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► **To cite this version:**

Denis Roegel. A sketch of Mendizábal y Tamborrel's table of logarithms (1891). [Research Report] 2010. inria-00543953

HAL Id: inria-00543953

<https://inria.hal.science/inria-00543953>

Submitted on 6 Dec 2010

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Introduction

In 1891, the same year the French *Service géographique de l'armée* published an abridged version [31] of the *Tables du cadastre* [28], Joaquín de Mendizábal y Tamborrel (1852–1926) also published a table of logarithms of numbers and trigonometric functions, based on the centesimal division of the circle, with a similar accuracy, but obtained independently [10].¹

Mendizábal was a Mexican engineer and the author of several books, in particular a table of multiplication extending Crelle's table (*Tablas de multiplicar*, 1903) and a treatise on goniometry (*Tratado elemental de goniometria*). A short biographical notice given in his obituary says that he “was an enthusiastic advocate of the decimal division of the circle and of time.” [2]

In his table of logarithms published in French in Paris, Mendizábal chose as unit the “gone,” which is equal to one circumference.² Consequently, the microgon (*microgone*, in French) is equal to $\frac{360^\circ}{1000000}$ and Mendizábal denotes it by “ γ .”

Mendizábal's book starts with a two-page foreword, followed by a 3-page list of subscribers. Then comes the first page of tables which gives the logarithms of numbers 1–999. The next 58 pages give the logarithms of numbers 10000–124999 with 2000 logarithms per page, except for the last page which only contains 1000 logarithms. All these logarithms are given to 8 decimal places. From 100000 to 124999, a dot indicates whether the last digit was forced or not. For instance, the table gives $\log 106000 = (5.)02530587.$, but $\log 106001 = (5.)02530996$, the first value being rounded upwards, but not the second. Some digits also appear in bold, meaning that the leading group of three or four digits is different than the one given (or in application) at the beginning of the line. For instance, $\log 100023 = (5.)00009988$, but $\log 100024 = (5.)\underline{0001}0422$. The bold digit hints to the change in the underlined prefixes.

The second part of the tables gives the logarithms of the sines, cosines, tangents and cotangents from 0 to 125000^γ (45°) by steps of microgons. Each page covers one milligon and contains one thousand values. The characteristics are given at the top and at the left of the abbreviations Sin., Cos., etc. The other tables published in 1891 by the *Service géographique de l'armée* gave the logarithms for every $10''$ of the centesimal division of the quadrant, so that the steps of Mendizábal's tables are 2.5 times smaller than the ones of the tables from the *Service géographique de l'armée*. Consequently, every fifth value of Mendizábal's table is also a value in the table of the *Service géographique de l'armée*.

Eight decimals are given for the angles up to 25000^γ (9°). From 25000^γ to 125000^γ , only seven decimals are given, except every 10^γ where 8 places are given. From 25000^γ to 125000^γ , last forced digits are shown with an appended dot. The values of the logarithms are displayed differently depending on the section of the table, and bold digits indicate either dropped digits (after 25000^γ in the first column of logarithms), or changes in the

¹Mendizábal's table was reviewed by Harold Jacoby in 1892 [19]. A description of the tables in the general context of decimalization was also published by Mendizábal in 1897 [11].

²In 1900, Rey-Pailhade called “cir” the angle for a full circumference in his much smaller table of 4-place logarithms for a similar division of the circle [12]. Such a division had briefly been used by Briggs in his *Trigonometria Britannica* [6].

leading digits, as for the logarithms of numbers. There are two special cases of bold digits: in the first seven pages of tangents, the bold digits refer to changes with respect to the prefix found in the left part of the table; and in the first page of sines and cotangents, the bold digits refer to changes with respect to the characteristic which is given in the margin.

The pages giving the logarithms of numbers from 100000 to 124999 also give the 9th to 12th digits of the rounded logarithms of the sines of the first 25000 decimilligons, plus 10. More exactly, facing n , we have the digits of $10 + \log \sin[(n - 10000) \times 100^\gamma]$. The first value, is 9783, because $10 + \log \sin\left(\frac{2\pi}{10000}\right) = 6.7981798397826\dots$, or $\log \sin\left(\frac{2\pi}{10000}\right) = \bar{4}.7981798397826\dots$. These values extend the values given in the second part of the tables, every 100 values. For instance, we have $\log \sin 100^\gamma = (\bar{4}).79817984$ and the complete value of $\log \sin 100^\gamma$ with 12 places can then be reconstructed, in this case taking care of the fact that the last digit was forced.

At the bottom of the pages of the logarithms of numbers, we find the values of $S(x) = \log \frac{\sin(x \times 1^\gamma)}{x}$ and $T(x) = \log \frac{\tan(x \times 1^\gamma)}{x}$. These values are given for angles ranging from 1 to 12499 $^\gamma$. For instance, for 2407, we have $S(2407) = -6 + 0.798163312\dots$ and $T(2407) = -6 + 0.798212981\dots$, and in the tables we find the values 331 and 298 which are the 6th to 8th digits of S and T , and separately the prefixes $\bar{6}.79816$ and $\bar{6}.79821$. The prefixes are given for a range of 100 values and the last digits may have different values in the range, a fact which is then indicated. We have kept the French “*ou*” which is used for “or” in this case (see for instance pages 1200–1399 of the logarithms of numbers). S and T are given with 8 decimal places, but later prefixes have only four decimal places.³

Each value in the trigonometric table corresponds to four different angles, in each of the four quadrants. After the abbreviations Sin., Tang., etc., there are three groups of numbers. These groups indicate the milligons corresponding to the second, third, and fourth quadrants. For instance, on the page with heading 021, we find

$$\bar{1}.13023498 = \log \tan \left\{ \begin{array}{l} 0^\gamma.021352\dots \text{ 1st quadrant} \\ -0^\gamma.478648\dots \text{ 2nd} \\ +0^\gamma.521352\dots \text{ 3rd} \\ -0^\gamma.978648\dots \text{ 4th} \end{array} \right\} = \log \cot \left\{ \begin{array}{l} 0^\gamma.228648 \\ -0^\gamma.271352 \\ +0^\gamma.728648 \\ -0^\gamma.771352 \end{array} \right\}$$

This is read as follows. First, we locate $0^\gamma.021352$ in the $\log \tan$ table (left side, right column), and we find $\log \tan 0^\gamma.021352 = \bar{1}.13023498$. We have also $\log \tan 0^\gamma.021352 = \log \cot 0^\gamma.228648$. At the top of the tangent column, we have the three numbers -478 , $+521$, and -978 , from which we deduce the other three angles having the same $\log \tan$. Similarly, the numbers at the bottom of the column give the three other angles having the same $\log \cot$.

There are also interpolation tables in the margins of both parts, but they have been omitted in our reconstruction.

According to Mendizábal’s foreword, the logarithms of the numbers from 1 to 1200 were taken from the tables of Callet [8], and those from 100000 to 108000 from the tables of Schrön [30].⁴ All the other values were computed by Mendizábal to 10 places.

³For a review of tables of S , T , and similar functions, see Archibald [3], Miller [22], and Fletcher *et al.* [14, pp. 203–204].

⁴Mendizábal does not give precise editions, and he may have used other editions than the ones we are citing.

Mendizábal came to France in late 1888 in order to get his tables printed. He took advantage of his stay in France to compare his tables with those of the French cadastre, and this enabled him to find a few errors in them. Finally, in 1891, Mendizábal was able to compare his tables with those of the *Service géographique de l'armée* and he only found eight errors in them [13]. In some cases, having usually only computed the logarithms to 10 places and not knowing if the values had been forced or not, he took them from the authority of the *Service géographique de l'armée*.

As Ernest W. Brown wrote in his review of Mendizábal's table of multiplication, “[t]he author is to be congratulated on the completion of a task which must have been exceedingly tedious and uninteresting, but which will undoubtedly be highly appreciated by those who have much to do with calculations in which these tables can be of service.”[7] and this would certainly apply to the table of logarithms.

After these tables, Mendizábal worked on more extensive tables, in particular tables giving the logarithms from 1 to 200000 [11]. These tables were however apparently never published.

Anybody who wishes to check tables such as those published in 1891, and in particular anybody who tries to compare these two tables, will soon realize that the best way to do so is not to compare two such different tables with each other, but to compare each of them with a very close reconstruction, and this was our aim and it is now possible and easy. We have recomputed Mendizábal's tables, but we provide only a sketch of their layout, which is sufficient for a comparison with the original work. The computations were done with the GNU `mpfr` floating point library developed at INRIA [15]. All the values in the tables are correctly rounded.

Aside from the interpolation tables which were not reproduced, we have also omitted the first five pages of the original work.

We were not able to compare all the values in the table, but we have still only found minor errors. Mendizábal gives 00 for the last two digits of $\log \cos 24^\circ$, but they should be 99 (with the first 9 bold). The last five digits of $\log \sin$ should be 00913 and not 00912 (the first 0 being bold). These errors were found accidentally, while working on the positioning of the bold digits, and there are probably other similar ones. The only difference we have noticed in our samples of S and T is the value of S for 999 for which Mendizábal has $\bar{6}.79817701$ rounded to 8 places, and we have $\bar{6}.79817702$. The correct value is $\bar{6}.798177016523\dots$. There are probably other errors like this one in the original tables. Only one error seems to have been published previously: Comrie mentions that $\log 101597$ was erroneously given as $\dots 8083$ instead of $\dots 8088$ [9], [14, p. 877].

References

The following list covers the most important references⁵ related to Mendizábal's tables. Not all items of this list are mentioned in the text, and the sources which have not been seen are marked so. We have added notes about the contents of the articles in certain cases.

- [1] Anonymous. L'extension du système décimal aux mesures du temps et des angles. *Ciel et Terre*, 18:601–608, 1898.
- [2] Anonymous. Obituary of J. de Mendizábal-Tamborrel. *Monthly Notices of the Royal Astronomical Society*, 87:258–259, 1927.
- [3] Raymond Clare Archibald. Review of “Coast and geodetic survey, *Table of S and T Values*, 1934”. *Mathematical Tables and other Aids to Computation*, 1(3):83–85, 1943.
- [4] Raymond Clare Archibald. Tables of trigonometric functions in non-sexagesimal arguments. *Mathematical Tables and other Aids to Computation*, 1(2):33–44, April 1943. [Mendizábal's tables are mentioned on page 40.]
- [5] Raymond Clare Archibald. J. T. Peters, *Siebenstellige Logarithmentafel*. *Mathematical Tables and other Aids to Computation*, 1(5):143–146, April 1944.
- [6] Henry Briggs and Henry Gellibrand. *Trigonometria Britannica*. Gouda: Pieter Rammazeyn, 1633. [The tables were reconstructed by D. Roegel in 2010. [27]]
- [7] Ernest W. Brown. Review of “J. de Mendizábal y Tamborrel, *Tablas de Multiplicar*”. *Bulletin of the American Mathematical Society*, 10(10):516–517, 1904.
- [8] Jean-François Callet. *Tables portatives de logarithmes, etc.* Paris: Firmin Didot, 1795. [There have been numerous later printings of these tables.]
- [9] Leslie John Comrie. Errata in J. de Mendizábal Tamborrel's table. *Mathematical Tables and other Aids to Computation*, 2(20):351, 1947.
- [10] Joaquín de Mendizábal y Tamborrel. *Tables des Logarithmes à huit décimales des nombres de 1 à 125000, et des fonctions goniométriques sinus, tangente, cosinus et cotangente de centimiligone en centimiligone et de microgone en microgone pour les 25000 premiers microgones, et avec sept décimales pour tous les autres microgones*. Paris: Hermann, 1891.

⁵**Note on the titles of the works:** Original titles come with many idiosyncrasies and features (line splitting, size, fonts, etc.) which can often not be reproduced in a list of references. It has therefore seemed pointless to capitalize works according to conventions which not only have no relation with the original work, but also do not restore the title entirely. In the following list of references, most title words (except in German) will therefore be left uncapitalized. The names of the authors have also been homogenized and initials expanded, as much as possible.

The reader should keep in mind that this list is not meant as a facsimile of the original works. The original style information could no doubt have been added as a note, but we have not done it here.

- [11] Joaquín de Mendizábal y Tamborrel. La division décimale de la circonférence et du temps. *Memorias de la Sociedad Científica “Antonio Alzate”*, X(37):285–291, 1896/1897.
- [12] Joseph Charles François de Rey-Pailhade. Table des logarithmes à quatre décimales de toutes les lignes trigonométriques dans la division décimale du cercle entier. *Bulletin de la Société de Géographie de Toulouse*, 19:94–103, 1900. [mentioned at [4, p. 41]]
- [13] Mathematical tables—Errata. *Mathematical Tables and other Aids to Computation*, 1(3):85, 1943.
- [14] Alan Fletcher, Jeffery Charles Percy Miller, Louis Rosenhead, and Leslie John Comrie. *An index of mathematical tables*. Oxford: Blackwell scientific publications Ltd., 1962. [2nd edition (1st in 1946), 2 volumes]
- [15] Laurent Fousse, Guillaume Hanrot, Vincent Lefèvre, Patrick Pélissier, and Paul Zimmermann. MPFR: A multiple-precision binary floating-point library with correct rounding. *ACM Transactions on Mathematical Software*, 33(2), 2007.
- [16] Albert Hatzfeld. La division décimale du cercle. *Revue scientifique*, 48:655–659, 1891.
- [17] James Henderson. *Bibliotheca tabularum mathematicarum, being a descriptive catalogue of mathematical tables. Part I: Logarithmic tables (A. Logarithms of numbers)*, volume XIII of *Tracts for computers*. London: Cambridge University Press, 1926.
- [18] Samuel Herrick, Jr. Natural-value trigonometric tables. *Publications of the Astronomical Society of the Pacific*, 50(296):234–237, 1938.
- [19] Harold Jacoby. A new logarithmic table. *Bulletin of the New York Mathematical Society*, 2(2):33–34, 1892.
- [20] Charles E. Manierre. The decimal system for time and arc for use in navigation. *Popular Astronomy*, 28:99–103, 1920. [Only on practical aspects of a switch to a decimal system, not historical ones.]
- [21] Jeffery Charles Percy Miller. The decimal subdivision of the degree. *The Mathematical Gazette*, 26(272):226–230, 1942. [On the available tables with a decimal subdivision of the degree, and in particular on Buckingham’s manual of gear design (1935), which contains 8-figure values of the trigonometric functions for such a subdivision.]
- [22] Jeffery Charles Percy Miller. Earliest tables of S and T . *Mathematical Tables and other Aids to Computation*, 1(9):371, 1945.
- [23] José Omar Moncada Maya, Irma Escamilla Herrera, Gabriela Cisneros Guerrero, and Marcela Meza Cisneros. *Bibliografía geográfica mexicana: la obra de los ingenieros geógrafos*. Mexico: Instituto de Geografía, UNAM, 1999. [pp. 70–72 are on Mendizábal and give a detailed bibliography of his writings]

- [24] J. P. y M. Tables des logarithmes à huit décimales, etc. (review). *Memorias de la Sociedad Científica “Antonio Alzate”*, pages 62–64, 1891/1892. [review of [10]]
- [25] Lucero Morelos Rodríguez. Reseña de “A peso el kilo. Historia del sistema métrico decimal en México” de H. Vera. *Investigaciones Geográficas*, 69:132–135, 2009. [This is a review of H. Vera’s book on the history of the metric system in Mexico.]
- [26] Denis Roegel. A reconstruction of the “Tables des logarithmes à huit décimales” from the French “Service géographique de l’armée” (1891). Technical report, LORIA, Nancy, 2010. [This is a reconstruction of [31].]
- [27] Denis Roegel. A reconstruction of the tables of Briggs and Gellibrand’s *Trigonometria Britannica* (1633). Technical report, LORIA, Nancy, 2010. [This is a recalculation of the tables of [6].]
- [28] Denis Roegel. The great logarithmic and trigonometric tables of the French Cadastre: a preliminary investigation. Technical report, LORIA, Nancy, 2010.
- [29] Donald Harry Sadler. New geometry for Germany. *The Mathematical Gazette*, 22(248):73–76, February 1938. [Discusses plans for introducing a decimal division of the circle in Germany.]
- [30] Ludwig Schrön. *Siebenstellige gemeine Logarithmen der Zahlen von 1 bis 108000 und der Sinus, Cosinus, Tangenten und Cotangenten aller Winkel des Quadranten von 10 zu 10 Secunden*. Braunschweig: Friedrich Vieweg und Sohn, 1864. [5th edition]
- [31] Service géographique de l’Armée. *Tables des logarithmes à huit décimales des nombres entiers de 1 à 120000, et des sinus et tangentes de dix secondes en dix secondes d’arc dans le système de la division centésimale du quadrant publiée par ordre du Ministre de la guerre*. Paris: Imprimerie nationale, 1891. [Reprinted by the Institut Géographique National in 1944 and 1964, and reconstruction by D. Roegel, 2010.[26]]
- [32] James K. Whittemore. The calculation of logarithms. *The Annals of Mathematics*, Second Series 9(1):1–28, October 1907. [p. 19 mentions Mendizábal’s table about the reliability of interpolation.]

000 079

1000

1100

Main table of 1000-1100 with columns 0-9 and rows 0-9. Each row contains 10 numbers. The first column has a large number (1000-1100) and a smaller number (0-9).

Continuation of the table for numbers 00100-00119, with columns 00100-00119 and rows 0-9.

1200

Table with 10 columns (N, 0-9) and 10 rows (0-9) for the 1200 section. Each cell contains a numerical value.

1300

Table with 10 columns (N, 0-9) and 10 rows (0-9) for the 1300 section. Each cell contains a numerical value.

Table with 10 columns (01200-01299) and 10 rows (0-9) for the 1200 section. Each cell contains a numerical value.

Table with 10 columns (01300-01399) and 10 rows (0-9) for the 1300 section. Each cell contains a numerical value.

1400

1500

Main table of trigonometric values for angles 1400 to 1500, including sine, cosine, and other functions.

Continuation of the trigonometric table for angles 1500 to 1600, including sine, cosine, and other functions.

1600

1700

Main table of trigonometric values for angles 1600 to 1700, organized in columns for each degree and rows for minutes. Includes large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 on the left side of the table.

1800

1900

Main table of trigonometric values for 1800 and 1900, organized in columns for degrees and minutes.

Table of trigonometric values for angles from 0 to 9 degrees, with columns labeled 00180 to 00199.

2000

2100

Main table of astronomical data with columns for years (2000, 2100) and rows for months (0-9). Each row contains 10 columns of numerical values.

Summary table with columns for years (002000 to 002029) and rows for months (0-9). Each row contains 10 columns of numerical values.

2200

Table with 10 columns (0-9) and 10 rows (0-9) for the 2200 section. Each cell contains a numerical value representing a trigonometric function.

2300

Table with 10 columns (0-9) and 10 rows (0-9) for the 2300 section. Each cell contains a numerical value representing a trigonometric function.

2400

2500

Main table of logarithmic values for numbers 2400-2500, organized in columns 0-9 and rows 0-9. Includes large numbers like 38021124, 39216, 40205, etc.

Continuation of the logarithmic table for numbers 00240 to 00259, organized in columns 0-9 and rows 0-9.

2600

2700

Main table of trigonometric values for angles 2600 to 2700. Columns represent angles in degrees and minutes, and rows represent values for sine, cosine, tangent, and cotangent. The table is organized into sections for each 10-degree interval (2600-2610, 2610-2620, etc.), with each section containing 10 rows of values.

Summary table at the bottom of the page, providing values for angles from 0 to 9 degrees in increments of 0.5 degrees. Columns are labeled from 00260 to 00279, and rows are labeled from 0 to 9.

2800

2900

Main table of logarithmic trigonometric values for angles 2800 to 2900. Columns represent minutes (0-9) and seconds (0-9). Rows represent angles in degrees (2800-2900). Values include sine, cosine, tangent, and cotangent.

3000

3100

Main table of trigonometric values for angles 3000 to 3100, including sine, cosine, and other functions.

3200

3300

Main table of trigonometric values for angles 3200 to 3300, including sine, cosine, and tangent values for various angles.

Summary table of trigonometric values for angles 0 to 9, including sine, cosine, and tangent values for various angles.

3400

Table for 3400 with columns N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows 3400-3499.

3500

Table for 3500 with columns N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows 3500-3599.

Table for 3600 with columns 00340 to 00349 and rows 0-9.

Table for 3700 with columns 00350 to 00359 and rows 0-9.

Table for 3800 with columns 00360 to 00369 and rows 0-9.

3600

3700

Main table of logarithmic trigonometric values for angles 3600 to 3700. Columns include N, 0-9, and 10-19. Rows are grouped by angle (e.g., 3600, 3610, 3620, etc.).

Continuation of the table for angles 3800 to 3900, with columns labeled 00360 to 00379.

3800

3900

Main table of numbers from 3800 to 3999, organized in columns with row indices and large digit markers (0-9).

Continuation of the number table from 0380 to 0399, organized in columns with row indices and large digit markers (0-9).

4000

4100

Main table of trigonometric values for angles 4000 to 4100, organized in columns for each angle and rows for minutes. Includes large vertical numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 on the left side of the table.

4200

4300

Main table of trigonometric values for angles 4200 to 4300, including columns for degrees and minutes, and rows for various trigonometric functions.

Summary table at the bottom of the page, providing values for angles from 0 to 9 degrees in increments of 15 minutes.

4400

4500

Main table of logarithmic trigonometric values for angles 4400 to 4500. Columns include N (North), O (Oblique), 1-9 (Degrees), and 10 (Seconds). Rows are grouped by angle (e.g., 4400, 4410, 4420, etc.).

Continuation of the table for angles 0 to 9 degrees. Columns include 0-9 (Degrees) and 10 (Seconds).

4600

4700

Main table of trigonometric values for angles 4600 to 4700, including columns for degrees, minutes, seconds, and various trigonometric functions like sine, cosine, tangent, and secant.

4800

4900

Main table of logarithmic trigonometric values for angles 4800 to 4900. Columns include N, O, 1, 2, 3, 4, 5, 6, 7, 8, 9 for both 4800 and 4900 series.

Summary table of values for angles 4800 to 4900, organized in columns labeled 00480 to 00499.

5000

698 715

5100

Main table of logarithmic trigonometric values for angles 5000 to 5100. Columns include N, 0-9, and 5000-5100. Rows are grouped by angle (0-9 degrees) and sub-angle (0-9 minutes).

Summary table at the bottom of the page, organized in a grid with columns labeled 00500 to 00519 and rows labeled 0 to 9.

5200

5300

Main table of trigonometric values for angles 5200 to 5300. Columns represent angles in degrees (0-9) and minutes (0-9). Rows represent values for sine, cosine, tangent, and cotangent.

Continuation of the trigonometric table for angles 5300 to 5400, following the same column and row structure as the previous section.

5600

5700

Main table containing numerical data for 5600 and 5700, organized in columns with sub-headers 0-9 and rows with sub-headers 0-9. The table is split into two main sections for 5600 and 5700, each with 10 columns and 10 rows of data.

5800

5900

Main table containing numerical data for years 5800 and 5900, organized in columns and rows with various sub-sections.

6000

6100

Main table of logarithmic trigonometric functions for angles 6000 to 6999. The table is organized into columns for the function name (N, S, C, T, etc.) and rows for the angle (1-9). It contains numerical values for sine, cosine, tangent, cotangent, secant, and cosecant.

Continuation of the logarithmic trigonometric function table, covering angles from 6999 to 9999. The layout is identical to the previous table, with columns for function names and rows for angle values.

6200

Table with columns N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. Rows 6200-6299. Includes large numbers like 70239169, 39869, 40570, etc.

6300

Table with columns N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. Rows 6300-6399. Includes large numbers like 79934055, 34744, 35434, etc.

6400

6500

Main table of trigonometric values for angles 6400 to 6500, including columns for N, O, 1, 2, 3, 4, 5, 6, 7, 8, 9 and corresponding values.

Continuation of the trigonometric table for angles 6500 to 6599, including columns for 00640 to 00659 and corresponding values.

6600

6700

Main table of trigonometric values for angles 6600 to 6700, organized in columns 0-9 and rows 0-9. Includes sub-sections for 6600, 6700, and 6800.

Summary table at the bottom of the page listing values for angles 6600, 6661, 6662, 6663, 6664, 6665, 6666, 6667, 6668, 6669, 6670, 6671, 6672, 6673, 6674, 6675, 6676, 6677, 6678, 6679.

7000

7100

Main table containing numerical data for years 7000-7100, organized in columns and rows with sub-headers N, O, 1, 2, 3, 4, 5, 6, 7, 8, 9.

7200

7300

Main table of trigonometric values for angles 7200 to 7300. Columns represent angles from 0 to 9 degrees. Rows represent values for sine, cosine, tangent, and cotangent. Includes a large '0' watermark.

Continuation of the trigonometric table for angles 7300 to 7399. Columns represent angles from 0 to 9 degrees. Rows represent values for sine, cosine, tangent, and cotangent.

7400

7500

Main table of trigonometric values for angles 7400 to 7500. Columns represent angles in degrees (N) and minutes (0-9). Rows represent values for sine, cosine, tangent, and cotangent.

S. 6.7980 2 ou 1

T. 6.798 49 ou 50

S. 6.79801

T. 6.7985 0 ou 1

Continuation of the trigonometric table for angles 7500 to 7600, including sine, cosine, tangent, and cotangent values.

7600

7700

Main table of logarithmic trigonometric values for angles 7600 to 7700. Columns include N (North), O (Oblique), and 1-9 (degrees). Rows are grouped by angle (e.g., 7600, 7601, etc.).

Summary table of values for angles 7600 to 7700, organized by degree (00 to 09) and minute (00 to 09).

7800

7900

Main table of trigonometric values for angles 7800 to 7900. Columns represent angles in degrees (0-9) and minutes (0-9). Rows represent values for sine, cosine, tangent, and cotangent.

Continuation of the trigonometric table for angles 7900 to 8000, following the same column and row structure as the previous section.

8000

Table with 10 columns (N, 0-9) and 10 rows (8000-8999) containing numerical data.

8100

Table with 10 columns (N, 0-9) and 10 rows (8100-8999) containing numerical data.

Table with 10 columns (00800-00819) and 10 rows (0-9) containing numerical data.

8200

8300

Main table of trigonometric values for angles 8200 to 8300. Columns represent angles in degrees and minutes, and rows represent values for sine, cosine, tangent, and cotangent.

Table of trigonometric values for angles 8200 to 8299. Columns represent angles in degrees and minutes, and rows represent values for sine, cosine, tangent, and cotangent.

Table of trigonometric values for angles 8300 to 8399. Columns represent angles in degrees and minutes, and rows represent values for sine, cosine, tangent, and cotangent.

8400

Table with 10 columns (N, 0-9) and 10 rows (8400-8499) containing numerical values for the 8400 section.

8500

Table with 10 columns (N, 0-9) and 10 rows (8500-8599) containing numerical values for the 8500 section.

Summary table with 10 columns (00840-00859) and 10 rows (8-9) containing numerical values.

8800

8900

Main table of logarithmic trigonometric values for angles 8800 to 8900. Columns include N, 0-9, and 0-9. Rows are grouped by angle (e.g., 8800, 8810, 8820, etc.).

Summary table of values for angles 8800 to 8900, organized in columns labeled oo880 through oo899.

9000

9100

Main table of trigonometric values for angles 9000 to 9100, including sine, cosine, and other functions.

Continuation of the trigonometric table for angles 9000 to 9100, showing values for various trigonometric functions.

9200

Table with 10 columns (0-9) and 9 rows (0-9) for the 9200 section. Each cell contains a 5-digit number.

9300

Table with 10 columns (0-9) and 9 rows (0-9) for the 9300 section. Each cell contains a 5-digit number.

Table with 10 columns (0-9) and 9 rows (0-9) for the 9400 section. Each cell contains a 5-digit number.

Table with 10 columns (0-9) and 9 rows (0-9) for the 9500 section. Each cell contains a 5-digit number.

9600

9700

Main table of trigonometric values for angles 9600 to 9700, including sine, cosine, and tangent values for various angles.

Summary table at the bottom of the page, likely providing reference values or indices for the main table.

10000

10100

Main table of trigonometric values for angles 10000 to 10100. Columns include Sin, N, and values for angles 1 to 9. The table is organized into two main sections, 10000 and 10100, each with a sub-section for angles 1 through 9. Large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed vertically in the left margin of each sub-section.

Continuation of the trigonometric table for angles 10100 to 10199. Columns include Sin, N, and values for angles 0 to 9. Large numbers 0 through 9 are placed vertically in the left margin.

0086 0170

10200

10300

Main table of logarithmic trigonometric values for angles 10200 to 10300. Columns include Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 for both the 10200 and 10300 sections.

Index table for the main table, listing values for 01020 to 01039 and 01030 to 01039.

10400

10500

Main table of trigonometric values for 10400 and 10500, including columns for Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Continuation of the trigonometric table with columns 01040 to 01050 and 01050 to 01059.

10600

0253 0334

10700

Main table of trigonometric values for 10600 and 10700. Columns are labeled Sin. N and 0-9. Rows are numbered 0-9 for each section.

10800

10900

Main table of trigonometric values for angles 10800 to 10900, including sine, cosine, and other functions.

Summary table of trigonometric values for angles 0 to 90 degrees, including sine, cosine, and other functions.

0413 0492

11000

11100

Main table of astronomical data with columns for Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows for values 5295 to 3686.

Continuation of the astronomical data table with columns for 01100 to 01119 and rows for values 0 to 9.

11200

11300

Main table of logarithmic trigonometric values for angles 11200 to 11300. Columns include Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. Values are arranged in a grid with some cells containing large numbers like 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Continuation of the table with columns labeled 01120, 01121, 01122, 01123, 01124, 01125, 01126, 01127, 01128, 01129, 0, 01130, 01131, 01132, 01133, 01134, 01135, 01136, 01137, 01138, 01139.

0569 0644

11400

Table with 10 columns (Sin, N, 0-9) and 10 rows (7318-8079). Contains trigonometric values for angles 11400-11490.

11500

Table with 10 columns (Sin, N, 0-9) and 10 rows (11500-12379). Contains trigonometric values for angles 11500-11590.

Index table with 10 columns (01140-01159) and 10 rows (0-9). Lists page numbers for various angles.

11600

11700

Main table of trigonometric values for angles 11600 to 11700. Columns include Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 for both the 11600 and 11700 sections.

Continuation of the trigonometric table for angles 11600 to 11700, showing values for Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

0718 0791

11800

11900

Main table of logarithmic values for 11800 and 11900, organized in columns with headers Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Continuation of the logarithmic table for values 01180 to 01199, organized in columns with headers 01180, 01181, 01182, 01183, 01184, 01185, 01186, 01187, 01188, 01189, 01190, 01191, 01192, 01193, 01194, 01195, 01196, 01197, 01198, 01199.

12000

12100

Main table of logarithmic trigonometric values for angles 12000 to 12099. Columns include Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Continuation of the table for angles 01200 to 01219. Columns include 01200, 01201, 01202, 01203, 01204, 01205, 01206, 01207, 01208, 01209, 0, 01210, 01211, 01212, 01213, 01214, 01215, 01216, 01217, 01218, 01219.

0863 0934

12200

12300

Main table of trigonometric values for 12200 and 12300, including columns for Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Continuation of the trigonometric table for values 01220 to 01239.

12400

12450

Main table of logarithmic trigonometric values for angles 12400 to 12450. Columns include Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, Sin, N, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

S. 6.7977

T. 6.7990

Table of values for S. 6.7977 and T. 6.7990, showing columns for S, T, and various numerical values.

S. 6.79817

T. 6.79817

S. 6.79817

T. 6.79817 ou 8

Table of values for S. 6.79817, T. 6.79817, S. 6.79817, and T. 6.79817 ou 8, showing columns for S, T, and various numerical values.

Table of values for S. 6.79817, T. 6.79817, S. 6.79817, and T. 6.79817 ou 8, showing columns for S, T, and various numerical values.

Table of values for S. 6.79817, T. 6.79817, S. 6.79817, and T. 6.79817 ou 8, showing columns for S, T, and various numerical values.

Table of values for S. 6.79817, T. 6.79817, S. 6.79817, and T. 6.79817 ou 8, showing columns for S, T, and various numerical values.

Sin. +499 -500 -999

000

Tang. -499 +500 -999

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A and rows 0-9. It contains trigonometric values for various angles.

Cos. -250 -749 +750

249

Cot. -250 +749 -750

0. ou I. Cos. -499 -500 +999

000

Cot. -499 +500 -999

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

0. ou I. Sin. +250 -749 -750

249

Tang. -250 +749 -750

3. ou 2. Sin. +498 -501 -998

001

3. ou 2. Tang. -498 +501 -998

Table with 18 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 100 rows of numerical data. Includes large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 in the left margin.

3. ou 2. Cos. -251 -748 +751

248

3. ou 2. Cot. -251 +748 -751

I. Cos. -498 -501 +998

001

2. ou 1. Cot. -498 +501 -998

Table with columns labeled 0 to A and rows labeled 0 to A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin to indicate groups of rows.

I. Sin. +251 -748 -751

248

2. ou 1. Tang. -251 +748 -751

2. Sin. +497 -502 -997

002

2. Tang. -497 +502 -997

Table with 18 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 100 rows of numerical data.

2. Cos. -252 -747 +752

247

2. Cot. -252 +747 -752

I. Cos. -497 -502 +997

002

1. Cot. -497 +502 -997

Table with columns labeled A through A and rows labeled 0 through 9. The table contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin to indicate row groups.

I. Sin. +252 -747 -752

247

1. Tang. -252 +747 -752

2. Sin. +496 -503 -996

003

2. Tang. -496 +503 -996

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine and tangent values across various degrees.

2. Cos. -253 -746 +753

246

2. Cot. -253 +746 -753

I. Cos. -496 -503 +996

003

1. Cot. -496 +503 -996

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains trigonometric values for cosine and cotangent functions.

I. Sin. +253 -746 -753

246

1. Tang. -253 +746 -753

2. Sin. +495 -504 -995

004

2. Tang. -495 +504 -995

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine and tangent functions. Large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed vertically in the left margin to indicate groups of rows.

2. Cos. -254 -745 +754

245

2. Cot. -254 +745 -754

I. Cos. -495 -504 +995

004

1. Cot. -495 +504 -995

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

I. Sin. +254 -745 -754

245

1. Tang. -254 +745 -754

2. Sin. -494 -455 -994

005

2. Tang. -494 +505 -994

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, A. The table contains numerical values for sine and tangent functions.

2. Cos. -255 -744 +755

244

2. Cot. -255 +744 -755

I. Cos. -494 -505 +994

005

1. Cot. -494 +505 -994

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values.

2. Sin. +493 -506 -993

006

2. Tang. -493 +506 -993

Main table of trigonometric values with columns labeled A, 0, 1 through 9, and A. Includes numerical data for sine and tangent functions.

2. Cos. -256 -743 +756

243

2. Cot. -256 +743 -756

I. Cos. -493 -506 +993

006

1. Cot. -493 +506 -993

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

I. Sin. +256 -743 -756

243

1. Tang. -256 +743 -756

2. Sin. -492 -507 -992

007

2. Tang. -492 +507 -992

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine and tangent values across various degrees.

2. Cos. -257 -742 +757

242

2. Cot. -257 +742 -757

I. Cos. -492 -507 +922

007

1. Cot. -492 +507 -992

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

I. Sin. +237 -742 -757

242

1. Tang. -257 +742 -957

2. Sin. +491 -508 -991

008

2. Tang. -491 +508 -991

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains trigonometric values for sine and tangent functions.

2. Cos. -258 -741 +758

241

2. Cot. -258 +741 -758

I. Cos. -491 -508 +991

008

1. Cot. -491 +508 -991

Table with columns labeled A through A and rows labeled 0 through 9. Each cell contains numerical values representing trigonometric data for various angles.

I. Sin. +258 -741 -758

241

1. Tang. -258 +741 -758

2. Sin. +490 -509 -990

009

2. Tang. -490 +509 -990

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine and tangent values across various degrees.

2. Cos. -259 -740 +759

240

2. Cot. -259 +740 -759

I. Cos. -490 -509 +990

009

1. Cot. -490 +509 -990

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A and rows of numerical data. Includes large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 on the left side of the table.

I. Sin. +259 -740 -759

240

1. Tang. -259 +740 -759

2. Sin. +489 -510 -989

010

2. Tang. -489 +510 -989

Table with 18 columns (A, 0-9, A) and 100 rows of numerical data for sine and tangent values.

I. Cos. -489 -510 +989

010

1. Cot. -489 +510 -989

Table with 18 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 100 rows of numerical data. The table is organized into groups of 10 rows each, labeled with numbers 0 through 9 on the left side.

I. Cos. -488 -511 +988

011

1. Cot. -488 +511 -988

Table with columns labeled A through A and rows labeled 0 through 9. Each row contains 18 numerical values. The table is a reconstruction of a trigonometric table from 1891.

I. Cos. -487 -512 +987

012

1. Cot. -487 +512 -987

Table with columns labeled A through A and rows labeled 0 through 9. Each cell contains numerical values representing trigonometric functions. The table is organized into groups of 10 rows, with some rows containing large numbers (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) indicating the row index for that group.

I. Sin. +262 -737 -762

237

1. Tang. -262 +737 -762

2. Sin. +486 -513 -986

013

2. Tang. -486 +513 -986

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine and tangent values across various angles.

2. Cos. -263 -736 +763

236

2. Cot. -263 +736 -763

I. Cos. -486 -513 +986

013

1. Cot. -486 +513 -986

Table with columns labeled A through A and rows labeled 0 through 9. Each cell contains numerical values representing trigonometric data. The table is organized into groups of 10 rows, with the first row of each group starting with a number (0-9) in the left margin. The columns are labeled with letters A through A, representing different trigonometric functions or values.

I. Sin. +263 -736 -763

236

1. Tang. -263 +736 -763

I. Cos. -485 -514 +985

014

1. Cot. -485 +514 -985

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin to indicate the corresponding row groups.

I. Sin. +264 -735 -764

235

1. Tang. -264 +735 -764

2. ou 1. Sin. +484 -515 -984

015

2. ou 1. Tang. -484 +515 -984

Main table with 18 columns (A, 1-9, 0, 1-9, A) and 90 rows of numerical data. Includes large vertical numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 on the left side.

2. ou 1. Cos. -265 -734 +765

234

2. ou 1. Cot. -265 +734 -765

I. Cos. -484 -515 +984

015

1. ou 0. Cot. -484 +515 -984

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values.

I. Sin. +265 -734 -765

234

1. ou 0. Tang. -265 +734 -765

I. Sin. +483 -516 -983

016

I. Tang. -483 +516 -983

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. Contains numerical data for sine and tangent values.

I. Cos. -266 -733 +766

233

I. Cot. -266 +733 -986

I. Cos. -483 -516 +983

016

O. Cot. -483 +516 -983

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for Cosine, Cotangent, and other trigonometric values.

I. Sin. +266 -733 -766

233

O. Tang. -266 +733 -766

I. Sin. +482 -517 -982

017

I. Tang. -482 +517 -982

Table with columns labeled A through 9 and rows of numerical data. Includes large number labels (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) on the left side of the data grid.

I. Cos. -482 -517 +982

017

O. Cot. -482 +517 -982

Table with columns labeled A through A and rows labeled 0 through 9. Each cell contains numerical values representing trigonometric data for various angles.

I. Sin. +267 -732 -767

232

O. Tang. -267 +732 -767

I. Sin. +481 -518 -981

018

I. Tang. -481 +518 -981

Table with 18 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 18 rows of numerical data. Includes large numbers like 01800, 01810, 01820, 01830, 01840, 01850, 01860, 01870, 01880, 01890, 01900.

I. Cos. -268 -731 +768

231

I. Cot. -268 +731 -768

I. Cos. -481 -518 +981

018

O. Cot. -481 +518 -981

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

I. Sin. +480 -519 -980

O19

I. Tang. -480 +519 -980

Main table of trigonometric values for 1891, including columns for angles and values for sine, cosine, tangent, and cotangent.

I. Cos. -480 -519 +980

019

O. Cot. -480 +519 -980

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

I. Sin. +269 -730 -769

230

O. Tang. -269 +730 -769

I. Sin. +479 -520 -979

020

I. Tang. -479 +520 -979

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. Contains numerical data for sine and tangent values.

I. Cos. -270 -729 +770

229

I. Cot. -270 +729 -770

I. Cos. -479 -520 +979

020

O. Cot. -479 +520 -979

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values across various angles.

I. Sin. +270 -729 -770

229

O. Tang. -270 +729 -770

I. Sin. +478 -521 -978

021

I. Tang. -478 +521 -978

Main table containing trigonometric values for angles 0 to 180 degrees. Columns are labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. Includes large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 in the left margin.

I. Cos. -271 -728 +771

228

I. Cot. -271 +728 -771

I. Cos. -478 -521 +978

021

O. Cot. -478 +521 -978

Table with 18 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 100 rows of numerical data. Includes large numbers like 99620845 and 84136.

I. Sin. +271 -728 -771

228

O. Tang. -271 +728 -771

I. Cos. -477 -522 +977

022

0. Cot. -477 +522 -977

Table with columns labeled A through 9 and rows labeled 0 through 9. The table contains numerical data for trigonometric functions, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically on the left side of the grid.

I. Sin. +272 -727 -772

227

0. Tang. -272 +727 -772

I. Sin. +476 -523 -976

023

I. Tang. -476 +523 -976

Table with 18 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 100 rows of numerical data. Includes large vertical numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 on the left side of the table.

I. Cos. -273 -726 +773

226

I. Cot. -273 +726 -773

I. Cos. -476 -523 +976

023

0. Cot. -476 +523 -976

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A and rows of numerical data. Includes large numbers like 99544921, 44881, 44841, etc.

I. Sin. +273 -726 -773

226

0. Tang. -273 +726 -773

I. Cos. -475 -524 +975

024

O. Cot. -475 +524 -975

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values.

I. Sin. +274 -725 -774

225

O. Tang. -274 +725 -774

Cos. -474 -525 +974

025

0. Cot. -474 +525 -974

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains trigonometric values for cosine and cotangent across various angles.

Cos. -470 -529 +970

029

0. Cot. -470 +529 -970

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. Contains numerical data for cosine and cotangent values.

Sin. +465 -534 -965

034

Tang. -465 +534 -965

Main table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and two sets of values.

Cos. -284 -715 +784

215

Cot. -284 +715 -784

Sim. +464 -535 -964

035

Tang. -464 +535 -964

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine, tangent, and cosine values across various angles.

Cos. -464 -535 +964

035

0. Cot. -464 +535 -964

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 indicating specific rows.

Sin. +285 -714 -785

214

0. Tang. -285 +714 -785

Cos. -463 -536 +963

036

0. Cot. -463 +536 -963

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows labeled 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. The table contains numerical data for cosine and cotangent values.

Sin. +286 -713 -786

213

0. Tang. -286 +713 -786

Cos. -462 -537 +962

037

0. Cot. -462 +537 -962

Table with 14 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 100 rows (03700 to 03799). Contains numerical data for cosine and cotangent values.

Sin. +287 -712 -787

212

0. Tang. -287 +712 -787

Sin. +460 -539 -960

039

Tang. -460 +539 -960

Main table containing trigonometric values for various angles. Columns are labeled with numbers 0-9 and A. Rows are labeled with numbers 0-9 and A. Large numbers like 03900, 03910, etc., are placed to the left of the rows.

Cos. -289 -710 +789

210

Cot. -289 +710 -789

Cos. -460 -539 +960

039

0. Cot. -460 +539 -960

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data arranged in a grid format, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically on the left side of the table.

Sin. +289 -710 -789

210

0. Tang. -289 +710 -789

Cos. -459 -540 +959

040

0. Cot. -459 +540 -959

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. Contains numerical data for cosine and cotangent values.

Sin. +290 -709 -790

209

0. Tang. -290 +709 -790

Cos. -458 -541 +958

041

0. Cot. -458 +541 -958

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 indicating the rows.

Sin. +291 -708 -791

208

0. Tang. -291 +708 -791

Cos. -457 -542 +957

042

0. Cot. -457 +542 -957

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. The table contains numerical data arranged in a grid with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically on the left side of the grid.

Sin. +292 -707 -792

207

0. Tang. -292 +707 -792

Cos. -456 -543 +956

043

0. Cot. -456 +543 -956

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and corresponding numerical values for cosine and cotangent functions.

Cos. -455 -544 +955

044

0. Cot. -455 +544 -955

Main trigonometric table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows 0 to 9. Contains cosine, cotangent, and secant values.

Sin. +294 -705 -794

205

0. Tang. -294 +705 -794

445 463

Sin. +454 -545 -954

045

Tang. -454 +545 -954

Table with columns A, 0-9 for Sin and Tang, and A for Tang. The table contains numerical values for various angles, organized into sections labeled 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Cos. -295 -704 +795

204

Cot. -295 +704 -795

Cos. -453 -546 +953

046

0. Cot. -453 +546 -953

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values across various angles.

Sin. +296 -703 -796

203

0. Tang. -296 +703 -796

Sin. +452 -547 -952

047

Tang. -452 +547 -952

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine and tangent values across various degrees.

Cos. -451 -548 +951

048

0. Cot. -451 +548 -951

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values.

Sin. +298 -701 -798

201

0. Tang. -298 +701 -798

Sin. +450 -549 -950

049

Tang. -450 +549 -950

Main table of trigonometric values (Sine, Tangent) with columns labeled A through A and rows labeled 0 through 9. The table contains numerical data for various angles and includes large vertical numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 on the left side.

Cos. -299 -700 +799

200

Cot. -299 +700 -799

Cos. -450 -549 +950

049

0. Cot. -450 +549 -950

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains trigonometric values for Cosine and Cotangent across various angles.

Sin. +299 -700 -799

200

0. Tang. -299 +700 -799

Cos. -448 -551 +948

051

0. Cot. -448 +551 -948

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. Contains numerical data for cosine and cotangent values.

Sin. +301 -698 -801

198

0. Tang. -301 +698 -801

Cos. -447 -552 +947

052

0. Cot. -447 +552 -947

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows of numerical data. Includes large numbers like 976, 39506, 38581, 37056, etc.

Sim. +446 -553 -946

053

Tang. -446 +553 -946

Table with columns A through A and rows 05300 to 95370. Contains numerical data with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 interspersed in the left margin.

Sin. +445 -554 -945

054

Tang. -445 +554 -945

Main table of trigonometric values with columns labeled A through A and rows for sine and tangent values from 05400 to 95400.

Cos. -445 -554 +945

054

0. Cot. -445 +554 -945

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains trigonometric values for cosine and cotangent at various angles.

Cos. -444 -555 +944

055

0. Cot. -444 +555 -944

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows of numerical data. Includes large numbers like 95509, 95498, 95487, etc., and is marked with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Sin. +305 -694 -805

194

0. Tang. -305 +694 -805

Cos. -443 -556 +943

056

0. Cot. -443 +556 -943

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. The table contains numerical values for cosine and cotangent functions, organized in two main sections with large row indices (0-9) on the left and right margins.

Sin. +306 -693 -806

193

0. Tang. -306 +693 -806

Sin. +442 -557 -942

057

Tang. -442 +557 -942

Table with 18 columns (A-10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 18 rows (0-9). Contains trigonometric values for various angles.

Cos. -307 -692 +807

192

Cot. -307 +692 -807

Sim. +441 -558 -941

058

Tang. -441 +558 -941

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data arranged in a grid format, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left and right margins.

Sim. +440 -559 -940

059

Tang. -440 +559 -940

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and rows 05900 to 92586. The table contains numerical data for sine, tangent, and cosine values.

Sin. +439 -560 -939

060

Tang. -439 +560 -939

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine and tangent values across various degrees.

Sin. +438 -561 -938

061

Tang. -438 +561 -938

Table with columns labeled A, O, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine, tangent, and other trigonometric values.

Cos. -438 -561 +938

061

0. Cot. -438 +561 -938

Table with columns labeled A through A and rows 0 to 9. It contains a grid of numerical data points, likely trigonometric values, with some cells containing large numbers like 957882, 957882, etc.

Sin. +311 -688 -811

188

0. Tang. -311 +688 -811

Sim. +437 -562 -937

062

Tang. -437 +562 -937

Table with 19 columns (A-9, 0-9, 1-9, A) and rows for angles 0 to 9 degrees. Each cell contains a 5-digit trigonometric value. The table is a reconstruction of Mendizábal's 1891 table.

Cos. -437 -562 +937

062

0. Cot. -437 +562 -937

Main table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains trigonometric values for various angles, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically on the left side of the table.

Sin. +312 -687 -812

187

0. Tang. -312 +687 -812

Sin. +436 -563 -936

063

Tang. -436 +563 -936

Main table of trigonometric values with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows labeled with numbers 0-9 and A. Includes large numerical digits (0-9) on the left and right margins.

Cos. -436 -563 +936

063

0. Cot. -436 +563 -936

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows for various cosine values. Includes large numbers like 06300, 06310, 06320, 06330, 06340, 06350, 06360, 06370, 06380, 06390 and 06300.

Sin. +313 -686 -813

186

0. Tang. -313 +686 -813

Sin. +435 -564 -935

064

Tang. -435 +564 -935

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and A, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine and tangent values. Large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed vertically on the left side of the table rows.

Cos. -435 -564 +935

064

0. Cot. -435 +564 -935

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

Sin. +314 -685 -814

185

0. Tang. -314 +685 -814

Sin. +434 -565 -934

065

Tang. -434 +565 -934

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows 06500 to 06599. It contains numerical values for sine and tangent functions.

Cos. -315 -684 +815

184

Cot. -315 +684 -815

Cos. -432 -567 +932

067

0. Cot. -432 +567 -932

Table with 18 columns labeled A through A and 18 rows labeled 0 through 9. Each cell contains numerical values representing trigonometric data for various angles.

Sin. +317 -682 -817

182

0. Tang. -317 +682 -817

Cos. -431 -568 +931

068

0. Cot. -431 +568 -931

Table with 18 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 100 rows of numerical data. Large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed vertically in the right margin next to their respective rows.

Sin. +318 -681 -818

181

0. Tang. -318 +681 -818

Sin. +430 -569 -930

069

Tang. -430 +569 -930

Table with 18 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and multiple rows of numerical data. Includes large numbers like 623, 33793, 3438, 3497, 3556, 3615, 3674, 3733, 3792, 3851, 3910, etc.

Cos. -430 -569 +930

069

0. Cot. -430 +569 -930

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values across various angles.

Sim. +429 -570 -929

070

Tang. -429 +570 -929

Table with columns labeled A through A and rows containing numerical data. The table is organized into sections for different values of A (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) and includes a final row for A values 10 through A.

Sin. +428 -571 -928

071

Tang. -428 +571 -928

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains trigonometric values for angles from 0 to 90 degrees, including sine, cosine, tangent, and cotangent values.

Cos. -321 -678 +821

178

Cot. -321 +678 -821

Sim. +427 -572 -927

072

Tang. -427 +572 -927

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows containing numerical data for Sin and Tang functions. Includes large digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 for row grouping.

Cos. -427 -572 +927

072

0. Cot. -427 +572 -927

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows 07200 to 07299. Each row contains 10 columns of numerical data. Large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed vertically on the left side of the table.

Sin. +322 -677 -822

177

0. Tang. -322 +677 -822

Cos. -426 -573 +926

073

0. Cot. -426 +573 -926

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values across various angles.

Cos. -425 -574 +925

074

0. Cot. -425 +574 -925

Table with 18 columns (A-0-1-2-3-4-5-6-7-8-9-0-1-2-3-4-5-6-7-8-9-A) and 90 rows (0-9 for each digit 0-9). Contains trigonometric values for cosine and cotangent.

Sin. +424 -575 -924

075

Tang. -424 +575 -924

Main table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows of numerical data. Includes large numbers like 17490, 17470, 17460, 17450, 17440, 17430, 17420, 17410, 17400.

Cos. -325 -674 +825

174

Cot. -325 +674 -825

Cos. -424 -575 +924

075

0. Cot. -424 +575 -924

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values across various angles.

Sin. +325 -674 -825

174

0. Tang. -325 +674 -825

Cos. -423 -576 +923

076

0. Cot. -423 +576 -923

Table with 15 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 90 rows of numerical data. Includes large numbers like 948, 47969, 4857, 4942, 4627, 4755, 4740, 4726, 4712, 4698, 4684, 4670, 286, 11870, 1120, 1053, 0986, 0920, 0853, 0786, 0719, 0652, 0585, 17399.

Sin. +326 -673 -826

173

0. Tang. -326 +673 -826

Sin. +421 -578 -921

078

Tang. -421 +578 -921

Main table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and A. It contains two sets of numerical data corresponding to the Sin and Tang headers. Large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed vertically along the left margin of the data columns.

Cos. -421 -578 +921

078

0. Cot. -421 +578 -921

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values across various angles.

Sim. +328 -671 -828

171

0. Tang. -328 +671 -828

Cos. -420 -579 +920

079

0. Cot. -420 +579 -920

Table with columns labeled A through A and rows labeled 0 through 9. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

Cos. -419 -580 +919

080

0. Cot. -419 +580 -919

Table with columns A through A and rows 08000 through 08999. Each row contains 18 numerical values. Large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed vertically on the left side of the table to indicate row groups.

Sin. +330 -669 -830

169

0. Tang. -330 +669 -830

Sim. +418 -581 -918

081

Tang. -418 +581 -918

Main table containing trigonometric values for various angles, organized in columns labeled A through A and rows with numerical indices.

Cos. -417 -582 +917 082 0. Cot. -417 +582 -917

Table with columns labeled A through 9 and A through 9, containing numerical values for cosine and cotangent functions.

0830 Sin. +416 -583 -916

083

Tang. -416 +583 -916

Main table of trigonometric values with columns labeled A through A and rows labeled 0 through 9. The table contains numerical data for sine, tangent, and other functions.

Cos. -333 -666 +833

166

Cot. -333 +666 -833

Cos. -416 -583 +916

083

0. Cot. -416 +583 -916

Table with 18 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 90 rows of numerical data. Large digits (0-9) are placed vertically next to groups of rows to indicate the first digit of the values.

Cos. -415 -584 +915

084

0. Cot. -415 +584 -915

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically on the left side of the table.

Cos. -414 -585 +914

085

0. Cot. -414 +585 -914

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values.

Sin. +335 -664 -835

164

0. Tang. -335 +664 -835

Sin. +412 -587 -912

087

Tang. -412 +587 -912

Table with columns labeled A through A and rows containing numerical data. The table is organized into sections with large numbers (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) on the left side, indicating different parts of the trigonometric table.

Cos. -411 -588 +911

088

0. Cot. -411 +588 -911

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical values for cosine and cotangent functions, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically on the left side of the table to indicate sections.

Sin. +338 -661 -838

161

0. Tang. -338 +661 -838

Sin. +410 -589 -910

089

Tang. -410 +589 -910

Main table containing trigonometric values for sine, tangent, and cosine across various angles.

Cos. -339 -660 +839

160

Cot. -339 +660 -839

Cos. -410 -589 +910

089

0. Cot. -410 +589 -910

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values.

Sin. +339 -660 -839

160

0. Tang. -339 +660 -839

Sin. +408 -591 -908

091

Tang. -408 +591 -908

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows corresponding to sine and tangent values for angles from 0 to 90 degrees. The table includes values for Sin. +408 -591 -908 and Tang. -408 +591 -908.

Sin. +406 -593 -906

093

Tang. -406 +593 -906

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine and tangent values across various angles.

Cos. -343 -656 +843

156

Cot. -343 +656 -843

Cos. -406 -593 +906

093

0. Cot. -406 +593 -906

Table with columns labeled A through A and rows numbered 0 to 9. The table contains numerical data for Cosine, Cotangent, and other trigonometric functions, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically on the left side of the grid.

Sin. +343 -656 -843

156

0. Tang. -343 +656 -843

095 Sin. +404 -595 -904

095

Tang. -404 +595 -904

Table with columns for angles (0 to 90 degrees) and values for sine, cosine, tangent, and cotangent. Includes various mathematical notations like π, √, and infinity symbols. The table is organized into sections with large numbers 0-9 on the left and right sides.

Cos. -404 -595 +904

095

0. Cot. -404 +595 -904

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows of numerical data. Includes large numbers like 09500, 09510, 09520, 09530, 09540, 09550, 09560, 09570, 09580, 09590, 09600.

Sin. +345 -654 -845

154

0. Tang. -345 +654 -845

Cos. -403 -596 +903

096

0. Cot. -403 +596 -903

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows labeled 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. The table contains numerical data for cosine and cotangent values.

Cos. -402 -597 +902

097

0. Cot. -402 +597 -902

Table with columns labeled A through A and rows labeled 0 through 9. Each cell contains numerical values representing trigonometric data. The table is organized into sections for Cosine and Cotangent values.

Sin. +347 -652 -847

152

0. Tang. -347 +652 -847

Sin. +401 -598 -901

098

Tang. -401 +598 -901

Main table containing trigonometric values for various angles. The table is organized into columns labeled with letters A through A and numbers 0 through 9. It includes values for Sine, Tangent, and other trigonometric functions. Large numbers like 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed vertically along the left and right sides of the table to indicate specific sections or values.

Cos. -348 -651 +848

151

Cot. -348 +651 -848

Cos. -400 -599 +900

099

0. Cot. -400 +599 -900

Table with 25 columns (A to A) and 90 rows (09900 to 99977). Each row contains two sets of 10 numbers. Large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed vertically on the left side of the table, corresponding to the first column of numbers.

Sin. +349 -650 -849

150

0. Tang. -349 +650 -849

Cos. -399 -600 +899

100

0. Cot. -399 +600 -899

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains trigonometric values for cosine and cotangent at 1-degree intervals.

Sin. +350 -649 -850

149

0. Tang. -350 +649 -850

Cos. -398 -601 +898

101

0. Cot. -398 +601 -898

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. Contains numerical data for cosine and cotangent values.

Cos. -397 -602 +897

102

0. Cot. -397 +602 -897

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains trigonometric values for cosine and cotangent, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

Cos. -396 -603 +896

103

0. Cot. -396 +603 -896

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows labeled with numbers 0-9. The table contains numerical data for cosine and cotangent values.

Sin. +353 -646 -853

146

0. Tang. -353 +646 -853

Cos. -395 -604 +895

104

0. Cot. -395 +604 -895

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

Sin. +354 -645 -854

145

0. Tang. -354 +645 -854

Sin. +394 -605 -894

105

Tang. -394 +605 -894

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains trigonometric values for sine and tangent functions across degrees 0 to 105. Large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed in the left margin between the first and second columns.

Cos. -394 -605 +894

105

0. Cot. -394 +605 -894

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values across various angles.

Sin. +355 -644 -855

144

0. Tang. -355 +644 -855

Sin. +393 -606 -893

106

Tang. -393 +606 -893

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and A, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. Contains numerical data for sine and tangent values.

Cos. -393 -606 +893

106

0. Cot. -393 +606 -893

Table with 27 columns (A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A) and 20 rows of numerical data.

Sin. +356 -643 -856

143

0. Tang. -356 +643 -856

Cos. -392 -607 +892

107

0. Cot. -392 +607 -892

Table with columns labeled A through A and rows labeled 0 through 9. The table contains numerical data for cosine and cotangent values, with some cells containing large numbers and others containing smaller numbers. The table is organized into columns and rows, with some cells containing large numbers and others containing smaller numbers.

Sin. +357 -642 -857

142

0. Tang. -357 +642 -857

Cos. -391 -608 +891

108

0. Cot. -391 +608 -891

A	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	A																																																																																																																																																																											
10800	891	23759	2354	2332	2310	2288	2266	2244	2222	2200	2178	2156	2134	2112	2090	2068	2046	2024	2002	1980	1958	1936	1914	1892	1870	1848	1826	1804	1782	1760	1738	1716	1694	1672	1650	1628	1606	1584	1562	1540	1518	1496	1474	1452	1430	1408	1386	1364	1342	1320	1298	1276	1254	1232	1210	1188	1166	1144	1122	1100	1078	1056	1034	1012	990	968	946	924	902	880	858	836	814	792	770	748	726	704	682	660	638	616	594	572	550	528	506	484	462	440	418	396	374	352	330	308	286	264	242	220	198	176	154	132	110	88	66	44	22	0	993	49143	4858	4803	4747	4691	4635	4579	4523	4468	4412	4357	4301	4245	4189	4133	4077	4021	3965	3909	3853	3797	3741	3685	3629	3573	3517	3461	3405	3349	3293	3237	3181	3125	3069	3013	2957	2901	2845	2789	2733	2677	2621	2565	2509	2453	2397	2341	2285	2229	2173	2117	2061	2005	1949	1893	1837	1781	1725	1669	1613	1557	1501	1445	1389	1333	1277	1221	1165	1109	1053	997	941	885	829	773	717	661	605	549	493	437	381	325	269	213	157	101	45	0	925	925

Sin. +358 -641 -858

141

0. Tang. -358 +641 -858

Cos. -390 -609 +890

109

0. Cot. -390 +609 -890

Table with columns A, 1-10, 0, 1-10, 0, 1-10, A. It contains trigonometric values for cosine, cotangent, and sine functions across various angles.

Sin. +359 -640 -859

140

0. Tang. -359 +640 -859

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. The table contains numerical data arranged in a grid format, representing trigonometric values for various angles.

Cos. -389 -610 +889

110

0. Cot. -389 +610 -889

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains trigonometric values for cosine and cotangent functions.

Cos. -388 -611 +888

111

0. Cot. -388 +611 -888

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows of numerical data. Large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed vertically on the left side of the table.

Sin. +361 -638 -861

138

0. Tang. -361 +638 -861

Sin. +387 -612 -887

112

Tang. -387 +612 -887

Main table containing trigonometric values for angles from 112 degrees to 137 degrees. The table is organized in columns labeled A through A and rows labeled 0 through 9. Each cell contains a numerical value. Large numbers like 11200, 11210, 11220, etc., are placed to the left of the rows to indicate the angle. Large numbers like 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed to the left of the columns to indicate the row number. The values represent sine, tangent, and other trigonometric functions.

Cos. -362 -637 +862

137

Cot. -362 +637 -862

Cos. -387 -612 +887

112

0. Cot. -387 +612 -887

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

Sin. +362 -637 -862

137

0. Tang. -362 +637 -862

Sin. +385 -614 -885

114

Tang. -385 +614 -885

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine, tangent, and cosine values across various angles.

Cos. -364 -635 +864

135

Cot. -364 +635 -864

Cos. -385 -614 +885

114

0. Cot. -385 +614 -885

Table with columns A, 1-9, 10, 1-9, 10, 1-9, A. Rows numbered 1 to 9 in the first column, and large digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 in the second column. The table contains numerical data from trigonometric tables.

Sin. +364 -635 -864

135

0. Tang. -364 +635 -864

Sin. +383 -616 -883

116

Tang. -383 +616 -883

Main table containing trigonometric values in a grid format with columns labeled A through 10 and rows labeled with numbers 1 through 9. Large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are placed vertically on the left side of the grid.

Cos. -366 -633 +866

133

Cot. -366 +633 -866

Sin. +380 -619 -880

119

Tang. -380 +619 -880

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and rows of numerical data. Includes large digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and 13000 in the right margin.

Cos. -380 -619 +880

119

0. Cot. -380 +619 -880

Table with columns labeled A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values across various angles.

120 Sin. +379 -620 -879

120

Tang. -379 +620 -879

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for sine and tangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically in the left margin.

Cos. -379 -620 +879

120

0. Cot. -379 +620 -879

Main table of trigonometric values with columns for angles (A) and corresponding sine, cosine, and cotangent values. Includes large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 for readability.

Sin. +370 -629 -870

129

0. Tang. -370 +629 -870

Sin. +377 -622 -877

122

Tang. -377 +622 -877

Main table with columns A, 0-9 for Sin and Tang, and A for Cos and Cot. Includes large numerical values and small row indices.

Cos. -372 -627 +872

127

Cot. -372 +627 -872

Cos. -377 -622 +877

122

0. Cot. -377 +622 -877

Table with 26 columns (A, 0-9, A) and 100 rows (1-100). Contains numerical data for cosine and cotangent values, with large numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 placed vertically on the left side of the table.

Sin. +372 -627 -872

127

0. Tang. -372 +627 -872

Sin. +375 -624 -875

124

Tang. -375 +624 -875

Main table containing numerical data for Sine, Tangent, and other trigonometric functions across various angles, organized in columns and rows with numerical labels.

Cos. -375 -624 +875

124

0. Cot. -375 +624 -875

Table with columns A, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A. It contains numerical data for cosine and cotangent values across various angles.

Sin. +374 -625 -874

125

0. Tang. -374 +625 -874