8829228 | 7670 | 3.8847954 |
| 7605 | 3.8810992 | 7638 | 3.8829797 | 7671 | 3.8848520 |
| 7606 | 3.8811563 | 7639 | 3.8830365 | 7672 | 3.8849086 |
| 7607 | 3.8812134 | 7640 | 3.8830934 | 7673 | 3.8849652 |
| 7608 | 3.8812705 | 7641 | 3.8831502 | 7674 | 3.8850218 |
| 7609 | 3.8813276 | 7642 | 3.8832070 | 7675 | 3.8850784 |
| 7610 | 3.8813847 | 7643 | 3.8832639 | 7676 | 3.8851350 |
| 7611 | 3.8814417 | 7644 | 3.8833207 | 7677 | 3.8851915 |
| 7612 | 3.8814988 | 7645 | 3.8833775 | 7678 | 3.8852481 |
| 7613 | 3.8815558 | 7646 | 3.8834343 | 7679 | 3.8853047 |
| 7614 | 3.8816129 | 7647 | 3.8834911 | 7680 | 3.8853612 |
| 7615 | 3.8816699 | 7648 | 3.8835479 | 7681 | 3.8854178 |
| 7616 | 3.8817269 | 7649 | 3.8836047 | 7682 | 3.8854743 |
| 7617 | 3.8817840 | 7650 | 3.8836614 | 7683 | 3.8855308 |
| 7618 | 3.8818410 | 7651 | 3.8837182 | 7684 | 3.8855874 |
| 7619 | 3.8818980 | 7652 | 3.8837750 | 7685 | 3.8856439 |
| 7620 | 3.8819550 | 7653 | 3.8838317 | 7686 | 3.8857004 |
| 7621 | 3.8820120 | 7654 | 3.8838885 | 7687 | 3.8857569 |
| 7622 | 3.8820689 | 7655 | 3.8839452 | 7688 | 3.8858134 |
| 7623 | 3.8821259 | 7656 | 3.8840019 | 7689 | 3.8858699 |
| 7624 | 3.8821829 | 7657 | 3.8840586 | 7690 | 3.8859263 |
| 7625 | 3.8822398 | 7658 | 3.8841154 | 7691 | 3.8859828 |
| 7626 | 3.8822968 | 7659 | 3.8841721 | 7692 | 3.8860393 |
| 7627 | 3.8823537 | 7660 | 3.8842288 | 7693 | 3.8860957 |
| 7628 | 3.8824107 | 7661 | 3.8842855 | 7694 | 3.8861522 |
| 7629 | 3.8824676 | 7662 | 3.8843421 | 7695 | 3.8862086 |
| 7630 | 3.8825245 | 7663 | 3.8843988 | 7696 | 3.8862651 |
| 7631 | 3.8825815 | 7664 | 3.8844555 | 7697 | 3.8863215 |
| 7632 | 3.8826384 | 7665 | 3.8845122 | 7698 | 3.8863779 |
| 7633 | 3.8826953 | 7666 | 3.8845688 | 7699 | 3.8864343 |
| 7634 | 3.8827522 | 7667 | 3.8846255 | 7700 | 3.8864907 |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 7701 | 3.8865471  | 7734 | 3.8884042  | 7767 | 3.8902533  |
| 7702 | 3.8866035  | 7735 | 3.8884603  | 7768 | 3.8903092  |
| 7703 | 3.8866599  | 7736 | 3.8885165  | 7769 | 3.8903651  |
| 7704 | 3.8867163  | 7737 | 3.8885726  | 7770 | 3.8904210  |
| 7795 | 3.8867726  | 7738 | 3.8886287  | 7771 | 3.8904769  |
| 7706 | 3.8868290  | 7739 | 3.8886848  | 7772 | 3.8905328  |
| 7707 | 3.8868854  | 7740 | 3.8887410  | 7773 | 3.8905887  |
| 7708 | 3.8869417  | 7741 | 3.8887971  | 7774 | 3.8906445  |
| 7709 | 3.8869980  | 7742 | 3.8888532  | 7775 | 3.8907004  |
| 7710 | 3.8870544  | 7743 | 3.8889093  | 7776 | 3.8907563  |
| 7711 | 3.8871107  | 7744 | 3.8889653  | 7777 | 3.8908121  |
| 7712 | 3.8871670  | 7745 | 3.8890214  | 7778 | 3.8908679  |
| 7713 | 3.8872233  | 7746 | 3.8890775  | 7779 | 3.8909238  |
| 7714 | 3.8872796  | 7747 | 3.8891336  | 7780 | 3.8909796  |
| 7715 | 3.8873359  | 7748 | 3.8891896  | 7781 | 3.8910354  |
| 7716 | 3.8873922  | 7749 | 3.8892457  | 7782 | 3.8910912  |
| 7717 | 3.8874485  | 7750 | 3.8893017  | 7783 | 3.8911470  |
| 7718 | 3.8875048  | 7751 | 3.8893577  | 7784 | 3.8912028  |
| 7719 | 3.8875610  | 7752 | 3.8894138  | 7785 | 3.8912586  |
| 7720 | 3.8876173  | 7753 | 3.8894698  | 7786 | 3.8913144  |
| 7721 | 3.8876736  | 7754 | 3.8895258  | 7787 | 3.8913702  |
| 7722 | 3.8877298  | 7755 | 3.8895818  | 7788 | 3.8914259  |
| 7723 | 3.8877860  | 7756 | 3.8896378  | 7789 | 3.8914817  |
| 7724 | 3.8878423  | 7757 | 3.8896938  | 7790 | 3.8915375  |
| 7725 | 3.8878985  | 7758 | 3.8897498  | 7791 | 3.8915932  |
| 7726 | 3.8879547  | 7759 | 3.8898058  | 7792 | 3.8916489  |
| 7727 | 3.8880109  | 7760 | 3.8898617  | 7793 | 3.8917047  |
| 7728 | 3.8880671  | 7761 | 3.8899177  | 7794 | 3.8917604  |
| 7729 | 3.8881233  | 7762 | 3.8899736  | 7795 | 3.8918161  |
| 7730 | 3.8881795  | 7763 | 3.8900296  | 7796 | 3.8918718  |
| 7731 | 3.8882357  | 7764 | 3.8900855  | 7797 | 3.8919275  |
| 7732 | 3.8882918  | 7765 | 3.8901415  | 7798 | 3.8919832  |
| 7733 | 3.8883480  | 7766 | 3.8901974  | 7799 | 3.8920389  |
| 7734 | 3.8884042  | 7767 | 3.8902533  | 7800 | 3.8920946  |

7800

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 7801 | 3.8921503  | 7834 | 3.8939836  | 7867 | 3.8958091  |
| 7802 | 3.8922059  | 7835 | 3.8940390  | 7868 | 3.8958643  |
| 7803 | 3.8922616  | 7836 | 3.8940944  | 7869 | 3.8959195  |
| 7804 | 3.8923173  | 7837 | 3.8941498  | 7870 | 3.8959747  |
| 7805 | 3.8923729  | 7838 | 3.8942053  | 7871 | 3.8960299  |
| 7806 | 3.8924285  | 7839 | 3.8942607  | 7872 | 3.8960851  |
| 7807 | 3.8924842  | 7840 | 3.8943161  | 7873 | 3.8961403  |
| 7808 | 3.8925398  | 7841 | 3.8943715  | 7874 | 3.8961954  |
| 7809 | 3.8925954  | 7842 | 3.8944268  | 7875 | 3.8962506  |
| 7810 | 3.8926510  | 7843 | 3.8944822  | 7876 | 3.8963057  |
| 7811 | 3.8927066  | 7844 | 3.8945376  | 7877 | 3.8963608  |
| 7812 | 3.8927622  | 7845 | 3.8945929  | 7878 | 3.8964160  |
| 7813 | 3.8928178  | 7846 | 3.8946483  | 7879 | 3.8964711  |
| 7814 | 3.8928734  | 7847 | 3.8947037  | 7880 | 3.8965262  |
| 7815 | 3.8929290  | 7848 | 3.8947590  | 7881 | 3.8965813  |
| 7816 | 3.8929846  | 7849 | 3.8948143  | 7882 | 3.8966364  |
| 7817 | 3.8930401  | 7850 | 3.8948697  | 7883 | 3.8966915  |
| 7818 | 3.8930957  | 7851 | 3.8949250  | 7884 | 3.8967466  |
| 7819 | 3.8931512  | 7852 | 3.8949803  | 7885 | 3.8968017  |
| 7820 | 3.8932068  | 7853 | 3.8950356  | 7886 | 3.8968568  |
| 7821 | 3.8932623  | 7854 | 3.8950909  | 7887 | 3.8969118  |
| 7822 | 3.8933178  | 7855 | 3.8951462  | 7888 | 3.8969669  |
| 7823 | 3.8933733  | 7856 | 3.8952015  | 7889 | 3.8970220  |
| 7824 | 3.8934288  | 7857 | 3.8952568  | 7890 | 3.8970770  |
| 7825 | 3.8934843  | 7858 | 3.8953120  | 7891 | 3.8971320  |
| 7826 | 3.8935398  | 7859 | 3.8953673  | 7892 | 3.8971871  |
| 7827 | 3.8935953  | 7860 | 3.8954225  | 7893 | 3.8972421  |
| 7828 | 3.8936508  | 7861 | 3.8954778  | 7894 | 3.8972971  |
| 7829 | 3.8937063  | 7862 | 3.8955330  | 7895 | 3.8973521  |
| 7830 | 3.8937618  | 7863 | 3.8955883  | 7896 | 3.8974071  |
| 7831 | 3.8938172  | 7864 | 3.8956435  | 7897 | 3.8974621  |
| 7832 | 3.8938727  | 7865 | 3.8956987  | 7898 | 3.8975171  |
| 7833 | 3.8939281  | 7866 | 3.8957539  | 7899 | 3.8975721  |
| 7834 | 3.8939836  | 7867 | 3.8958091  | 7900 | 3.8976271  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 7901 | 3.8976821  | 7934 | 3.8994922  | 7967 | 3.9012948  |
| 7902 | 3.8977370  | 7935 | 3.8995469  | 7968 | 3.9013493  |
| 7903 | 3.8977920  | 7936 | 3.8996017  | 7969 | 3.9014038  |
| 7904 | 3.8978469  | 7937 | 3.8996564  | 7970 | 3.9014583  |
| 7905 | 3.8979019  | 7938 | 3.8997111  | 7971 | 3.9015128  |
| 7906 | 3.8979568  | 7939 | 3.8997658  | 7972 | 3.9015673  |
| 7907 | 3.8980117  | 7940 | 3.8998205  | 7973 | 3.9016218  |
| 7908 | 3.8980667  | 7941 | 3.8998752  | 7974 | 3.9016762  |
| 7909 | 3.8981216  | 7942 | 3.8999299  | 7975 | 3.9017307  |
| 7910 | 3.8981765  | 7943 | 3.8999846  | 7976 | 3.9017851  |
| 7911 | 3.8982314  | 7944 | 3.9000392  | 7977 | 3.9018396  |
| 7912 | 3.8982863  | 7945 | 3.9000939  | 7978 | 3.9018940  |
| 7913 | 3.8983412  | 7946 | 3.9001486  | 7979 | 3.9019485  |
| 7914 | 3.8983960  | 7947 | 3.9002032  | 7980 | 3.9020029  |
| 7915 | 3.8984509  | 7948 | 3.9002579  | 7981 | 3.9020573  |
| 7916 | 3.8985058  | 7949 | 3.9003125  | 7982 | 3.9021117  |
| 7917 | 3.8985606  | 7950 | 3.9003671  | 7983 | 3.9021661  |
| 7918 | 3.8986155  | 7951 | 3.9004218  | 7984 | 3.9022205  |
| 7919 | 3.8986703  | 7952 | 3.9004764  | 7985 | 3.9022749  |
| 7920 | 3.8987252  | 7953 | 3.9005310  | 7986 | 3.9023293  |
| 7921 | 3.8987800  | 7954 | 3.9005856  | 7987 | 3.9023837  |
| 7922 | 3.8988348  | 7955 | 3.9006402  | 7988 | 3.9024381  |
| 7923 | 3.8988897  | 7956 | 3.9006948  | 7989 | 3.9024924  |
| 7924 | 3.8989445  | 7957 | 3.9007494  | 7990 | 3.9025468  |
| 7925 | 3.8989993  | 7958 | 3.9008039  | 7991 | 3.9026011  |
| 7926 | 3.8990541  | 7959 | 3.9008585  | 7992 | 3.9026555  |
| 7927 | 3.8991089  | 7960 | 3.9009131  | 7993 | 3.9027098  |
| 7928 | 3.8991636  | 7961 | 3.9009676  | 7994 | 3.9027641  |
| 7929 | 3.8992184  | 7962 | 3.9010222  | 7995 | 3.9028185  |
| 7930 | 3.8992732  | 7963 | 3.9010767  | 7996 | 3.9028728  |
| 7931 | 3.8993279  | 7964 | 3.9011313  | 7997 | 3.9029271  |
| 7932 | 3.8993827  | 7965 | 3.9011858  | 7998 | 3.9029814  |
| 7933 | 3.8994375  | 7966 | 3.9012403  | 7999 | 3.9030357  |
| 7934 | 3.8994922  | 7967 | 3.9012948  | 8000 | 3.9030900  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 8001 | 3.9031443 | 8034 | 3.9049318 | 8067 | 3.9067121 |
| 8002 | 3.9031985 | 8035 | 3.9049859 | 8068 | 3.9067659 |
| 8003 | 3.9032528 | 8036 | 3.9050399 | 8069 | 3.9068197 |
| 8004 | 3.9033071 | 8037 | 3.9050940 | 8070 | 3.9068735 |
| 8005 | 3.9033613 | 8038 | 3.9051480 | 8071 | 3.9069273 |
| 8006 | 3.9034156 | 8039 | 3.9052020 | 8072 | 3.9069812 |
| 8007 | 3.9034698 | 8040 | 3.9052560 | 8073 | 3.9070350 |
| 8008 | 3.9035241 | 8041 | 3.9053101 | 8074 | 3.9070887 |
| 8009 | 3.9035783 | 8042 | 3.9053641 | 8075 | 3.9071425 |
| 8010 | 3.9036325 | 8043 | 3.9054181 | 8076 | 3.9071963 |
| 8011 | 3.9036867 | 8044 | 3.9054721 | 8077 | 3.9072501 |
| 8012 | 3.9037409 | 8045 | 3.9055260 | 8078 | 3.9073038 |
| 8013 | 3.9037951 | 8046 | 3.9055800 | 8079 | 3.9073576 |
| 8014 | 3.9038493 | 8047 | 3.9056340 | 8080 | 3.9074114 |
| 8015 | 3.9039035 | 8048 | 3.9056880 | 8081 | 3.9074651 |
| 8016 | 3.9039577 | 8049 | 3.9057419 | 8082 | 3.9075188 |
| 8017 | 3.9040119 | 8050 | 3.9057959 | 8083 | 3.9075726 |
| 8018 | 3.9040661 | 8051 | 3.9058498 | 8084 | 3.9076263 |
| 8019 | 3.9041202 | 8052 | 3.9059038 | 8085 | 3.9076800 |
| 8020 | 3.9041744 | 8053 | 3.9059577 | 8086 | 3.9077337 |
| 8021 | 3.9042285 | 8054 | 3.9060116 | 8087 | 3.9077874 |
| 8022 | 3.9042827 | 8055 | 3.9060655 | 8088 | 3.9078411 |
| 8023 | 3.9043368 | 8056 | 3.9061195 | 8089 | 3.9078948 |
| 8024 | 3.9043909 | 8057 | 3.9061734 | 8090 | 3.9079485 |
| 8025 | 3.9044450 | 8058 | 3.9062273 | 8091 | 3.9080022 |
| 8026 | 3.9044992 | 8059 | 3.9062812 | 8092 | 3.9080559 |
| 8027 | 3.9045533 | 8060 | 3.9063350 | 8093 | 3.9081095 |
| 8028 | 3.9046074 | 8061 | 3.9063889 | 8094 | 3.9081632 |
| 8029 | 3.9046615 | 8062 | 3.9064428 | 8095 | 3.9082169 |
| 8030 | 3.9047155 | 8063 | 3.9064967 | 8096 | 3.9082705 |
| 8031 | 3.9047696 | 8064 | 3.9065505 | 8097 | 3.9083241 |
| 8032 | 3.9048237 | 8065 | 3.9066044 | 8098 | 3.9083778 |
| 8033 | 3.9048778 | 8066 | 3.9066582 | 8099 | 3.9084314 |
| 8034 | 3.9049318 | 8067 | 3.9067121 | 8100 | 3.9084850 |



| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 8101 | 3.9085386 | 8134 | 3.9103042 | 8167 | 3.9120626 |
| 8102 | 3.9085922 | 8135 | 3.9103576 | 8168 | 3.9121157 |
| 8103 | 3.9086458 | 8136 | 3.9104109 | 8169 | 3.9121689 |
| 8104 | 3.9086994 | 8137 | 3.9104643 | 8170 | 3.9122221 |
| 8105 | 3.9087530 | 8138 | 3.9105177 | 8171 | 3.9122752 |
| 8106 | 3.9088066 | 8139 | 3.9105710 | 8172 | 3.9123284 |
| 8107 | 3.9088602 | 8140 | 3.9106244 | 8173 | 3.9123815 |
| 8108 | 3.9089137 | 8141 | 3.9106778 | 8174 | 3.9124346 |
| 8109 | 3.9089673 | 8142 | 3.9107311 | 8175 | 3.9124878 |
| 8110 | 3.9090209 | 8143 | 3.9107844 | 8176 | 3.9125409 |
| 8111 | 3.9090744 | 8144 | 3.9108378 | 8177 | 3.9125940 |
| 8112 | 3.9091279 | 8145 | 3.9108911 | 8178 | 3.9126471 |
| 8113 | 3.9091815 | 8146 | 3.9109444 | 8179 | 3.9127002 |
| 8114 | 3.9092350 | 8147 | 3.9109977 | 8180 | 3.9127533 |
| 8115 | 3.9092885 | 8148 | 3.9110510 | 8181 | 3.9128064 |
| 8116 | 3.9093420 | 8149 | 3.9111043 | 8182 | 3.9128595 |
| 8117 | 3.9093955 | 8150 | 3.9111576 | 8183 | 3.9129126 |
| 8118 | 3.9094490 | 8151 | 3.9112109 | 8184 | 3.9129656 |
| 8119 | 3.9095025 | 8152 | 3.9112642 | 8185 | 3.9130187 |
| 8120 | 3.9095560 | 8153 | 3.9113174 | 8186 | 3.9130717 |
| 8121 | 3.9096095 | 8154 | 3.9113707 | 8187 | 3.9131248 |
| 8122 | 3.9096630 | 8155 | 3.9114240 | 8188 | 3.9131778 |
| 8123 | 3.9097165 | 8156 | 3.9114772 | 8189 | 3.9132309 |
| 8124 | 3.9097699 | 8157 | 3.9115305 | 8190 | 3.9132839 |
| 8125 | 3.9098234 | 8158 | 3.9115837 | 8191 | 3.9133369 |
| 8126 | 3.9098768 | 8159 | 3.9116369 | 8192 | 3.9133899 |
| 8127 | 3.9099303 | 8160 | 3.9116902 | 8193 | 3.9134430 |
| 8128 | 3.9099837 | 8161 | 3.9117434 | 8194 | 3.9134960 |
| 8129 | 3.9100371 | 8162 | 3.9117966 | 8195 | 3.9135490 |
| 8130 | 3.9100905 | 8163 | 3.9118498 | 8196 | 3.9136019 |
| 8131 | 3.9101440 | 8164 | 3.9119030 | 8197 | 3.9136549 |
| 8132 | 3.9101974 | 8165 | 3.9119562 | 8198 | 3.9137079 |
| 8133 | 3.9102508 | 8166 | 3.9120094 | 8199 | 3.9137609 |
| 8134 | 3.9103042 | 8167 | 3.9120626 | 8200 | 3.9138139 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 8201 | 3.9138668  | 8234 | 3.9156109  | 8267 | 3.9173479  |
| 8202 | 3.9139198  | 8235 | 3.9156636  | 8268 | 3.9174005  |
| 8203 | 3.4139727  | 8236 | 3.9157163  | 8269 | 3.9174530  |
| 8204 | 3.9140257  | 8237 | 3.9157691  | 8270 | 3.9175055  |
| 8205 | 3.9140786  | 8238 | 3.9158218  | 8271 | 3.9175580  |
| 8206 | 3.9141315  | 8239 | 3.9158745  | 8271 | 3.9176105  |
| 8207 | 3.9141844  | 8240 | 3.9159272  | 8273 | 3.9176630  |
| 8208 | 3.9142378  | 8241 | 3.9159799  | 8274 | 3.9177155  |
| 8209 | 3.9142903  | 8242 | 3.9160326  | 8275 | 3.9177680  |
| 8210 | 3.9143432  | 8243 | 3.9160853  | 8276 | 3.9178205  |
| 8211 | 3.9143961  | 8244 | 3.9161380  | 8277 | 3.9178730  |
| 8212 | 3.9144489  | 8245 | 3.9161907  | 8278 | 3.9179254  |
| 8213 | 3.9145018  | 8246 | 3.9162433  | 8279 | 3.9179779  |
| 8214 | 3.9145547  | 8247 | 3.9162960  | 8280 | 3.9180303  |
| 8215 | 3.9146076  | 8248 | 3.9163487  | 8281 | 3.9180828  |
| 8216 | 3.9146604  | 8249 | 3.9164013  | 8282 | 3.9181352  |
| 8217 | 3.9147133  | 8250 | 3.9164539  | 8283 | 3.9181877  |
| 8218 | 3.9147661  | 8251 | 3.9165066  | 8284 | 3.9182401  |
| 8219 | 3.9148190  | 8252 | 3.9165592  | 8285 | 3.9182925  |
| 8220 | 3.9148718  | 8253 | 3.9166118  | 8286 | 3.9183449  |
| 8221 | 3.9149246  | 8254 | 3.9166645  | 8287 | 3.9183973  |
| 8222 | 3.9149775  | 8255 | 3.9167171  | 8288 | 3.9184497  |
| 8223 | 3.9150303  | 8256 | 3.9167697  | 8289 | 3.9185021  |
| 8224 | 3.9150831  | 8257 | 3.9168223  | 8290 | 3.9185545  |
| 8225 | 3.9151359  | 8258 | 3.9168749  | 8291 | 3.9186069  |
| 8226 | 3.9151887  | 8259 | 3.9169275  | 8292 | 3.9186593  |
| 8227 | 3.9152415  | 8260 | 3.9169800  | 8293 | 3.9187117  |
| 8228 | 3.9152943  | 8261 | 3.9170326  | 8294 | 3.9187640  |
| 8229 | 3.9153471  | 8262 | 3.9170852  | 8295 | 3.9188164  |
| 8230 | 3.9153998  | 8263 | 3.9171378  | 8296 | 3.9188687  |
| 8231 | 3.9154526  | 8264 | 3.9171903  | 8297 | 3.9189211  |
| 8232 | 3.9155054  | 8265 | 3.9172429  | 8298 | 3.9189734  |
| 8233 | 3.9155581  | 8266 | 3.9172954  | 8299 | 3.9190258  |
| 8234 | 3.9156109  | 8267 | 3.9173479  | 8300 | 3.9190781  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 8301 | 3.9191304  | 8334 | 3.9208535  | 8367 | 3.9225698  |
| 8302 | 3.9191827  | 8335 | 3.9209056  | 8368 | 3.9226217  |
| 8303 | 3.9192350  | 8336 | 3.9209577  | 8369 | 3.9226736  |
| 8304 | 3.9192873  | 8337 | 3.9210098  | 8370 | 3.9227255  |
| 8305 | 3.9193396  | 8338 | 3.9210619  | 8371 | 3.9227773  |
| 8306 | 3.9193919  | 8339 | 3.9211140  | 8372 | 3.9228292  |
| 8307 | 3.9194442  | 8340 | 3.9211661  | 8373 | 3.9228811  |
| 8308 | 3.9194965  | 8341 | 3.9212181  | 8374 | 3.9229339  |
| 8309 | 3.9195488  | 8342 | 3.9212702  | 8375 | 3.9229848  |
| 8310 | 3.9196010  | 8343 | 3.9213222  | 8376 | 3.9230367  |
| 8311 | 3.9196533  | 8344 | 3.9213743  | 8377 | 3.9230885  |
| 8312 | 3.9197055  | 8345 | 3.9214263  | 8378 | 3.9231404  |
| 8313 | 3.9197578  | 8346 | 3.9214784  | 8379 | 3.9231922  |
| 8314 | 3.9198100  | 8347 | 3.9215304  | 8380 | 3.9232440  |
| 8315 | 3.9198623  | 8348 | 3.9215824  | 8381 | 3.9232958  |
| 8316 | 3.9199145  | 8349 | 3.9216345  | 8382 | 3.9233477  |
| 8317 | 3.9199667  | 8350 | 3.9216865  | 8383 | 3.9233995  |
| 8318 | 3.9200189  | 8351 | 3.9217385  | 8384 | 3.9234513  |
| 8319 | 3.9200711  | 8352 | 3.9217905  | 8385 | 3.9235031  |
| 8320 | 3.9201233  | 8353 | 3.9218425  | 8386 | 3.9235549  |
| 8321 | 3.9201755  | 8354 | 3.9218945  | 8387 | 3.9236066  |
| 8322 | 3.9202277  | 8355 | 3.9219465  | 8388 | 3.9236584  |
| 8323 | 3.9202799  | 8356 | 3.9219984  | 8389 | 3.9237102  |
| 8324 | 3.9203321  | 8357 | 3.9220504  | 8390 | 3.9237620  |
| 8325 | 3.9203842  | 8358 | 3.9221024  | 8391 | 3.9238137  |
| 8326 | 3.9204364  | 8359 | 3.9221543  | 8392 | 3.9238655  |
| 8327 | 3.9204886  | 8360 | 3.9222063  | 8393 | 3.9239172  |
| 8328 | 3.9205407  | 8361 | 3.9222582  | 8394 | 3.9239690  |
| 8329 | 3.9205929  | 8362 | 3.9223102  | 8395 | 3.9240207  |
| 8330 | 3.9206450  | 8363 | 3.9223621  | 8396 | 3.9240724  |
| 8331 | 3.9206971  | 8364 | 3.9224140  | 8397 | 3.9241242  |
| 8332 | 3.9207493  | 8365 | 3.9224659  | 8398 | 3.9241759  |
| 8333 | 3.9208014  | 8366 | 3.9225179  | 8399 | 3.9242276  |
| 8334 | 3.9208535  | 8367 | 3.9225698  | 8400 | 3.9242793  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 8401 | 3.9243310  | 8434 | 3.9260336  | 8467 | 3.9277296  |
| 8402 | 3.9243827  | 8435 | 3.9260851  | 8468 | 3.9277808  |
| 8403 | 3.9244344  | 8436 | 3.9261366  | 8469 | 3.9278321  |
| 8404 | 3.9244860  | 8437 | 3.9261880  | 8470 | 3.9278834  |
| 8405 | 3.9245377  | 8438 | 3.9262395  | 8471 | 3.9279347  |
| 8406 | 3.9245894  | 8439 | 3.9262910  | 8472 | 3.9279859  |
| 8407 | 3.9246410  | 8440 | 3.9263424  | 8473 | 3.9280372  |
| 8408 | 3.9246927  | 8441 | 3.9263939  | 8474 | 3.9280885  |
| 8409 | 3.9247444  | 8442 | 3.9264453  | 8475 | 3.9281397  |
| 8410 | 3.9247960  | 8443 | 3.9264968  | 8476 | 3.9281909  |
| 8411 | 3.9248476  | 8444 | 3.9265482  | 8477 | 3.9282422  |
| 8412 | 3.9248993  | 8445 | 3.9265997  | 8478 | 3.9282934  |
| 8413 | 3.9249509  | 8446 | 3.9266511  | 8479 | 3.9283446  |
| 8414 | 3.9250025  | 8447 | 3.9267025  | 8480 | 3.9283959  |
| 8415 | 3.9250541  | 8448 | 3.9267539  | 8481 | 3.9284471  |
| 8416 | 3.9251057  | 8449 | 3.9268053  | 8482 | 3.9284983  |
| 8417 | 3.9251573  | 8450 | 3.9268567  | 8483 | 3.9285495  |
| 8418 | 3.9252089  | 8451 | 3.9269081  | 8484 | 3.9286007  |
| 8419 | 3.9252605  | 8452 | 3.9269595  | 8485 | 3.9286518  |
| 8420 | 3.9253121  | 8453 | 3.9270109  | 8486 | 3.9287030  |
| 8421 | 3.9253637  | 8454 | 3.9270622  | 8487 | 3.9287542  |
| 8422 | 3.9254152  | 8455 | 3.9271136  | 8488 | 3.9288054  |
| 8423 | 3.9254668  | 8456 | 3.9271650  | 8489 | 3.9288565  |
| 8424 | 3.9255184  | 8457 | 3.9272163  | 8490 | 3.9289077  |
| 8425 | 3.9255699  | 8458 | 3.9272677  | 8491 | 3.9289588  |
| 8426 | 3.9256215  | 8459 | 3.9273190  | 8492 | 3.9290100  |
| 8427 | 3.9256730  | 8460 | 3.9273704  | 8493 | 3.9290611  |
| 8428 | 3.9257245  | 8461 | 3.9274217  | 8494 | 3.9291123  |
| 8429 | 3.9257761  | 8462 | 3.9274730  | 8495 | 3.9291634  |
| 8430 | 3.9258276  | 8463 | 3.9275243  | 8496 | 3.9292145  |
| 8431 | 3.9258791  | 8464 | 3.9275757  | 8497 | 3.9292656  |
| 8432 | 3.9259306  | 8465 | 3.9276270  | 8498 | 3.9293167  |
| 8433 | 3.9259821  | 8466 | 3.9276783  | 8499 | 3.9293678  |
| 8434 | 3.9260336  | 8467 | 3.9277296  | 8500 | 3.9294189  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 8501 | 3.9294700  | 8534 | 3.9311526  | 8567 | 3.9328288  |
| 8502 | 3.9295211  | 8535 | 3.9312035  | 8568 | 3.9328795  |
| 8503 | 3.9295722  | 8536 | 3.9312544  | 8569 | 3.9329301  |
| 8504 | 3.9296233  | 8537 | 3.9313053  | 8570 | 3.9329808  |
| 8505 | 3.9296743  | 8538 | 3.9313561  | 8571 | 3.9330315  |
| 8506 | 3.9297254  | 8539 | 3.9314070  | 8572 | 3.9330822  |
| 8507 | 3.9297764  | 8540 | 3.9314579  | 8573 | 3.9331328  |
| 8508 | 3.9298275  | 8541 | 3.9315087  | 8574 | 3.9331835  |
| 8509 | 3.9298785  | 8542 | 3.9315596  | 8575 | 3.9332341  |
| 8510 | 3.9299296  | 8543 | 3.9316104  | 8576 | 3.9332848  |
| 8511 | 3.9299806  | 8544 | 3.9316612  | 8577 | 3.9333354  |
| 8512 | 3.9300316  | 8545 | 3.9317121  | 8578 | 3.9333860  |
| 8513 | 3.9300826  | 8546 | 3.9317629  | 8579 | 3.9334367  |
| 8514 | 3.9301336  | 8547 | 3.9318137  | 8580 | 3.9334873  |
| 8515 | 3.9301847  | 8548 | 3.9318645  | 8581 | 3.9335379  |
| 8516 | 3.9302357  | 8549 | 3.9319153  | 8582 | 3.9335885  |
| 8517 | 3.9302866  | 8550 | 3.9319661  | 8583 | 3.9336391  |
| 8518 | 3.9303376  | 8551 | 3.9320169  | 8584 | 3.9336897  |
| 8519 | 3.9303886  | 8552 | 3.9320677  | 8585 | 3.9337403  |
| 8520 | 3.9304396  | 8553 | 3.9321185  | 8586 | 3.9337909  |
| 8521 | 3.9304906  | 8554 | 3.9321692  | 8587 | 3.9338415  |
| 8522 | 3.9305415  | 8555 | 3.9322200  | 8588 | 3.9338920  |
| 8523 | 3.9305925  | 8556 | 3.9322708  | 8589 | 3.9339426  |
| 8524 | 3.9306434  | 8557 | 3.9323215  | 8590 | 3.9339932  |
| 8525 | 3.9306944  | 8558 | 3.9323723  | 8591 | 3.9340437  |
| 8526 | 3.9307453  | 8559 | 3.9324230  | 8592 | 3.9340943  |
| 8527 | 3.9307963  | 8560 | 3.9324738  | 8593 | 3.9341448  |
| 8528 | 3.9308472  | 8561 | 3.9325245  | 8594 | 3.9341953  |
| 8529 | 3.9308981  | 8562 | 3.9325752  | 8595 | 3.9342459  |
| 8530 | 3.9309490  | 8563 | 3.9326259  | 8596 | 3.9342964  |
| 8531 | 3.9309999  | 8564 | 3.9326767  | 8597 | 3.9343469  |
| 8532 | 3.9310508  | 8565 | 3.9327274  | 8598 | 3.9343974  |
| 8533 | 3.9311017  | 8566 | 3.9327781  | 8599 | 3.9344479  |
| 8534 | 3.9311526  | 8567 | 3.9328288  | 8600 | 3.9344984  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 8601 | 3.9345489 | 8634 | 3.9362120 | 8667 | 3.9378688 |
| 8602 | 3.9345994 | 8635 | 3.9362623 | 8668 | 3.9379189 |
| 8603 | 3.9346499 | 8636 | 3.9363126 | 8669 | 3.9379690 |
| 8604 | 3.9347004 | 8637 | 3.9363629 | 8670 | 3.9380191 |
| 8605 | 3.9347509 | 8638 | 3.9364132 | 8671 | 3.9380692 |
| 8606 | 3.9348013 | 8639 | 3.9364635 | 8672 | 3.9381193 |
| 8607 | 3.9348518 | 8640 | 3.9365137 | 8673 | 3.9381693 |
| 8608 | 3.9349023 | 8641 | 3.9365640 | 8674 | 3.9382194 |
| 8609 | 3.9349527 | 8642 | 3.9366143 | 8675 | 3.9382695 |
| 8610 | 3.9350032 | 8643 | 3.9366645 | 8676 | 3.9383195 |
| 8611 | 3.9350536 | 8644 | 3.9367148 | 8677 | 3.9383696 |
| 8612 | 3.9351040 | 8645 | 3.9367650 | 8678 | 3.9384196 |
| 8613 | 3.9351544 | 8646 | 3.9368152 | 8679 | 3.9384697 |
| 8614 | 3.9352040 | 8647 | 3.9368655 | 8680 | 3.9385197 |
| 8615 | 3.9352553 | 8648 | 3.9369157 | 8681 | 3.9385698 |
| 8616 | 3.9353057 | 8649 | 3.9369659 | 8682 | 3.9386198 |
| 8617 | 3.9353561 | 8650 | 3.9370161 | 8683 | 3.9386698 |
| 8618 | 3.9354065 | 8651 | 3.9370663 | 8684 | 3.9387198 |
| 8619 | 3.9354569 | 8652 | 3.9371165 | 8685 | 3.9387698 |
| 8620 | 3.9355073 | 8653 | 3.9371667 | 8686 | 3.9388198 |
| 8621 | 3.9355576 | 8654 | 3.9372169 | 8687 | 3.9388698 |
| 8622 | 3.9356080 | 8655 | 3.9372671 | 8688 | 3.9389198 |
| 8623 | 3.9356584 | 8656 | 3.9373172 | 8689 | 3.9389698 |
| 8624 | 3.9357087 | 8657 | 3.9373674 | 8690 | 3.9390198 |
| 8625 | 3.9357591 | 8658 | 3.9374176 | 8691 | 3.9390697 |
| 8626 | 3.9358095 | 8659 | 3.9374677 | 8692 | 3.9391197 |
| 8627 | 3.9358598 | 8660 | 3.9375179 | 8693 | 3.9391697 |
| 8628 | 3.9359101 | 8661 | 3.9375680 | 8694 | 3.9392196 |
| 8629 | 3.9359605 | 8662 | 3.9376182 | 8695 | 3.9392696 |
| 8630 | 3.9360108 | 8663 | 3.9376683 | 8696 | 3.9393195 |
| 8631 | 3.9360611 | 8664 | 3.9377184 | 8697 | 3.9393695 |
| 8632 | 3.9361114 | 8665 | 3.9377686 | 8698 | 3.9394194 |
| 8633 | 3.9361617 | 8666 | 3.9378187 | 8699 | 3.9394693 |
| 8634 | 3.9362120 | 8667 | 3.9378688 | 8700 | 3.9395193 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 8701 | 3.9395692  | 8734 | 3.9412132  | 8767 | 3.9428510  |
| 8702 | 3.9396191  | 8735 | 3.9412629  | 8768 | 3.9429005  |
| 8703 | 3.9396690  | 8736 | 3.9413126  | 8769 | 3.9429501  |
| 8704 | 3.9397189  | 8737 | 3.9413623  | 8770 | 3.9429996  |
| 8705 | 3.9397688  | 8738 | 3.9414120  | 8771 | 3.9430491  |
| 8706 | 3.9398187  | 8739 | 3.9414617  | 8772 | 3.9430986  |
| 8707 | 3.9398685  | 8740 | 3.9415114  | 8773 | 3.9431481  |
| 8708 | 3.9399184  | 8741 | 3.9415611  | 8774 | 3.9431976  |
| 8709 | 3.9399683  | 8742 | 3.9416108  | 8775 | 3.9432471  |
| 8710 | 3.9400184  | 8743 | 3.9416605  | 8776 | 3.9432966  |
| 8711 | 3.9400680  | 8744 | 3.9417101  | 8777 | 3.9433461  |
| 8712 | 3.9401179  | 8745 | 3.9417598  | 8778 | 3.9433956  |
| 8713 | 3.9401677  | 8746 | 3.9418095  | 8779 | 3.9434450  |
| 8714 | 3.9402176  | 8747 | 3.9418591  | 8780 | 3.9434945  |
| 8715 | 3.9402674  | 8748 | 3.9419088  | 8781 | 3.9435440  |
| 8716 | 3.9403172  | 8749 | 3.9419584  | 8782 | 3.9435934  |
| 8717 | 3.9403670  | 8750 | 3.9420081  | 8783 | 3.9436429  |
| 8718 | 3.9404169  | 8751 | 3.9420577  | 8784 | 3.9436923  |
| 8719 | 3.9404667  | 8752 | 3.9421073  | 8785 | 3.9437418  |
| 8720 | 3.9405165  | 8753 | 3.9421569  | 8786 | 3.9437912  |
| 8721 | 3.9405663  | 8754 | 3.9422065  | 8787 | 3.9438406  |
| 8722 | 3.9406161  | 8755 | 3.9422561  | 8788 | 3.9438900  |
| 8723 | 3.9406659  | 8756 | 3.9423058  | 8789 | 3.9439395  |
| 8724 | 3.9407157  | 8757 | 3.9423553  | 8790 | 3.9439889  |
| 8725 | 3.9407654  | 8758 | 3.9424049  | 8791 | 3.9440383  |
| 8726 | 3.9408152  | 8759 | 3.9424545  | 8792 | 3.9440877  |
| 8727 | 3.9408650  | 8760 | 3.9425041  | 8793 | 3.9441371  |
| 8728 | 3.9409147  | 8761 | 3.9425537  | 8794 | 3.9441865  |
| 8729 | 3.9409645  | 8762 | 3.9426032  | 8795 | 3.9442358  |
| 8730 | 3.9410142  | 8763 | 3.9426528  | 8796 | 3.9442852  |
| 8731 | 3.9410640  | 8764 | 3.9427024  | 8797 | 3.9443346  |
| 8732 | 3.9411137  | 8765 | 3.9427519  | 8798 | 3.9443840  |
| 8734 | 3.9411635  | 8766 | 3.9428015  | 8799 | 3.9444333  |
| 8735 | 3.9412132  | 8767 | 3.9428510  | 8800 | 3.9444827  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 8801 | 3.9445320  | 8834 | 3.9461574  | 8867 | 3.9477767  |
| 8802 | 3.9445814  | 8835 | 3.9462066  | 8868 | 3.9478257  |
| 8803 | 3.9446307  | 8836 | 3.9462557  | 8869 | 3.9478747  |
| 8804 | 3.9446800  | 8837 | 3.9463048  | 8870 | 3.9479236  |
| 8805 | 3.9447294  | 8838 | 3.9463540  | 8871 | 3.9479726  |
| 8806 | 3.9447787  | 8839 | 3.9464031  | 8872 | 3.9480215  |
| 8807 | 3.9448280  | 8840 | 3.9464523  | 8873 | 3.9480705  |
| 8808 | 3.9448773  | 8841 | 3.9465014  | 8874 | 3.9481194  |
| 8809 | 3.9449266  | 8842 | 3.9465505  | 8875 | 3.9481684  |
| 8810 | 3.9449759  | 8843 | 3.9465996  | 8876 | 3.9482173  |
| 8811 | 3.9450252  | 8844 | 3.9466487  | 8877 | 3.9482662  |
| 8812 | 3.9450745  | 8845 | 3.9466978  | 8878 | 3.9483151  |
| 8813 | 3.9451238  | 8846 | 3.9467469  | 8879 | 3.9483641  |
| 8814 | 3.9451730  | 8847 | 3.9467960  | 8880 | 3.9484130  |
| 8815 | 3.9452223  | 8848 | 3.9468451  | 8881 | 3.9484619  |
| 8816 | 3.9452716  | 8849 | 3.9468942  | 8882 | 3.9485108  |
| 8817 | 3.9453208  | 8850 | 3.9469433  | 8883 | 3.9485597  |
| 8818 | 3.9453701  | 8851 | 3.9469923  | 8884 | 3.9486085  |
| 8819 | 3.9454193  | 8852 | 3.9470414  | 8885 | 3.9486574  |
| 8820 | 3.9454686  | 8853 | 3.9470905  | 8886 | 3.9487063  |
| 8821 | 3.9455178  | 8854 | 3.9471395  | 8887 | 3.9487552  |
| 8822 | 3.9455671  | 8855 | 3.9471886  | 8888 | 3.9488040  |
| 8823 | 3.9456163  | 8856 | 3.9472376  | 8889 | 3.9488529  |
| 8824 | 3.9456655  | 8857 | 3.9472866  | 8890 | 3.9489018  |
| 8825 | 3.9457147  | 8858 | 3.9473357  | 8891 | 3.9489506  |
| 8826 | 3.9457639  | 8859 | 3.9473847  | 8892 | 3.9489995  |
| 8827 | 3.9458131  | 8860 | 3.9474337  | 8893 | 3.9490483  |
| 8828 | 3.9458623  | 8861 | 3.9474827  | 8894 | 3.9490971  |
| 8829 | 3.9459115  | 8862 | 3.9475317  | 8895 | 3.9491460  |
| 8830 | 3.9459607  | 8863 | 3.9475807  | 8896 | 3.9491948  |
| 8831 | 3.9460099  | 8864 | 3.9476297  | 8897 | 3.9492436  |
| 8832 | 3.9460591  | 8865 | 3.9476787  | 8898 | 3.9492924  |
| 8833 | 3.9461091  | 8866 | 3.9477277  | 8899 | 3.9493412  |
| 8834 | 3.9461574  | 8867 | 3.9477767  | 8900 | 3.9493900  |



| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 8901 | 3.9494388 | 8934 | 3.9510459 | 8967 | 3.9526472 |
| 8902 | 3.9494876 | 8935 | 3.9510946 | 8968 | 3.9526956 |
| 8903 | 3.9495364 | 8936 | 3.9511432 | 8969 | 3.9527440 |
| 8904 | 3.9495852 | 8937 | 3.9511918 | 8970 | 3.9527924 |
| 8905 | 3.9496339 | 8938 | 3.9512404 | 8971 | 3.9528409 |
| 8906 | 3.9496827 | 8939 | 3.9512889 | 8972 | 3.9528893 |
| 8907 | 3.9497315 | 8940 | 3.9513375 | 8973 | 3.9529377 |
| 8908 | 3.9497802 | 8941 | 3.9513861 | 8974 | 3.9529861 |
| 8909 | 3.9498290 | 8942 | 3.9514347 | 8975 | 3.9530345 |
| 8910 | 3.9498777 | 8943 | 3.9514832 | 8976 | 3.9530828 |
| 8911 | 3.9499264 | 8944 | 3.9515318 | 8977 | 3.9531312 |
| 8912 | 3.9499752 | 8945 | 3.9515803 | 8978 | 3.9531796 |
| 8913 | 3.9500239 | 8946 | 3.9516289 | 8979 | 3.9532280 |
| 8914 | 3.9500726 | 8947 | 3.9516774 | 8980 | 3.9532763 |
| 8915 | 3.9501213 | 8948 | 3.9517260 | 8981 | 3.9533247 |
| 8916 | 3.9501701 | 8949 | 3.9517745 | 8982 | 3.9533730 |
| 8917 | 3.9502188 | 8950 | 3.9518230 | 8983 | 3.9534213 |
| 8918 | 3.9502675 | 8951 | 3.9518716 | 8984 | 3.9534697 |
| 8919 | 3.9503162 | 8952 | 3.9519201 | 8985 | 3.9535181 |
| 8920 | 3.9503649 | 8953 | 3.9519686 | 8986 | 3.9535664 |
| 8921 | 3.9504135 | 8954 | 3.9520171 | 8987 | 3.9536147 |
| 8922 | 3.9504622 | 8955 | 3.9520656 | 8988 | 3.9536631 |
| 8923 | 3.9505109 | 8956 | 3.9521141 | 8989 | 3.9537114 |
| 8924 | 3.9505596 | 8957 | 3.9521626 | 8990 | 3.9537597 |
| 8925 | 3.9506082 | 8958 | 3.9522111 | 8991 | 3.9538080 |
| 8926 | 3.9506569 | 8959 | 3.9522595 | 8992 | 3.9538563 |
| 8927 | 3.9507055 | 8960 | 3.9523080 | 8993 | 3.9539046 |
| 8928 | 3.9507542 | 8961 | 3.9523565 | 8994 | 3.9539529 |
| 8929 | 3.9508028 | 8962 | 3.9524049 | 8995 | 3.9540012 |
| 8930 | 3.9508515 | 8963 | 3.9524534 | 8996 | 3.9540494 |
| 8931 | 3.9509001 | 8964 | 3.9525018 | 8997 | 3.9540977 |
| 8932 | 3.9509487 | 8965 | 3.9525503 | 8998 | 3.9541460 |
| 8933 | 3.9509973 | 8966 | 3.9525987 | 8999 | 3.9541943 |
| 8934 | 3.9510459 | 8967 | 3.9526472 | 9000 | 3.9542425 |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 9001 | 3.9542908  | 9034 | 3.9558801  | 9067 | 3.9574636  |
| 9002 | 3.9543390  | 9035 | 3.9559282  | 9068 | 3.9575115  |
| 9003 | 3.9543872  | 9036 | 3.9559762  | 9069 | 3.9575594  |
| 9004 | 3.9544355  | 9037 | 3.9560243  | 9070 | 3.9576073  |
| 9005 | 3.9544837  | 9038 | 3.9560723  | 9071 | 3.9576552  |
| 9006 | 3.9545319  | 9039 | 3.9561204  | 9072 | 3.9577030  |
| 9007 | 3.9545802  | 9040 | 3.9561684  | 9073 | 3.9577509  |
| 9008 | 3.9546284  | 9041 | 3.9562165  | 9074 | 3.9577988  |
| 9009 | 3.9546766  | 9042 | 3.9562645  | 9075 | 3.9578466  |
| 9010 | 3.9547248  | 9043 | 3.9563125  | 9076 | 3.9578945  |
| 9011 | 3.9547730  | 9044 | 3.9563606  | 9077 | 3.9579423  |
| 9012 | 3.9548212  | 9045 | 3.9564086  | 9078 | 3.9579902  |
| 9013 | 3.9548694  | 9046 | 3.9564566  | 9079 | 3.9580380  |
| 9014 | 3.9549176  | 9047 | 3.9565046  | 9080 | 3.9580858  |
| 9015 | 3.9549657  | 9048 | 3.9565526  | 9081 | 3.9581337  |
| 9016 | 3.9550139  | 9049 | 3.9566006  | 9082 | 3.9581815  |
| 9017 | 3.9550621  | 9050 | 3.9566486  | 9083 | 3.9582293  |
| 9018 | 3.9551102  | 9051 | 3.9566966  | 9084 | 3.9582771  |
| 9019 | 3.9551584  | 9052 | 3.9567445  | 9085 | 3.9583249  |
| 9020 | 3.9552065  | 9053 | 3.9567925  | 9086 | 3.9583727  |
| 9021 | 3.9552547  | 9054 | 3.9568405  | 9087 | 3.9584205  |
| 9022 | 3.9553028  | 9055 | 3.9568885  | 9088 | 3.9584683  |
| 9023 | 3.9553510  | 9056 | 3.9569364  | 9089 | 3.9585161  |
| 9024 | 3.9553991  | 9057 | 3.9569844  | 9090 | 3.9585639  |
| 9025 | 3.9554472  | 9058 | 3.9570323  | 9091 | 3.9586117  |
| 9026 | 3.9554953  | 9059 | 3.9570803  | 9092 | 3.9586594  |
| 9027 | 3.9555434  | 9060 | 3.9571282  | 9093 | 3.9587072  |
| 9028 | 3.9555915  | 9061 | 3.9571761  | 9094 | 3.9587549  |
| 9029 | 3.9556397  | 9062 | 3.9572241  | 9095 | 3.9588027  |
| 9030 | 3.9556877  | 9063 | 3.9572720  | 9096 | 3.9588505  |
| 9031 | 3.9557358  | 9064 | 3.9573199  | 9097 | 3.9588982  |
| 9032 | 3.9557839  | 9065 | 3.9573678  | 9098 | 3.9589459  |
| 9033 | 3.9558320  | 9066 | 3.9574157  | 9099 | 3.9589937  |
| 9034 | 3.9558801  | 9067 | 3.9574636  | 9100 | 3.9590414  |

| N.   | Logarithh. | N.   | Logarithh. | N.   | Logarithh. |
|------|------------|------|------------|------|------------|
| 9101 | 3.9590891  | 9134 | 3.9606610  | 9167 | 3.9622272  |
| 9102 | 3.9591368  | 9135 | 3.9607086  | 9168 | 3.9622746  |
| 9103 | 3.9591845  | 9136 | 3.9607561  | 9169 | 3.9623220  |
| 9104 | 3.9592322  | 9137 | 3.9608036  | 9170 | 3.9623693  |
| 9105 | 3.9592799  | 9138 | 3.9608512  | 9171 | 3.9624167  |
| 9106 | 3.9593276  | 9139 | 3.9608987  | 9172 | 3.9624640  |
| 9107 | 3.9593753  | 9140 | 3.9609462  | 9173 | 3.9625114  |
| 9108 | 3.9594230  | 9141 | 3.9609937  | 9174 | 3.9625587  |
| 9109 | 3.9594707  | 9142 | 3.9610412  | 9175 | 3.9626061  |
| 9110 | 3.9595184  | 9143 | 3.9610887  | 9176 | 3.9626534  |
| 9111 | 3.9595660  | 9144 | 3.9611362  | 9177 | 3.9627007  |
| 9112 | 3.9596137  | 9145 | 3.9611837  | 9178 | 3.9627481  |
| 9113 | 3.9596614  | 9146 | 3.9612312  | 9179 | 3.9627954  |
| 9114 | 3.9597090  | 9147 | 3.9612787  | 9180 | 3.9628427  |
| 9115 | 3.9597567  | 9148 | 3.9613262  | 9181 | 3.9628900  |
| 9116 | 3.9598043  | 9149 | 3.9613736  | 9182 | 3.9629373  |
| 9117 | 3.9598520  | 9150 | 3.9614211  | 9183 | 3.9629846  |
| 9118 | 3.9598996  | 9151 | 3.9614686  | 9184 | 3.9630319  |
| 9119 | 3.9599472  | 9152 | 3.9615160  | 9185 | 3.9630792  |
| 9120 | 3.9599948  | 9153 | 3.9615635  | 9186 | 3.9631264  |
| 9121 | 3.9600425  | 9154 | 3.9616109  | 9187 | 3.9631737  |
| 9122 | 3.9600901  | 9155 | 3.9616583  | 9188 | 3.9632210  |
| 9123 | 3.9601377  | 9156 | 3.9617058  | 9189 | 3.9632683  |
| 9124 | 3.9601853  | 9157 | 3.9617532  | 9190 | 3.9633155  |
| 9125 | 3.9602329  | 9158 | 3.9618006  | 9191 | 3.9633628  |
| 9126 | 3.9602805  | 9159 | 3.9618481  | 9192 | 3.9634100  |
| 9127 | 3.9603280  | 9160 | 3.9618955  | 9193 | 3.9634573  |
| 9128 | 3.9603756  | 9161 | 3.9619429  | 9194 | 3.9635045  |
| 9129 | 3.9604232  | 9162 | 3.9619903  | 9195 | 3.9635517  |
| 9130 | 3.9604708  | 9163 | 3.9620377  | 9196 | 3.9635990  |
| 9131 | 3.9605183  | 9164 | 3.9620851  | 9197 | 3.9636462  |
| 9132 | 3.9605659  | 9165 | 3.9621325  | 9198 | 3.9636934  |
| 9133 | 3.9606135  | 9166 | 3.9621799  | 9199 | 3.9637406  |
| 9134 | 3.9606610  | 9167 | 3.9622272  | 9200 | 3.9637878  |

| N.   | Logarithh. | N.   | Logarithh. | N.   | Logarithh. |
|------|------------|------|------------|------|------------|
| 9201 | 3.9638350  | 9234 | 3.9653899  | 9267 | 3.9669392  |
| 9202 | 3.9638822  | 9235 | 3.9654369  | 9268 | 3.9669860  |
| 9203 | 3.9639294  | 9236 | 3.9654839  | 9269 | 3.9670329  |
| 9204 | 3.9639766  | 9237 | 3.9655309  | 9270 | 3.9670797  |
| 9205 | 3.9640238  | 9238 | 3.9655780  | 9271 | 3.9671266  |
| 9206 | 3.9640710  | 9239 | 3.9656250  | 9272 | 3.9671734  |
| 9207 | 3.9641181  | 9240 | 3.9656720  | 9273 | 3.9672203  |
| 9208 | 3.9641653  | 9241 | 3.9657190  | 9274 | 3.9672671  |
| 9209 | 3.9642125  | 9242 | 3.9657660  | 9275 | 3.9673139  |
| 9210 | 3.9642596  | 9243 | 3.9658130  | 9276 | 3.9673607  |
| 9211 | 3.9643068  | 9244 | 3.9658599  | 9277 | 3.9674076  |
| 9212 | 3.9643539  | 9245 | 3.9659069  | 9278 | 3.9674544  |
| 9213 | 3.9644011  | 9246 | 3.9659539  | 9279 | 3.9675012  |
| 9214 | 3.9644482  | 9247 | 3.9660009  | 9280 | 3.9675480  |
| 9215 | 3.9644953  | 9248 | 3.9660478  | 9281 | 3.9675948  |
| 9216 | 3.9645425  | 9249 | 3.9660948  | 9282 | 3.9676416  |
| 9217 | 3.9645896  | 9250 | 3.9661417  | 9283 | 3.9676883  |
| 9218 | 3.9646367  | 9251 | 3.9661887  | 9284 | 3.9677351  |
| 9219 | 3.9646838  | 9252 | 3.9662356  | 9285 | 3.9677819  |
| 9220 | 3.9647309  | 9253 | 3.9662826  | 9286 | 3.9678287  |
| 9221 | 3.9647780  | 9254 | 3.9663295  | 9287 | 3.9678754  |
| 9222 | 3.9648251  | 9255 | 3.9663764  | 9288 | 3.9679222  |
| 9223 | 3.9648722  | 9256 | 3.9664233  | 9289 | 3.9679690  |
| 9224 | 3.9649193  | 9257 | 3.9664703  | 9290 | 3.9680157  |
| 9225 | 3.9649664  | 9258 | 3.9665172  | 9291 | 3.9680625  |
| 9226 | 3.9650134  | 9259 | 3.9665641  | 9292 | 3.9681092  |
| 9227 | 3.9650605  | 9260 | 3.9666110  | 9293 | 3.9681559  |
| 9228 | 3.9651076  | 9261 | 3.9666579  | 9294 | 3.9682027  |
| 9229 | 3.9651546  | 9262 | 3.9667048  | 9295 | 3.9682494  |
| 9230 | 3.9652017  | 9263 | 3.9667517  | 9296 | 3.9682961  |
| 9231 | 3.9652488  | 9264 | 3.9667985  | 9297 | 3.9683428  |
| 9232 | 3.9652958  | 9265 | 3.9668454  | 9298 | 3.9683895  |
| 9233 | 3.9653428  | 9266 | 3.9668923  | 9299 | 3.9684362  |
| 9234 | 3.9653899  | 9267 | 3.9669392  | 9300 | 3.9684829  |



| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 9401 | 3.9731741  | 9434 | 3.9746959  | 9467 | 3.9762124  |
| 9402 | 3.9732202  | 9435 | 3.9747419  | 9468 | 3.9762582  |
| 9403 | 3.9732664  | 9436 | 3.9747879  | 9469 | 3.9763041  |
| 9404 | 3.9733126  | 9437 | 3.9748340  | 9470 | 3.9763500  |
| 9405 | 3.9733588  | 9438 | 3.9748800  | 9471 | 3.9763958  |
| 9406 | 3.9734050  | 9439 | 3.9749260  | 9472 | 3.9764417  |
| 9407 | 3.9734511  | 9440 | 3.9749720  | 9473 | 3.9764875  |
| 9408 | 3.9734973  | 9441 | 3.9750180  | 9474 | 3.9765334  |
| 9409 | 3.9735435  | 9442 | 3.9750640  | 9475 | 3.9765792  |
| 9410 | 3.9735896  | 9443 | 3.9751100  | 9476 | 3.9766251  |
| 9411 | 3.9736358  | 9444 | 3.9751560  | 9477 | 3.9766709  |
| 9412 | 3.9736819  | 9445 | 3.9752020  | 9478 | 3.9767167  |
| 9413 | 3.9737281  | 9446 | 3.9752479  | 9479 | 3.9767625  |
| 9414 | 3.9737742  | 9447 | 3.9752939  | 9480 | 3.9768083  |
| 9415 | 3.9738203  | 9448 | 3.9753399  | 9481 | 3.9768541  |
| 9416 | 3.9738664  | 9449 | 3.9753858  | 9482 | 3.9768999  |
| 9417 | 3.9739126  | 9450 | 3.9754318  | 9483 | 3.9769457  |
| 9418 | 3.9739587  | 9451 | 3.9754778  | 9484 | 3.9769915  |
| 9419 | 3.9740048  | 9452 | 3.9755237  | 9485 | 3.9770373  |
| 9420 | 3.9740509  | 9453 | 3.9755697  | 9486 | 3.9770831  |
| 9421 | 3.9740970  | 9454 | 3.9756156  | 9487 | 3.9771289  |
| 9422 | 3.9741431  | 9455 | 3.9756615  | 9488 | 3.9771747  |
| 9423 | 3.9741892  | 9456 | 3.9757075  | 9489 | 3.9772204  |
| 9424 | 3.9742353  | 9457 | 3.9757534  | 9490 | 3.9772662  |
| 9425 | 3.9742814  | 9458 | 3.9757993  | 9491 | 3.9773120  |
| 9426 | 3.9743274  | 9459 | 3.9758452  | 9492 | 3.9773577  |
| 9427 | 3.9743735  | 9460 | 3.9758911  | 9493 | 3.9774035  |
| 9428 | 3.9744196  | 9461 | 3.9759370  | 9494 | 3.9774492  |
| 9429 | 3.9744656  | 9462 | 3.9759829  | 9495 | 3.9774950  |
| 9430 | 3.9745117  | 9463 | 3.9760288  | 9496 | 3.9775407  |
| 9431 | 3.9745577  | 9464 | 3.9760747  | 9497 | 3.9775864  |
| 9432 | 3.9746038  | 9465 | 3.9761206  | 9498 | 3.9776322  |
| 9433 | 3.9746498  | 9466 | 3.9761665  | 9499 | 3.9776779  |
| 9434 | 3.9746959  | 9467 | 3.9762124  | 9500 | 3.9777236  |

| N.   | Logarithh. | N.   | Logarithh. | N.   | Logarithh. |
|------|------------|------|------------|------|------------|
| 9301 | 3.9685296  | 9334 | 3.9700678  | 9367 | 3.9716005  |
| 9302 | 3.9685763  | 9335 | 3.9701143  | 9368 | 3.9716469  |
| 9303 | 3.9686230  | 9336 | 3.9701608  | 9369 | 3.9716932  |
| 9304 | 3.9686697  | 9337 | 3.9702074  | 9370 | 3.9717396  |
| 9305 | 3.9687164  | 9338 | 3.9702539  | 9371 | 3.9717859  |
| 9306 | 3.9687630  | 9339 | 3.9703004  | 9372 | 3.9718323  |
| 9307 | 3.9688097  | 9340 | 3.9703469  | 9373 | 3.9718786  |
| 9308 | 3.9688564  | 9341 | 3.9703934  | 9374 | 3.9719249  |
| 9309 | 3.9689030  | 9342 | 3.9704399  | 9375 | 3.9719713  |
| 9310 | 3.9689497  | 9343 | 3.9704863  | 9376 | 3.9720176  |
| 9311 | 3.9689963  | 9344 | 3.9705328  | 9377 | 3.9720639  |
| 9312 | 3.9690430  | 9345 | 3.9705793  | 9378 | 3.9721102  |
| 9313 | 3.9690896  | 9346 | 3.9706258  | 9379 | 3.9721565  |
| 9314 | 3.9691362  | 9347 | 3.9706722  | 9380 | 3.9722028  |
| 9315 | 3.9691829  | 9348 | 3.9707187  | 9381 | 3.9722491  |
| 9316 | 3.9692295  | 9349 | 3.9707652  | 9382 | 3.9722954  |
| 9317 | 3.9692761  | 9350 | 3.9708116  | 9383 | 3.9723417  |
| 9318 | 3.9693227  | 9351 | 3.9708581  | 9384 | 3.9723880  |
| 9319 | 3.9693693  | 9352 | 3.9709045  | 9385 | 3.9724343  |
| 9320 | 3.9694159  | 9353 | 3.9709509  | 9386 | 3.9724805  |
| 9321 | 3.9694625  | 9354 | 3.9709974  | 9387 | 3.9725268  |
| 9322 | 3.9695091  | 9355 | 3.9710438  | 9388 | 3.9725731  |
| 9323 | 3.9695557  | 9356 | 3.9710902  | 9389 | 3.9726193  |
| 9324 | 3.9696023  | 9357 | 3.9711366  | 9390 | 3.9726656  |
| 9325 | 3.9696488  | 9358 | 3.9711830  | 9391 | 3.9727118  |
| 9326 | 3.9696954  | 9359 | 3.9712294  | 9392 | 3.9727581  |
| 9327 | 3.9697420  | 9360 | 3.9712758  | 9393 | 3.9728043  |
| 9328 | 3.9697885  | 9361 | 3.9713222  | 9394 | 3.9728506  |
| 9329 | 3.9698351  | 9362 | 3.9713686  | 9395 | 3.9728968  |
| 9330 | 3.9698816  | 9363 | 3.9714150  | 9396 | 3.9729430  |
| 9331 | 3.9699282  | 9364 | 3.9714614  | 9397 | 3.9729892  |
| 9332 | 3.9699747  | 9365 | 3.9715078  | 9398 | 3.9730354  |
| 9333 | 3.9700213  | 9366 | 3.9715542  | 9399 | 3.9730816  |
| 9334 | 3.9700678  | 9367 | 3.9716005  | 9400 | 3.9731279  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 9401 | 3.9731741  | 9434 | 3.9746959  | 9467 | 3.9762124  |
| 9402 | 3.9732202  | 9435 | 3.9747419  | 9468 | 3.9762582  |
| 9403 | 3.9732664  | 9436 | 3.9747879  | 9469 | 3.9763041  |
| 9404 | 3.9733126  | 9437 | 3.9748340  | 9470 | 3.9763500  |
| 9405 | 3.9733588  | 9438 | 3.9748800  | 9471 | 3.9763958  |
| 9406 | 3.9734050  | 9439 | 3.9749260  | 9472 | 3.9764417  |
| 9407 | 3.9734511  | 9440 | 3.9749720  | 9473 | 3.9764875  |
| 9408 | 3.9734973  | 9441 | 3.9750180  | 9474 | 3.9765334  |
| 9409 | 3.9735435  | 9442 | 3.9750640  | 9475 | 3.9765792  |
| 9410 | 3.9735896  | 9443 | 3.9751100  | 9476 | 3.9766251  |
| 9411 | 3.9736358  | 9444 | 3.9751560  | 9477 | 3.9766709  |
| 9412 | 3.9736819  | 9445 | 3.9752020  | 9478 | 3.9767167  |
| 9413 | 3.9737281  | 9446 | 3.9752479  | 9479 | 3.9767625  |
| 9414 | 3.9737742  | 9447 | 3.9752939  | 9480 | 3.9768083  |
| 9415 | 3.9738203  | 9448 | 3.9753399  | 9481 | 3.9768541  |
| 9416 | 3.9738664  | 9449 | 3.9753858  | 9482 | 3.9768999  |
| 9417 | 3.9739126  | 9450 | 3.9754318  | 9483 | 3.9769457  |
| 9418 | 3.9739587  | 9451 | 3.9754778  | 9484 | 3.9769915  |
| 9419 | 3.9740048  | 9452 | 3.9755237  | 9485 | 3.9770373  |
| 9420 | 3.9740509  | 9453 | 3.9755697  | 9486 | 3.9770831  |
| 9421 | 3.9740970  | 9454 | 3.9756156  | 9487 | 3.9771289  |
| 9422 | 3.9741431  | 9455 | 3.9756615  | 9488 | 3.9771747  |
| 9423 | 3.9741892  | 9456 | 3.9757075  | 9489 | 3.9772204  |
| 9424 | 3.9742353  | 9457 | 3.9757534  | 9490 | 3.9772662  |
| 9425 | 3.9742814  | 9458 | 3.9757993  | 9491 | 3.9773120  |
| 9426 | 3.9743274  | 9459 | 3.9758452  | 9492 | 3.9773577  |
| 9427 | 3.9743735  | 9460 | 3.9758911  | 9493 | 3.9774035  |
| 9428 | 3.9744196  | 9461 | 3.9759370  | 9494 | 3.9774492  |
| 9429 | 3.9744656  | 9462 | 3.9759829  | 9495 | 3.9774950  |
| 9430 | 3.9745117  | 9463 | 3.9760288  | 9496 | 3.9775407  |
| 9431 | 3.9745577  | 9464 | 3.9760747  | 9497 | 3.9775864  |
| 9432 | 3.9746038  | 9465 | 3.9761206  | 9498 | 3.9776322  |
| 9433 | 3.9746498  | 9466 | 3.9761665  | 9499 | 3.9776779  |
| 9434 | 3.9746959  | 9467 | 3.9762124  | 9500 | 3.9777236  |



| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 9501 | 3.9777693 | 9534 | 3.9792751 | 9567 | 3.9807758 |
| 9502 | 3.9778150 | 9535 | 3.9793207 | 9568 | 3.9808212 |
| 9503 | 3.9778607 | 9536 | 3.9793662 | 9569 | 3.9808666 |
| 9504 | 3.9779064 | 9537 | 3.9794118 | 9570 | 3.9809119 |
| 9505 | 3.9779521 | 9538 | 3.9794973 | 9571 | 3.9809573 |
| 9506 | 3.9779978 | 9539 | 3.9795028 | 9572 | 3.9810027 |
| 9507 | 3.9780435 | 9540 | 3.9795484 | 9573 | 3.9810481 |
| 9508 | 3.9780892 | 9541 | 3.9795939 | 9574 | 3.9810934 |
| 9509 | 3.9781348 | 9542 | 3.9796394 | 9575 | 3.9811388 |
| 9510 | 3.9781805 | 9543 | 3.9796849 | 9576 | 3.9811841 |
| 9511 | 3.9782262 | 9544 | 3.9797304 | 9577 | 3.9812295 |
| 9512 | 3.9782718 | 9545 | 3.9797759 | 9578 | 3.9812748 |
| 9513 | 3.9783175 | 9546 | 3.9798214 | 9579 | 3.9813202 |
| 9514 | 3.9783631 | 9547 | 3.9798669 | 9580 | 3.9813655 |
| 9515 | 3.9784088 | 9548 | 3.9799124 | 9581 | 3.9814108 |
| 9516 | 3.9784544 | 9549 | 3.9799579 | 9582 | 3.9814562 |
| 9517 | 3.9785001 | 9550 | 3.9800034 | 9583 | 3.9815015 |
| 9518 | 3.9785457 | 9551 | 3.9800488 | 9584 | 3.9815468 |
| 9519 | 3.9785913 | 9552 | 3.9800943 | 9585 | 3.9815921 |
| 9520 | 3.9786369 | 9553 | 3.9801398 | 9586 | 3.9816374 |
| 9521 | 3.9786826 | 9554 | 3.9801852 | 9587 | 3.9816827 |
| 9522 | 3.9787282 | 9555 | 3.9802307 | 9588 | 3.9817280 |
| 9523 | 3.9787738 | 9556 | 3.9802761 | 9589 | 3.9817733 |
| 9524 | 3.9788194 | 9557 | 3.9803216 | 9590 | 3.9818186 |
| 9525 | 3.9788650 | 9558 | 3.9803670 | 9591 | 3.9818639 |
| 9526 | 3.9789106 | 9559 | 3.9804125 | 9592 | 3.9819092 |
| 9527 | 3.9789562 | 9560 | 3.9804579 | 9593 | 3.9819544 |
| 9528 | 3.9790017 | 9561 | 3.9805033 | 9594 | 3.9819997 |
| 9529 | 3.9790473 | 9562 | 3.9805487 | 9595 | 3.9820450 |
| 9530 | 3.9790929 | 9563 | 3.9805942 | 9596 | 3.9820902 |
| 9531 | 3.9791385 | 9564 | 3.9806396 | 9597 | 3.9821355 |
| 9532 | 3.9791840 | 9565 | 3.9806850 | 9598 | 3.9821807 |
| 9533 | 3.9792296 | 9566 | 3.9807304 | 9599 | 3.9822260 |
| 9534 | 3.9792751 | 9567 | 3.9807758 | 9600 | 3.9822712 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 9601 | 3.9823165 | 9634 | 3.9838066 | 9667 | 3.9852917 |
| 9602 | 3.9823617 | 9635 | 3.9838517 | 9668 | 3.9853366 |
| 9603 | 3.9824069 | 9636 | 3.9838968 | 9669 | 3.9853816 |
| 9604 | 3.9824522 | 9637 | 3.9839419 | 9670 | 3.9854265 |
| 9605 | 3.9824974 | 9638 | 3.9839869 | 9671 | 3.9854714 |
| 9606 | 3.9825426 | 9639 | 3.9840320 | 9672 | 3.9855163 |
| 9607 | 3.9825878 | 9640 | 3.9840770 | 9673 | 3.9855612 |
| 9608 | 3.9826330 | 9641 | 3.9841221 | 9674 | 3.9856061 |
| 9609 | 3.9826782 | 9642 | 3.9841671 | 9675 | 3.9856510 |
| 9610 | 3.9827234 | 9643 | 3.9842122 | 9676 | 3.9856959 |
| 9611 | 3.9827686 | 9644 | 3.9842572 | 9677 | 3.9857407 |
| 9612 | 3.9828138 | 9645 | 3.9843022 | 9678 | 3.9857856 |
| 9613 | 3.9828589 | 9646 | 3.9843473 | 9679 | 3.9858305 |
| 9614 | 3.9829041 | 9647 | 3.9843923 | 9680 | 3.9858754 |
| 9615 | 3.9829493 | 9648 | 3.9844373 | 9681 | 3.9859202 |
| 9616 | 3.9829945 | 9649 | 3.9844823 | 9682 | 3.9859651 |
| 9617 | 3.9830396 | 9650 | 3.9845273 | 9683 | 3.9860099 |
| 9618 | 3.9830848 | 9651 | 3.9845723 | 9684 | 3.9860548 |
| 9619 | 3.9831299 | 9652 | 3.9846173 | 9685 | 3.9860996 |
| 9620 | 3.9831751 | 9653 | 3.9846623 | 9686 | 3.9861445 |
| 9621 | 3.9832202 | 9654 | 3.9847073 | 9687 | 3.9861893 |
| 9622 | 3.9832654 | 9655 | 3.9847523 | 9688 | 3.9862341 |
| 9623 | 3.9833105 | 9656 | 3.9847973 | 9689 | 3.9862790 |
| 9624 | 3.9833556 | 9657 | 3.9848422 | 9690 | 3.9863238 |
| 9625 | 3.9834007 | 9658 | 3.9848872 | 9691 | 3.9863686 |
| 9626 | 3.9834459 | 9659 | 3.9849322 | 9692 | 3.9864134 |
| 9627 | 3.9834910 | 9660 | 3.9849771 | 9693 | 3.9864582 |
| 9628 | 3.9835361 | 9661 | 3.9850221 | 9694 | 3.9865030 |
| 9629 | 3.9835812 | 9662 | 3.9850670 | 9695 | 3.9865478 |
| 9630 | 3.9836263 | 9663 | 3.9851120 | 9696 | 3.9865926 |
| 9631 | 3.9836714 | 9664 | 3.9851569 | 9697 | 3.9866374 |
| 9632 | 3.9837165 | 9665 | 3.9852019 | 9698 | 3.9866822 |
| 9633 | 3.9837616 | 9666 | 3.9852468 | 9699 | 3.9867270 |
| 9634 | 3.9838066 | 9667 | 3.9852917 | 9700 | 3.9867717 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 8901 | 3.9494388 | 8934 | 3.9510459 | 8967 | 3.9526472 |
| 8902 | 3.9494876 | 8935 | 3.9510946 | 8968 | 3.9526956 |
| 8903 | 3.9495364 | 8936 | 3.9511432 | 8969 | 3.9527440 |
| 8904 | 3.9495852 | 8937 | 3.9511918 | 8970 | 3.9527924 |
| 8905 | 3.9496339 | 8938 | 3.9512404 | 8971 | 3.9528409 |
| 8906 | 3.9496827 | 8939 | 3.9512889 | 8972 | 3.9528893 |
| 8907 | 3.9497315 | 8940 | 3.9513375 | 8973 | 3.9529377 |
| 8908 | 3.9497802 | 8941 | 3.9513861 | 8974 | 3.9529861 |
| 8909 | 3.9498290 | 8942 | 3.9514347 | 8975 | 3.9530345 |
| 8910 | 3.9498777 | 8943 | 3.9514832 | 8976 | 3.9530828 |
| 8911 | 3.9499264 | 8944 | 3.9515318 | 8977 | 3.9531312 |
| 8912 | 3.9499752 | 8945 | 3.9515803 | 8978 | 3.9531796 |
| 8913 | 3.9500239 | 8946 | 3.9516289 | 8979 | 3.9532280 |
| 8914 | 3.9500726 | 8947 | 3.9516774 | 8980 | 3.9532763 |
| 8915 | 3.9501213 | 8948 | 3.9517260 | 8981 | 3.9533247 |
| 8916 | 3.9501701 | 8949 | 3.9517745 | 8982 | 3.9533730 |
| 8917 | 3.9502188 | 8950 | 3.9518230 | 8983 | 3.9534214 |
| 8918 | 3.9502675 | 8951 | 3.9518716 | 8984 | 3.9534697 |
| 8919 | 3.9503162 | 8952 | 3.9519201 | 8985 | 3.9535181 |
| 8920 | 3.9503649 | 8953 | 3.9519686 | 8986 | 3.9535664 |
| 8921 | 3.9504135 | 8954 | 3.9520171 | 8987 | 3.9536147 |
| 8922 | 3.9504622 | 8955 | 3.9520656 | 8988 | 3.9536631 |
| 8923 | 3.9505109 | 8956 | 3.9521141 | 8989 | 3.9537114 |
| 8924 | 3.9505596 | 8957 | 3.9521626 | 8990 | 3.9537597 |
| 8925 | 3.9506082 | 8958 | 3.9522111 | 8991 | 3.9538080 |
| 8926 | 3.9506569 | 8959 | 3.9522595 | 8992 | 3.9538563 |
| 8927 | 3.9507055 | 8960 | 3.9523080 | 8993 | 3.9539046 |
| 8928 | 3.9507542 | 8961 | 3.9523565 | 8994 | 3.9539529 |
| 8929 | 3.9508028 | 8962 | 3.9524049 | 8995 | 3.9540012 |
| 8930 | 3.9508515 | 8963 | 3.9524534 | 8996 | 3.9540494 |
| 8931 | 3.9509001 | 8964 | 3.9525018 | 8997 | 3.9540977 |
| 8932 | 3.9509487 | 8965 | 3.9525503 | 8998 | 3.9541460 |
| 8933 | 3.9509973 | 8966 | 3.9525987 | 8999 | 3.9541943 |
| 8934 | 3.9510459 | 8967 | 3.9526472 | 9000 | 3.9542425 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 9001 | 3.9542908 | 9034 | 3.9558801 | 9067 | 3.9574636 |
| 9002 | 3.9543390 | 9035 | 3.9559282 | 9068 | 3.9575115 |
| 9003 | 3.9543872 | 9036 | 3.9559762 | 9069 | 3.9575594 |
| 9004 | 3.9544355 | 9037 | 3.9560243 | 9070 | 3.9576073 |
| 9005 | 3.9544837 | 9038 | 3.9560723 | 9071 | 3.9576552 |
| 9006 | 3.9545319 | 9039 | 3.9561204 | 9072 | 3.9577030 |
| 9007 | 3.9545802 | 9040 | 3.9561684 | 9073 | 3.9577509 |
| 9008 | 3.9546284 | 9041 | 3.9562165 | 9074 | 3.9577988 |
| 9009 | 3.9546766 | 9042 | 3.9562645 | 9075 | 3.9578466 |
| 9010 | 3.9547248 | 9043 | 3.9563125 | 9076 | 3.9578945 |
| 9011 | 3.9547730 | 9044 | 3.9563606 | 9077 | 3.9579423 |
| 9012 | 3.9548212 | 9045 | 3.9564086 | 9078 | 3.9579902 |
| 9013 | 3.9548694 | 9046 | 3.9564566 | 9079 | 3.9580380 |
| 9014 | 3.9549176 | 9047 | 3.9565046 | 9080 | 3.9580858 |
| 9015 | 3.9549657 | 9048 | 3.9565526 | 9081 | 3.9581337 |
| 9016 | 3.9550139 | 9049 | 3.9566006 | 9082 | 3.9581815 |
| 9017 | 3.9550621 | 9050 | 3.9566486 | 9083 | 3.9582293 |
| 9018 | 3.9551102 | 9051 | 3.9566966 | 9084 | 3.9582771 |
| 9019 | 3.9551584 | 9052 | 3.9567445 | 9085 | 3.9583249 |
| 9020 | 3.9552065 | 9053 | 3.9567925 | 9086 | 3.9583727 |
| 9021 | 3.9552547 | 9054 | 3.9568405 | 9087 | 3.9584205 |
| 9022 | 3.9553028 | 9055 | 3.9568885 | 9088 | 3.9584683 |
| 9023 | 3.9553510 | 9056 | 3.9569364 | 9089 | 3.9585161 |
| 9024 | 3.9553991 | 9057 | 3.9569844 | 9090 | 3.9585639 |
| 9025 | 3.9554472 | 9058 | 3.9570323 | 9091 | 3.9586117 |
| 9026 | 3.9554953 | 9059 | 3.9570803 | 9092 | 3.9586594 |
| 9027 | 3.9555434 | 9060 | 3.9571282 | 9093 | 3.9587072 |
| 9028 | 3.9555915 | 9061 | 3.9571761 | 9094 | 3.9587549 |
| 9029 | 3.9556397 | 9062 | 3.9572241 | 9095 | 3.9588027 |
| 9030 | 3.9556877 | 9063 | 3.9572720 | 9096 | 3.9588505 |
| 9031 | 3.9557358 | 9064 | 3.9573199 | 9097 | 3.9588982 |
| 9032 | 3.9557839 | 9065 | 3.9573678 | 9098 | 3.9589459 |
| 9033 | 3.9558320 | 9066 | 3.9574157 | 9099 | 3.9589937 |
| 9034 | 3.9558801 | 9067 | 3.9574636 | 9100 | 3.9590414 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 9101 | 3.9590891 | 9134 | 3.9606610 | 9167 | 3.9622272 |
| 9102 | 3.9591368 | 9135 | 3.9607086 | 9168 | 3.9622746 |
| 9103 | 3.9591845 | 9136 | 3.9607561 | 9169 | 3.9623220 |
| 9104 | 3.9592322 | 9137 | 3.9608036 | 9170 | 3.9623693 |
| 9105 | 3.9592799 | 9138 | 3.9608512 | 9171 | 3.9624167 |
| 9106 | 3.9593276 | 9139 | 3.9608987 | 9172 | 3.9624640 |
| 9107 | 3.9593753 | 9140 | 3.9609462 | 9173 | 3.9625114 |
| 9108 | 3.9594230 | 9141 | 3.9609937 | 9174 | 3.9625587 |
| 9109 | 3.9594707 | 9142 | 3.9610412 | 9175 | 3.9626061 |
| 9110 | 3.9595184 | 9143 | 3.9610887 | 9176 | 3.9626534 |
| 9111 | 3.9595660 | 9144 | 3.9611362 | 9177 | 3.9627007 |
| 9112 | 3.9596137 | 9145 | 3.9611837 | 9178 | 3.9627481 |
| 9113 | 3.9596614 | 9146 | 3.9612312 | 9179 | 3.9627954 |
| 9114 | 3.9597090 | 9147 | 3.9612787 | 9180 | 3.9628427 |
| 9115 | 3.9597567 | 9148 | 3.9613262 | 9181 | 3.9628900 |
| 9116 | 3.9598043 | 9149 | 3.9613736 | 9182 | 3.9629373 |
| 9117 | 3.9598520 | 9150 | 3.9614211 | 9183 | 3.9629846 |
| 9118 | 3.9598996 | 9151 | 3.9614686 | 9184 | 3.9630319 |
| 9119 | 3.9599472 | 9152 | 3.9615160 | 9185 | 3.9630792 |
| 9120 | 3.9599948 | 9153 | 3.9615635 | 9186 | 3.9631264 |
| 9121 | 3.9600425 | 9154 | 3.9616109 | 9187 | 3.9631737 |
| 9122 | 3.9600901 | 9155 | 3.9616583 | 9188 | 3.9632210 |
| 9123 | 3.9601377 | 9156 | 3.9617058 | 9189 | 3.9632683 |
| 9124 | 3.9601853 | 9157 | 3.9617532 | 9190 | 3.9633155 |
| 9125 | 3.9602329 | 9158 | 3.9618006 | 9191 | 3.9633628 |
| 9126 | 3.9602805 | 9159 | 3.9618481 | 9192 | 3.9634100 |
| 9127 | 3.9603280 | 9160 | 3.9618955 | 9193 | 3.9634573 |
| 9128 | 3.9603756 | 9161 | 3.9619429 | 9194 | 3.9635045 |
| 9129 | 3.9604232 | 9162 | 3.9619903 | 9195 | 3.9635517 |
| 9130 | 3.9604708 | 9163 | 3.9620377 | 9196 | 3.9635990 |
| 9131 | 3.9605183 | 9164 | 3.9620851 | 9197 | 3.9636462 |
| 9132 | 3.9605659 | 9165 | 3.9621325 | 9198 | 3.9636934 |
| 9133 | 3.9606135 | 9166 | 3.9621799 | 9199 | 3.9637406 |
| 9134 | 3.9606610 | 9167 | 3.9622272 | 9200 | 3.9637878 |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 9201 | 3.9638350 | 9234 | 3.9653899 | 9267 | 3.9669392 |
| 9202 | 3.9638822 | 9235 | 3.9654369 | 9268 | 3.9669860 |
| 9203 | 3.9639294 | 9236 | 3.9654839 | 9269 | 3.9670329 |
| 9204 | 3.9639766 | 9237 | 3.9655309 | 9270 | 3.9670797 |
| 9205 | 3.9640238 | 9238 | 3.9655780 | 9271 | 3.9671266 |
| 9206 | 3.9640710 | 9239 | 3.9656250 | 9272 | 3.9671734 |
| 9207 | 3.9641181 | 9240 | 3.9656720 | 9273 | 3.9672203 |
| 9208 | 3.9641653 | 9241 | 3.9657190 | 9274 | 3.9672671 |
| 9209 | 3.9642125 | 9242 | 3.9657660 | 9275 | 3.9673139 |
| 9210 | 3.9642596 | 9243 | 3.9658130 | 9276 | 3.9673607 |
| 9211 | 3.9643068 | 9244 | 3.9658599 | 9277 | 3.9674076 |
| 9212 | 3.9643539 | 9245 | 3.9659069 | 9278 | 3.9674544 |
| 9213 | 3.9644011 | 9246 | 3.9659539 | 9279 | 3.9675012 |
| 9214 | 3.9644482 | 9247 | 3.9660009 | 9280 | 3.9675480 |
| 9215 | 3.9644953 | 9248 | 3.9660478 | 9281 | 3.9675948 |
| 9216 | 3.9645425 | 9249 | 3.9660948 | 9282 | 3.9676416 |
| 9217 | 3.9645896 | 9250 | 3.9661417 | 9283 | 3.9676883 |
| 9218 | 3.9646367 | 9251 | 3.9661887 | 9284 | 3.9677351 |
| 9219 | 3.9646838 | 9252 | 3.9662356 | 9285 | 3.9677819 |
| 9220 | 3.9647309 | 9253 | 3.9662826 | 9286 | 3.9678287 |
| 9221 | 3.9647780 | 9254 | 3.9663295 | 9287 | 3.9678754 |
| 9222 | 3.9648251 | 9255 | 3.9663764 | 9288 | 3.9679222 |
| 9223 | 3.9648722 | 9256 | 3.9664233 | 9289 | 3.9679690 |
| 9224 | 3.9649193 | 9257 | 3.9664703 | 9290 | 3.9680157 |
| 9225 | 3.9649664 | 9258 | 3.9665172 | 9291 | 3.9680625 |
| 9226 | 3.9650134 | 9259 | 3.9665641 | 9292 | 3.9681092 |
| 9227 | 3.9650605 | 9260 | 3.9666110 | 9293 | 3.9681559 |
| 9228 | 3.9651076 | 9261 | 3.9666579 | 9294 | 3.9682027 |
| 9229 | 3.9651546 | 9262 | 3.9667048 | 9295 | 3.9682494 |
| 9230 | 3.9652017 | 9263 | 3.9667517 | 9296 | 3.9682961 |
| 9231 | 3.9652488 | 9264 | 3.9667985 | 9297 | 3.9683428 |
| 9232 | 3.9652958 | 9265 | 3.9668454 | 9298 | 3.9683895 |
| 9233 | 3.9653428 | 9266 | 3.9668923 | 9299 | 3.9684362 |
| 9234 | 3.9653899 | 9267 | 3.9669392 | 9300 | 3.9684829 |

| N.   | Logarithh. | N.   | Logarithh. | N.   | Logarithh. |
|------|------------|------|------------|------|------------|
| 9301 | 3.9685296  | 9334 | 3.9700678  | 9367 | 3.9716005  |
| 9302 | 3.9685763  | 9335 | 3.9701143  | 9368 | 3.9716469  |
| 9303 | 3.9686230  | 9336 | 3.9701608  | 9369 | 3.9716932  |
| 9304 | 3.9686697  | 9337 | 3.9702074  | 9370 | 3.9717396  |
| 9305 | 3.9687164  | 9338 | 3.9702539  | 9371 | 3.9717859  |
| 9306 | 3.9687630  | 9339 | 3.9703004  | 9372 | 3.9718323  |
| 9307 | 3.9688097  | 9340 | 3.9703469  | 9373 | 3.9718786  |
| 9308 | 3.9688564  | 9341 | 3.9703934  | 9374 | 3.9719249  |
| 9309 | 3.9689030  | 9342 | 3.9704399  | 9375 | 3.9719713  |
| 9310 | 3.9689497  | 9343 | 3.9704863  | 9376 | 3.9720176  |
| 9311 | 3.9689963  | 9344 | 3.9705328  | 9377 | 3.9720639  |
| 9312 | 3.9690430  | 9345 | 3.9705793  | 9378 | 3.9721102  |
| 9313 | 3.9690896  | 9346 | 3.9706258  | 9379 | 3.9721565  |
| 9314 | 3.9691362  | 9347 | 3.9706722  | 9380 | 3.9722028  |
| 9315 | 3.9691829  | 9348 | 3.9707187  | 9381 | 3.9722491  |
| 9316 | 3.9692295  | 9349 | 3.9707652  | 9382 | 3.9722954  |
| 9317 | 3.9692761  | 9350 | 3.9708116  | 9383 | 3.9723417  |
| 9318 | 3.9693227  | 9351 | 3.9708581  | 9384 | 3.9723880  |
| 9319 | 3.9693693  | 9352 | 3.9709045  | 9385 | 3.9724343  |
| 9320 | 3.9694159  | 9353 | 3.9709509  | 9386 | 3.9724805  |
| 9321 | 3.9694625  | 9354 | 3.9709974  | 9387 | 3.9725268  |
| 9322 | 3.9695091  | 9355 | 3.9710438  | 9388 | 3.9725731  |
| 9323 | 3.9695557  | 9356 | 3.9710902  | 9389 | 3.9726193  |
| 9324 | 3.9696023  | 9357 | 3.9711366  | 9390 | 3.9726656  |
| 9325 | 3.9696488  | 9358 | 3.9711830  | 9391 | 3.9727118  |
| 9326 | 3.9696954  | 9359 | 3.9712294  | 9392 | 3.9727581  |
| 9327 | 3.9697420  | 9360 | 3.9712758  | 9393 | 3.9728043  |
| 9328 | 3.9697885  | 9361 | 3.9713222  | 9394 | 3.9728506  |
| 9329 | 3.9698351  | 9362 | 3.9713686  | 9395 | 3.9728968  |
| 9330 | 3.9698816  | 9363 | 3.9714150  | 9396 | 3.9729430  |
| 9331 | 3.9699282  | 9364 | 3.9714614  | 9397 | 3.9729892  |
| 9332 | 3.9699747  | 9365 | 3.9715078  | 9398 | 3.9730354  |
| 9333 | 3.9700213  | 9366 | 3.9715542  | 9399 | 3.9730816  |
| 9334 | 3.9700678  | 9367 | 3.9716005  | 9400 | 3.9731279  |

| N.   | Logarithb. | N.   | Logarithb. | N.   | Logarithb. |
|------|------------|------|------------|------|------------|
| 9401 | 3.9731741  | 9434 | 3.9746959  | 9467 | 3.9762124  |
| 9402 | 3.9732202  | 9435 | 3.9747419  | 9468 | 3.9762582  |
| 9403 | 3.9732664  | 9436 | 3.9747879  | 9469 | 3.9763041  |
| 9404 | 3.9733126  | 9437 | 3.9748340  | 9470 | 3.9763500  |
| 9405 | 3.9733588  | 9438 | 3.9748800  | 9471 | 3.9763958  |
| 9406 | 3.9734050  | 9439 | 3.9749260  | 9472 | 3.9764417  |
| 9407 | 3.9734511  | 9440 | 3.9749720  | 9473 | 3.9764875  |
| 9408 | 3.9734973  | 9441 | 3.9750180  | 9474 | 3.9765334  |
| 9409 | 3.9735435  | 9442 | 3.9750640  | 9475 | 3.9765792  |
| 9410 | 3.9735896  | 9443 | 3.9751100  | 9476 | 3.9766251  |
| 9411 | 3.9736358  | 9444 | 3.9751560  | 9477 | 3.9766709  |
| 9412 | 3.9736819  | 9445 | 3.9752020  | 9478 | 3.9767167  |
| 9413 | 3.9737281  | 9446 | 3.9752479  | 9479 | 3.9767625  |
| 9414 | 3.9737742  | 9447 | 3.9752939  | 9480 | 3.9768083  |
| 9415 | 3.9738203  | 9448 | 3.9753399  | 9481 | 3.9768541  |
| 9416 | 3.9738664  | 9449 | 3.9753858  | 9482 | 3.9768999  |
| 9417 | 3.9739126  | 9450 | 3.9754318  | 9483 | 3.9769457  |
| 9418 | 3.9739587  | 9451 | 3.9754778  | 9484 | 3.9769915  |
| 9419 | 3.9740048  | 9452 | 3.9755237  | 9485 | 3.9770373  |
| 9420 | 3.9740509  | 9453 | 3.9755697  | 9486 | 3.9770831  |
| 9421 | 3.9740970  | 9454 | 3.9756156  | 9487 | 3.9771289  |
| 9422 | 3.9741431  | 9455 | 3.9756615  | 9488 | 3.9771747  |
| 9423 | 3.9741892  | 9456 | 3.9757075  | 9489 | 3.9772204  |
| 9424 | 3.9742353  | 9457 | 3.9757534  | 9490 | 3.9772662  |
| 9425 | 3.9742814  | 9458 | 3.9757993  | 9491 | 3.9773120  |
| 9426 | 3.9743274  | 9459 | 3.9758452  | 9492 | 3.9773577  |
| 9427 | 3.9743735  | 9460 | 3.9758911  | 9493 | 3.9774035  |
| 9428 | 3.9744196  | 9461 | 3.9759370  | 9494 | 3.9774492  |
| 9429 | 3.9744656  | 9462 | 3.9759829  | 9495 | 3.9774950  |
| 9430 | 3.9745117  | 9463 | 3.9760288  | 9496 | 3.9775407  |
| 9431 | 3.9745577  | 9464 | 3.9760747  | 9497 | 3.9775864  |
| 9432 | 3.9746038  | 9465 | 3.9761206  | 9498 | 3.9776322  |
| 9433 | 3.9746498  | 9466 | 3.9761665  | 9499 | 3.9776779  |
| 9434 | 3.9746959  | 9467 | 3.9762124  | 9500 | 3.9777236  |



| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 9501 | 3.9777693  | 9534 | 3.9792751  | 9567 | 3.9807758  |
| 9502 | 3.9778150  | 9535 | 3.9793207  | 9568 | 3.9808212  |
| 9503 | 3.9778607  | 9536 | 3.9793662  | 9569 | 3.9808666  |
| 9504 | 3.9779064  | 9537 | 3.9794118  | 9570 | 3.9809119  |
| 9505 | 3.9779521  | 9538 | 3.9794973  | 9571 | 3.9809573  |
| 9506 | 3.9779978  | 9539 | 3.9795028  | 9572 | 3.9810027  |
| 9507 | 3.9780435  | 9540 | 3.9795484  | 9573 | 3.9810481  |
| 9508 | 3.9780892  | 9541 | 3.9795939  | 9574 | 3.9810934  |
| 9509 | 3.9781348  | 9542 | 3.9796394  | 9575 | 3.9811388  |
| 9510 | 3.9781805  | 9543 | 3.9796849  | 9576 | 3.9811841  |
| 9511 | 3.9782262  | 9544 | 3.9797304  | 9577 | 3.9812295  |
| 9512 | 3.9782718  | 9545 | 3.9797759  | 9578 | 3.9812748  |
| 9513 | 3.9783175  | 9546 | 3.9798214  | 9579 | 3.9813202  |
| 9514 | 3.9783631  | 9547 | 3.9798669  | 9580 | 3.9813655  |
| 9515 | 3.9784088  | 9548 | 3.9799124  | 9581 | 3.9814108  |
| 9516 | 3.9784544  | 9549 | 3.9799579  | 9582 | 3.9814562  |
| 9517 | 3.9785001  | 9550 | 3.9800034  | 9583 | 3.9815015  |
| 9518 | 3.9785457  | 9551 | 3.9800488  | 9584 | 3.9815468  |
| 9519 | 3.9785913  | 9552 | 3.9800943  | 9585 | 3.9815921  |
| 9520 | 3.9786369  | 9553 | 3.9801398  | 9586 | 3.9816374  |
| 9521 | 3.9786826  | 9554 | 3.9801852  | 9587 | 3.9816827  |
| 9522 | 3.9787282  | 9555 | 3.9802307  | 9588 | 3.9817280  |
| 9523 | 3.9787738  | 9556 | 3.9802761  | 9589 | 3.9817733  |
| 9524 | 3.9788194  | 9557 | 3.9803216  | 9590 | 3.9818186  |
| 9525 | 3.9788650  | 9558 | 3.9803670  | 9591 | 3.9818639  |
| 9526 | 3.9789106  | 9559 | 3.9804125  | 9592 | 3.9819092  |
| 9527 | 3.9789562  | 9560 | 3.9804579  | 9593 | 3.9819544  |
| 9528 | 3.9790017  | 9561 | 3.9805033  | 9594 | 3.9819997  |
| 9529 | 3.9790473  | 9562 | 3.9805487  | 9595 | 3.9820450  |
| 9530 | 3.9790929  | 9563 | 3.9805942  | 9596 | 3.9820902  |
| 9531 | 3.9791385  | 9564 | 3.9806396  | 9597 | 3.9821355  |
| 9532 | 3.9791840  | 9565 | 3.9806850  | 9598 | 3.9821807  |
| 9533 | 3.9792296  | 9566 | 3.9807304  | 9599 | 3.9822260  |
| 9534 | 3.9792751  | 9567 | 3.9807758  | 9600 | 3.9822712  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 9601 | 3.9823165  | 9634 | 3.9838066  | 9667 | 3.9852917  |
| 9602 | 3.9823617  | 9635 | 3.9838517  | 9668 | 3.9853366  |
| 9603 | 3.9824069  | 9636 | 3.9838968  | 9669 | 3.9853816  |
| 9604 | 3.9824522  | 9637 | 3.9839419  | 9670 | 3.9854265  |
| 9605 | 3.9824974  | 9638 | 3.9839869  | 9671 | 3.9854714  |
| 9606 | 3.9825426  | 9639 | 3.9840320  | 9672 | 3.9855163  |
| 9607 | 3.9825878  | 9640 | 3.9840770  | 9673 | 3.9855612  |
| 9608 | 3.9826330  | 9641 | 3.9841221  | 9674 | 3.9856061  |
| 9609 | 3.9826782  | 9642 | 3.9841671  | 9675 | 3.9856510  |
| 9610 | 3.9827234  | 9643 | 3.9842122  | 9676 | 3.9856959  |
| 9611 | 3.9827686  | 9644 | 3.9842572  | 9677 | 3.9857407  |
| 9612 | 3.9828138  | 9645 | 3.9843022  | 9678 | 3.9857856  |
| 9613 | 3.9828589  | 9646 | 3.9843473  | 9679 | 3.9858305  |
| 9614 | 3.9829041  | 9647 | 3.9843923  | 9680 | 3.9858754  |
| 9615 | 3.9829493  | 9648 | 3.9844373  | 9681 | 3.9859202  |
| 9616 | 3.9829945  | 9649 | 3.9844823  | 9682 | 3.9859651  |
| 9617 | 3.9830396  | 9650 | 3.9845273  | 9683 | 3.9860099  |
| 9618 | 3.9830848  | 9651 | 3.9845723  | 9684 | 3.9860548  |
| 9619 | 3.9831299  | 9652 | 3.9846173  | 9685 | 3.9860996  |
| 9620 | 3.9831751  | 9653 | 3.9846623  | 9686 | 3.9861445  |
| 9621 | 3.9832202  | 9654 | 3.9847073  | 9687 | 3.9861893  |
| 9622 | 3.9832654  | 9655 | 3.9847523  | 9688 | 3.9862341  |
| 9623 | 3.9833105  | 9656 | 3.9847973  | 9689 | 3.9862790  |
| 9624 | 3.9833556  | 9657 | 3.9848422  | 9690 | 3.9863238  |
| 9625 | 3.9834007  | 9658 | 3.9848872  | 9691 | 3.9863686  |
| 9626 | 3.9834459  | 9659 | 3.9849322  | 9692 | 3.9864134  |
| 9627 | 3.9834910  | 9660 | 3.9849771  | 9693 | 3.9864582  |
| 9628 | 3.9835361  | 9661 | 3.9850221  | 9694 | 3.9865030  |
| 9629 | 3.9835812  | 9662 | 3.9850670  | 9695 | 3.9865478  |
| 9630 | 3.9836263  | 9663 | 3.9851120  | 9696 | 3.9865926  |
| 9631 | 3.9836714  | 9664 | 3.9851569  | 9697 | 3.9866374  |
| 9632 | 3.9837165  | 9665 | 3.9852019  | 9698 | 3.9866822  |
| 9633 | 3.9837616  | 9666 | 3.9852468  | 9699 | 3.9867270  |
| 9634 | 3.9838066  | 9667 | 3.9852917  | 9700 | 3.9867717  |

| N.   | Logarithm. | N.   | Logarithm. | N.   | Logarithm. |
|------|------------|------|------------|------|------------|
| 9701 | 3.9868165  | 9734 | 3.9882913  | 9767 | 3.9897612  |
| 9702 | 3.9868613  | 9735 | 3.9883360  | 9768 | 3.9898056  |
| 9703 | 3.9869060  | 9736 | 3.4883806  | 9769 | 3.9898501  |
| 9704 | 3.9869508  | 9737 | 3.9884252  | 9770 | 3.9898946  |
| 9705 | 3.9869955  | 9738 | 3.9884698  | 9771 | 3.9899390  |
| 9706 | 3.9870403  | 9739 | 3.9885144  | 9772 | 3.9899835  |
| 9707 | 3.9870850  | 9740 | 3.9885590  | 9773 | 3.9900279  |
| 9708 | 3.9871298  | 9741 | 3.9886035  | 9774 | 3.9900723  |
| 9709 | 3.9871745  | 9742 | 3.9886481  | 9775 | 3.9901168  |
| 9710 | 3.9872192  | 9743 | 3.9886927  | 9776 | 3.9901612  |
| 9711 | 3.9872640  | 9744 | 3.9887373  | 9777 | 3.9902056  |
| 9712 | 3.9873087  | 9745 | 3.9887818  | 9778 | 3.9902500  |
| 9713 | 3.9873534  | 9746 | 3.9888264  | 9779 | 3.9902944  |
| 9714 | 3.9873981  | 9747 | 3.9888710  | 9780 | 3.9903389  |
| 9715 | 3.9874428  | 9748 | 3.9889155  | 9781 | 3.9903833  |
| 9716 | 3.9874875  | 9749 | 3.9889601  | 9782 | 3.9904277  |
| 9717 | 3.9875322  | 9750 | 3.9890046  | 9783 | 3.9904721  |
| 9718 | 3.9875769  | 9751 | 3.9890492  | 9784 | 3.9905164  |
| 9719 | 3.9876216  | 9752 | 3.9890937  | 9785 | 3.9905608  |
| 9720 | 3.9876663  | 9753 | 3.9891382  | 9786 | 3.9906052  |
| 9721 | 3.9877109  | 9754 | 3.9891828  | 9787 | 3.9906496  |
| 9722 | 3.9877556  | 9755 | 3.9892273  | 9788 | 3.9906940  |
| 9723 | 3.9878003  | 9756 | 3.9892718  | 9789 | 3.9907383  |
| 9724 | 3.9878449  | 9757 | 3.9893163  | 9790 | 3.9907827  |
| 9725 | 3.9878896  | 9758 | 3.9893608  | 9791 | 3.9908270  |
| 9726 | 3.9879343  | 9759 | 3.9894053  | 9792 | 3.9908714  |
| 9727 | 3.9879789  | 9760 | 3.9894498  | 9793 | 3.9909158  |
| 9728 | 3.9880236  | 9761 | 3.9894943  | 9794 | 3.9909601  |
| 9729 | 3.9880682  | 9762 | 3.9895388  | 9795 | 3.9910044  |
| 9730 | 3.9881128  | 9763 | 3.9895833  | 9796 | 3.9910488  |
| 9731 | 3.9881575  | 9764 | 3.9896278  | 9797 | 3.9910931  |
| 9732 | 3.9882021  | 9765 | 3.9896722  | 9798 | 3.9911374  |
| 9733 | 3.9882467  | 9766 | 3.9897167  | 9799 | 3.9911818  |
| 9734 | 3.9882913  | 9767 | 3.9897612  | 9800 | 3.9912261  |

| N.   | Logarith. | N.   | Logarith. | N.   | Logarith. |
|------|-----------|------|-----------|------|-----------|
| 9801 | 3.9912704 | 9834 | 3.9927302 | 9867 | 3.9941851 |
| 9802 | 3.9913147 | 9835 | 3.9927744 | 9868 | 3.9942291 |
| 9803 | 3.9913590 | 9836 | 3.9928185 | 9869 | 3.9942731 |
| 9804 | 3.9914033 | 9837 | 3.9928627 | 9870 | 3.9943172 |
| 9805 | 3.9914476 | 9838 | 3.9929068 | 9871 | 3.9943612 |
| 9806 | 3.9914919 | 9839 | 3.9929510 | 9872 | 3.9944051 |
| 9807 | 3.9915362 | 9840 | 3.9929951 | 9873 | 3.9944491 |
| 9808 | 3.9915805 | 9841 | 3.9930392 | 9874 | 3.9944931 |
| 9809 | 3.9916247 | 9842 | 3.9930834 | 9875 | 3.9945371 |
| 9810 | 3.9916690 | 9843 | 3.9931275 | 9876 | 3.9945811 |
| 9811 | 3.9917133 | 9844 | 3.9931716 | 9877 | 3.9946251 |
| 9812 | 3.9917575 | 9845 | 3.9932157 | 9878 | 3.9946690 |
| 9813 | 3.9918018 | 9846 | 3.9932598 | 9879 | 3.9947130 |
| 9814 | 3.9918461 | 9847 | 3.9933039 | 9880 | 3.9947569 |
| 9815 | 3.9918903 | 9848 | 3.9933480 | 9881 | 3.9948009 |
| 9816 | 3.9919345 | 9849 | 3.9933921 | 9882 | 3.9948448 |
| 9817 | 3.9919788 | 9850 | 3.9934362 | 9883 | 3.9948888 |
| 9818 | 3.9920230 | 9851 | 3.9934803 | 9884 | 3.9949327 |
| 9819 | 3.9920673 | 9852 | 3.9935244 | 9885 | 3.9949767 |
| 9820 | 3.9921115 | 9853 | 3.9935685 | 9886 | 3.9950206 |
| 9821 | 3.9921557 | 9854 | 3.9936126 | 9887 | 3.9950645 |
| 9822 | 3.9921999 | 9855 | 3.9936566 | 9888 | 3.9951085 |
| 9823 | 3.9922441 | 9856 | 3.9937007 | 9889 | 3.9951524 |
| 9824 | 3.9922884 | 9857 | 3.9937448 | 9890 | 3.9951963 |
| 9825 | 3.9923326 | 9858 | 3.9937888 | 9891 | 3.9952402 |
| 9826 | 3.9923768 | 9859 | 3.9938329 | 9892 | 3.9952841 |
| 9827 | 3.9924210 | 9860 | 3.9938769 | 9893 | 3.9953280 |
| 9828 | 3.9924651 | 9861 | 3.9939210 | 9894 | 3.9953719 |
| 9829 | 3.9925093 | 9862 | 3.9939650 | 9895 | 3.9954158 |
| 9830 | 3.9925535 | 9863 | 3.9940090 | 9896 | 3.9954597 |
| 9831 | 3.9925977 | 9864 | 3.9940531 | 9897 | 3.9955036 |
| 9832 | 3.9926419 | 9865 | 3.9940971 | 9898 | 3.9955474 |
| 9833 | 3.9926860 | 9866 | 3.9941411 | 9899 | 3.9955913 |
| 9834 | 3.9927302 | 9867 | 3.9941851 | 9900 | 3.9956352 |

| N.   | Logarith. | N.   | Logarith. | N.    | Logarith. |
|------|-----------|------|-----------|-------|-----------|
| 9901 | 3.9956791 | 9934 | 3.9971242 | 9967  | 3.9985645 |
| 9902 | 3.9957229 | 9935 | 3.9971679 | 9968  | 3.9986080 |
| 9903 | 3.9957668 | 9936 | 3.9972116 | 9969  | 3.9986516 |
| 9904 | 3.9958106 | 9937 | 3.9972553 | 9970  | 3.9986952 |
| 9905 | 3.9958545 | 9938 | 3.9972990 | 9971  | 3.9987387 |
| 9906 | 3.9958983 | 9939 | 3.9973427 | 9972  | 3.9987823 |
| 9907 | 3.9959422 | 9940 | 3.9973864 | 9973  | 3.9988258 |
| 9908 | 3.9959860 | 9941 | 3.9974301 | 9974  | 3.9988694 |
| 9909 | 3.9960298 | 9942 | 3.9174738 | 9975  | 3.9989129 |
| 9910 | 3.9960737 | 9943 | 3.9975174 | 9976  | 3.9989564 |
| 9911 | 3.9961175 | 9944 | 3.9975611 | 9977  | 3.9990000 |
| 9912 | 3.9961613 | 9945 | 3.9976048 | 9978  | 3.9990435 |
| 9913 | 3.9962051 | 9946 | 3.9976485 | 9979  | 3.9990870 |
| 9914 | 3.9962489 | 9947 | 3.9976921 | 9980  | 3.9991305 |
| 9915 | 3.9962927 | 9948 | 3.9977358 | 9981  | 3.9991741 |
| 9916 | 3.9963365 | 9949 | 3.9977794 | 9982  | 3.9992176 |
| 9917 | 3.9963803 | 9950 | 3.9978231 | 9983  | 3.9992611 |
| 9918 | 3.9964241 | 9951 | 3.9978667 | 9984  | 3.9993046 |
| 9919 | 3.9964679 | 9952 | 3.9979104 | 9985  | 3.9993481 |
| 9920 | 3.9965117 | 9953 | 3.9979540 | 9986  | 3.9993916 |
| 9921 | 3.9965554 | 9954 | 3.9979976 | 9987  | 3.9994350 |
| 9922 | 3.9965992 | 9955 | 3.9980413 | 9988  | 3.9994785 |
| 9923 | 3.9966430 | 9956 | 3.9980849 | 9989  | 3.9995220 |
| 9924 | 3.9966868 | 9957 | 3.9981285 | 9990  | 3.9995655 |
| 9925 | 3.9967305 | 9958 | 3.9981721 | 9991  | 3.9996090 |
| 9926 | 3.9967743 | 9959 | 3.9982157 | 9992  | 3.9996524 |
| 9927 | 3.9968180 | 9960 | 3.9982593 | 9993  | 3.9996959 |
| 9928 | 3.9968618 | 9961 | 3.9983029 | 9994  | 3.9997393 |
| 9929 | 3.9969055 | 9962 | 3.9983465 | 9995  | 3.9997828 |
| 9930 | 3.9969492 | 9963 | 3.9983901 | 9996  | 3.9998262 |
| 9931 | 3.9969930 | 9964 | 3.9984337 | 9997  | 3.9998697 |
| 9932 | 3.9970367 | 9965 | 3.9984773 | 9998  | 3.9999131 |
| 9933 | 3.9970804 | 9966 | 3.9985209 | 9999  | 3.9999566 |
| 9934 | 3.9971242 | 9967 | 3.9985645 | 10000 | 4.0000000 |

