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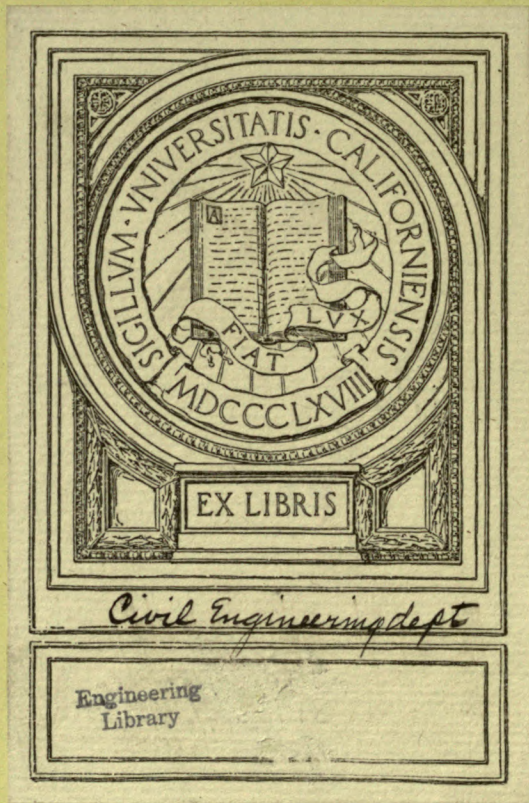
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# TRAVERSE TABLES

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R. L. GURDEN

UNIVERSITY OF CALIFORNIA  
DEPARTMENT OF CIVIL ENGINEERING  
BERKELEY, CALIFORNIA







# TRAVERSE TABLES.

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UP TO 100 OF DISTANCE.

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SURVEYORS AND ENGINEERS.

BY  
RICHARD LLOYD GURDEN,  
FORMERLY AUTHORISED SURVEYOR  
FOR  
THE GOVERNMENTS OF NEW SOUTH WALES AND VICTORIA.

*Published with Concurrence of the Surveyors-General for New South Wales and Victoria.*

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CALIFORNIA

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## INTRODUCTION.

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IN offering the present Volume to the consideration of his brother Surveyors, the Author would simply remark, that it owes its existence to his own felt want of such a compilation.

Whilst occupied on the Government Survey of Victoria, the inadequacy for practical purposes of the existing published Computations forced itself so strongly upon him, that he resolved, notwithstanding the pressure of professional engagements, to prepare a set of Traverse Tables which should more nearly answer both his own requirements and those of his colleagues—a determination which has resulted in the publication of the ensuing pages.

The DISTINCTIVE FEATURES of these Tables, and the method of their employment, may be briefly summarised as follows:—

I. The Tables are calculated to Single Minutes and to 100 of Distance.

II. The Traverses are given to four places of decimals, so that the Sines and Cosines for a distance of twelve miles can be ascertained correctly to within half an inch.

III. The angles 0 to 45° are given at the top of the page, and 45° to 90° at the foot; the distances 1 to 100 are in the outside columns; and the quantity sought is found at the intersection of the column containing the required angle and the line on which is the required distance.

IV. The whole numbers are given in the two centre columns *only*, and from these the decimal quantities increase towards the edge of the page, the Sines increasing to the right, and the Cosines to the left. When the whole number changes in the line, attention is directed to it by a black diamond; therefore, when a black diamond is found, it is to be understood that it signifies a cipher, and that the whole number of that value (*i.e.* containing the diamond), and all to the right on the same line, must be increased by *one*. For example:—

	Cos.	Sin.
0° 42' dist. 81	80'9940	81'9896
0° 43' ,, 81	80'9937	82'0131
0° 44' ,, 81	80'9934	82'0367

The simplicity of this plan has so many advantages, that, in the Author's opinion, it more than counterbalances the commoner one of repeating the whole numbers at the outside of the page as well as in the centre.

V. In the following Table, the whole of the figures required to be written for the finding of Sines and Cosines are shown in a circuit of twelve lines:—

Bearing.	Reduced Bearing.	Distance.	Latitude.	Departure.	Latitude.		Departure.	
					N.	S.	E.	W.
90° 16'	S. 89° 44' E.	9326	43° 28' 12	9299° 90 26' 00		43° 40'	9325° 90	
			<u>43° 40'</u>	<u>9325° 60</u>				
63° 27'	N. 63° 27' E.	460			205° 61'		411° 49'	
16° 28'	N. 16° 28' E.	1022	958° 99 21' 10	283° 46 6' 24	980° 09'		289° 70'	
			<u>980° 09'</u>	<u>289° 70'</u>				
136° 25'	S. 43° 35' E.	1270	969° 25 50' 71	827° 29 48' 26				
			<u>919° 96'</u>	<u>875° 55'</u>		919° 96'	875° 55'	
203° 15'	S. 23° 15' W.	990				909° 60'		390° 80'
161° 3'	S. 18° 57' E.	1275	1134° 96 70' 94	389° 69 24' 36		1205° 90'	414° 05'	
			<u>1205° 90'</u>	<u>414° 05'</u>				
136° 46'	S. 43° 14' E.	1153	801° 43 38' 61	753° 47 36' 30		840° 04'	789° 77'	
			<u>840° 04'</u>	<u>789° 77'</u>				
174° 43'	S. 5° 17' E.	1180	1095° 33 79' 66	101° 29 7' 37		1174° 99'	108° 66'	
			<u>1174° 99'</u>	<u>108° 66'</u>				
234° 20'	S. 54° 20' W.	1563	874° 60 36' 73	1218° 63 51' 18		911° 33'		1269° 81'
			<u>911° 33'</u>	<u>1269° 81'</u>				
196° 17'	S. 16° 17' W.	881	844° 70 96	246° 74 28		845° 66'		247° 02'
			<u>845° 66'</u>	<u>247° 02'</u>				
270° 0'	W.	7708						7708° 00'
335° 21'	N. 24° 39' W.	6233	5635° 01 29' 99	2585° 86 13' 76	5665° 00'			2599° 62'
			<u>5665° 00'</u>	<u>2599° 62'</u>				
					<u>6850° 70'</u>	<u>6850° 88'</u>	<u>12215° 12'</u>	<u>12215° 25'</u>

The angles sought in the Tables are those under the head "Reduced Bearing."

For the first line, opening the Tables at 89° 44' :

the Cosine and Sine for 93 chs. are first found, . . . . . 43° 28 and 9299° 90  
then for 26 lks., . . . . . 12 26° 00

and these being added up, . . . . . 43° 40 9325° 90

the results are carried into the S. and E. columns.

In the next line, the book is opened at 63° 27', and for Distance 460 chs. The Cosine and Sine are found at once, and copied into the N. and E. columns.

In the third line, the book is opened at 16° 28', and at a Distance 1000 :

the Cosine and Sine copied, . . . . . 958° 99 and 283° 46  
then for 22 lks., . . . . . 21° 10 6' 24

and these being added up, . . . . . 980° 09 289° 70

the results are carried into the N. and E. columns.

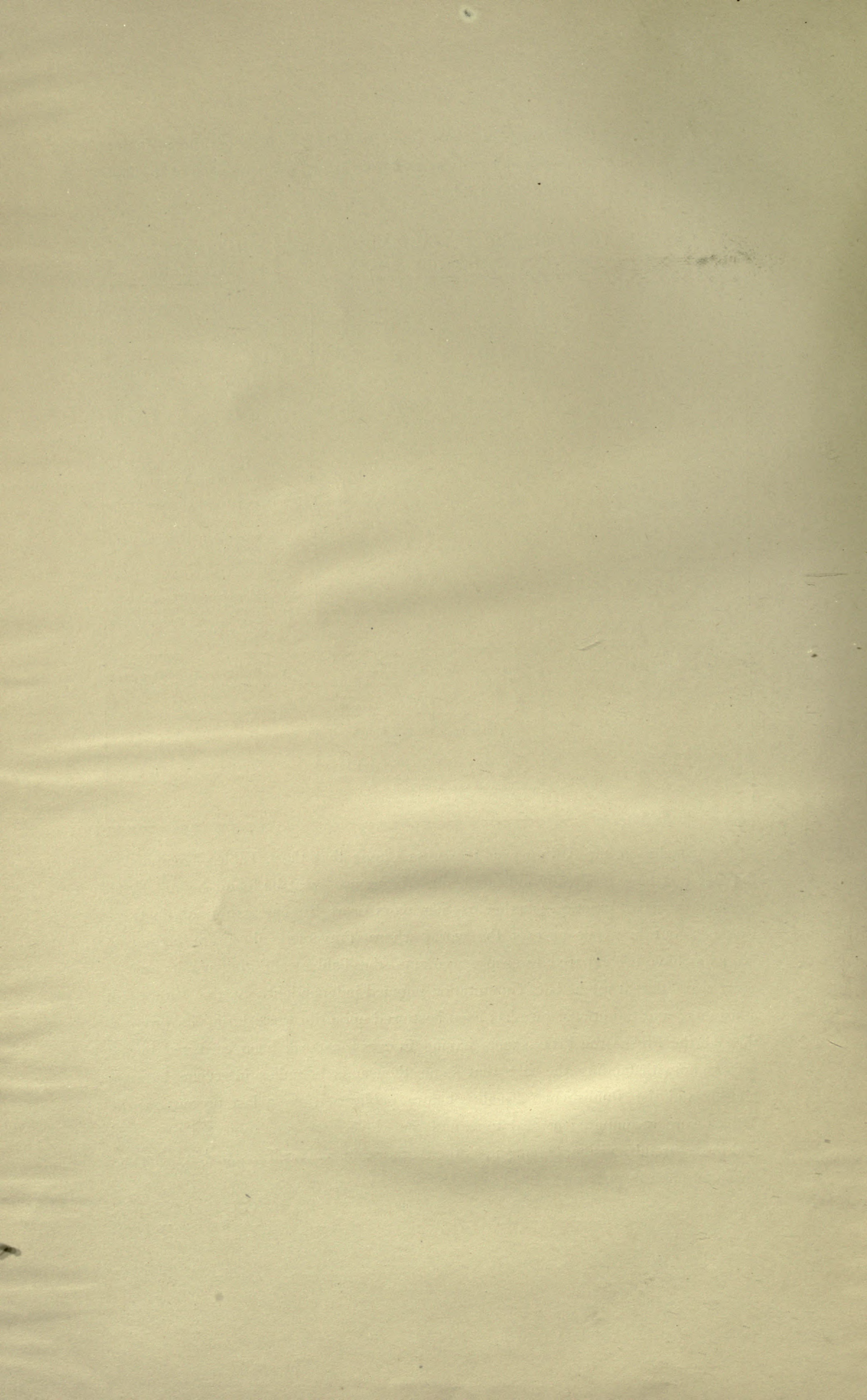
The trifling calculation required is shown in full in the columns "Latitude" and "Departure," that for each line being comprised in *one* page of the book.

VI. The great advantage of these Traverse Tables over Logarithms—both as regards simplicity and economy of labour in calculating—will be seen at a glance from the following comparative Table:—

CALCULATIONS REQUIRED FOR FINDING SINES AND COSINES.		
	By TRAVERSE TABLES.	By LOGARITHMS.
63° 27' — 4600 links.	<p>2056'10 — 4114'91</p> <p><i>One opening of Traverse Tables.</i></p> <p><i>No calculation required.</i></p>	<p style="text-align: right;">5</p> <p>4114'91 <span style="float: right;">93</span></p> <p>63° 27' <span style="float: right;">3'6143598</span></p> <p>4600 <span style="float: right;">9'9516020</span></p> <p><span style="float: right;">3'6627578</span></p> <p><span style="float: right;">9'6502868</span></p> <p>2056'10 <span style="float: right;">3'2130446</span></p> <p style="text-align: right;">42</p> <p style="text-align: right;">4</p> <p>(a.) The Logarithm book has to be opened in four different places.</p> <p>(b.) Two separate additions have to be made.</p> <p>(c.) In taking out natural numbers, proportional parts have to be resorted to, in order to find figures of second decimal place.</p> <p>(d.) Besides the calculations, 48 more figures have to be written in doing the work by Logarithms than by Traverse Tables.</p>
26° 29' — 9987 links.	<p>(99 chs.) 8861'13 — 4414'78</p> <p>(87 lks.) 77'87 38'80</p> <p style="text-align: center;">8939'00      4453'58</p> <p><i>One opening of Traverse Tables only required.</i></p> <p>In column 26° 29' the Sin. and Cos. for 99 are first found, then in the same column the Sin. and Cos. for 87; these added together give the result.</p>	<p>A calculation similar to that given above is necessitated by Logarithms.</p>

In conclusion, the Author would express a hope that these Tables—compiled in the first instance, as already indicated, for private use—will be found helpful by all engaged in active practice, whether as Surveyors or as Engineers, not only in these Colonies, but in every part of the world where Traverse Tables are employed. No pains have been spared to ensure accuracy—the Tables exhibiting results arrived at by two different methods of computation pursued independently by the Author and assistants; and the utmost care has been bestowed upon the work during its progress through the Press—the Proof-sheets having in every instance been corrected by the writer, notwithstanding the fact that some thousands of miles intervene between himself and the Publishers. Finally, before publication, as a last precaution, the Tables were recomputed a third time, and the whole work was subjected to a rigid and most careful revision, leaving it, as the Author thinks himself justified in believing, absolutely free from error.

R. L. GURDEN,  
KERANG, VICTORIA.























TRAVERSE TABLES.

Table with columns for angle (1° to 88°), COSINE, and SINE values. The table is organized into two main sections: COSINE on the left and SINE on the right. Each section contains rows for degrees 1° through 88° and columns for minutes from 30' to 21'.







TRAVERSE TABLES.

Table with columns for COSINE and SINE, rows for angles from 1 to 100 degrees, and a bottom section for angles from 87 to 90 degrees. The table provides numerical values for cosine and sine functions.









TRAVERSE TABLES.

Main table of trigonometric values for 2° to 87°, showing COSINE and SINE values in a grid format with columns for degrees and minutes.

TRAVERSE TABLES.

Table with columns for degrees (3° to 86°), Cosine, and Sine values. The table is organized into two main sections: Cosine (left) and Sine (right), with degree markings at the top and bottom.

TRAVERSE TABLES.

Table of Traverse Tables with columns for degrees (3 to 86), cosine, sine, and degree labels. The table contains trigonometric values for various angles and is organized into a grid with degree markers at the top and bottom.



TRAVERSE TABLES.

Traverse tables showing Cosine and Sine values for angles from 3° to 86°. The table is divided into two main sections: Cosine (left) and Sine (right). Each section has columns for minutes (20' to 29') and rows for degrees (1 to 100). The values are listed in a grid format.







TRAVERSE TABLES.

Table with columns for COSINE and SINE, and rows for angles from 4° to 85°. Each row contains values for minutes 0' to 9' under both cosine and sine headings.

TRAVERSE TABLES.

Table with columns for degrees (4° to 85°), Cosine, and Sine values. Includes a central grid of values and a bottom section for 85° Sine and Cosine values.

TRAVERSE TABLES.

Table with columns for degrees and minutes, and rows for cosine and sine values. It includes a header for COSINE and SINE, and a footer for 85 degrees. The table contains numerical data for angles from 4 degrees to 85 degrees.

# TRAVERSE TABLES.

4°	COSINE.											SINE.											4°
	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'			
	1	9969	9969	9969	9968	9968	9968	9968	9967	9967	9967	0785	0787	0790	0793	0796	0799	0802	0805	0808	0811	1	
100	6917	6895	6872	6849	6825	6802	6779	6756	6732	6709	78459	8749	9039	9329	9619	9909	9199	0489	0779	1069	100		
COSINE.											SINE.												
85°	30'	29'	28'	27'	26'	25'	24'	23'	22'	21'	30'	29'	28'	27'	26'	25'	24'	23'	22'	21'	85°		





TRAVERSE TABLES.

Table with columns for COSINE and SINE, ranging from 4 degrees to 85 degrees. Each degree is further divided into minutes (0' to 59'). The table provides numerical values for cosine and sine functions.



TRAVERSE TABLES.

Traverse tables showing Cosine and Sine values for angles from 5 to 84 degrees. The table is organized into sections for Cosine and Sine, with sub-sections for different degrees (5 to 84). Each section contains two columns of data, one for the degree and one for the cosine or sine value, with sub-columns for minutes and seconds.



TRAVERSE TABLES.

Main table with columns for degrees (5° to 84°), Cosine, and Sine values for each minute. The table is a large grid of numbers organized by angle and trigonometric function.



TRAVERSE TABLES.

Table of Traverse Tables showing COSINE and SINE values for angles from 5° to 84°. The table is organized into two main sections: COSINE and SINE, each with a grid of values for degrees and minutes.







TRAVERSE TABLES.

Table with columns for degrees (6° to 83°) and minutes (20' to 29'), containing Cosine and Sine values. The table is organized into two main sections: Cosine (left) and Sine (right), with degree markings at the top and bottom.

TRAVERSE TABLES.

Table with columns for degrees (6° to 83°) and minutes (30' to 39'). It contains two main sections: COSINE and SINE. Each section has a grid of values for each minute. The cosine values decrease from left to right, while sine values increase from left to right. The table is symmetric around 45 degrees.

TRAVERSE TABLES.

Table with columns for COSINE and SINE, rows for angles from 6° to 83°. Includes sub-columns for minutes and seconds.

TRAVERSE TABLES.

Table with columns for degrees (6°, 83°) and minutes (50' to 59'). It contains two main sections: COSINE and SINE. Each section has two columns of data, one for each degree. The cosine values decrease from left to right, while sine values increase from left to right. The bottom row shows the transition from SINE to COSINE as the angle reaches 83°.

TRAVERSE TABLES.

Main table with columns for angles (7° to 82°), COSINE, and SINE. Rows represent angles from 1 to 100. Each row contains 10 cosine values and 10 sine values. The table is symmetric about 45 degrees.





TRAVERSE TABLES.

Table with columns for degrees (7° to 82°), Cosine, and Sine values. The table is organized into two main sections: Cosine on the left and Sine on the right, with degree markers at the top and bottom.

TRAVERSE TABLES.

7° COSINE SINE 7° table with columns for angles and values for cosine and sine functions.



TRAVERSE TABLES.

Table of Cosine and Sine values for angles from 7° to 82°. The table is organized into two main sections: Cosine (left) and Sine (right). Each section contains a grid of values for every minute of the angle. The Cosine section is labeled 'COSINE.' at the top and 'SINE.' at the bottom. The Sine section is labeled 'SINE.' at the top and 'COSINE.' at the bottom. The angles are listed on the left and right margins, with 7° at the top and 82° at the bottom. The table includes values for angles from 7° to 82° in increments of 1 minute.





TRAVERSE TABLES.

Table with columns for Cosine and Sine values at 1-degree intervals. The top row is labeled 8° and the bottom row is labeled 81°. The table contains numerical data for each degree and minute.

TRAVERSE TABLES.

Table of Traverse Tables showing Sine and Cosine values for angles from 8° to 81°. The table is divided into sections for Cosine (left) and Sine (right) for each angle, with values ranging from 1 to 100 degrees.





TRAVERSE TABLES.

Table of traverse tables showing Cosine and Sine values for angles from 8 degrees to 90 degrees. The table is divided into sections for Cosine and Sine, with values for each minute of the degree.



TRAVERSE TABLES.

9° COSINE SINE 9°
Table with columns for degrees (9° to 80°) and minutes (10' to 19') for both Cosine and Sine values. Includes a 60' row at the bottom.







TRAVERSE TABLES.

A large table of trigonometric values for angles from 0 to 90 degrees. The columns are labeled with degrees and minutes. The table is divided into Cosine and Sine sections, with a '90' degree label at the top and bottom corners. It contains numerical values for each degree and minute combination.



TRAVERSE TABLES.

Table with columns for degrees (10° to 79°), Cosine values (0' to 9'), and Sine values (0' to 9'). The table is organized into two main sections: Cosine on the left and Sine on the right, with degree markings at the top and bottom.

TRAVERSE TABLES.

Table with columns for degrees (10° to 79°), cosine values, sine values, and degrees (79°). The table is organized into two main sections: the top half for cosine and the bottom half for sine, with a central section for mixed values.







TRAVERSE TABLES.

Table with columns for degrees (10° to 79°), COSINE, and SINE. The table provides numerical values for various angles, organized in a grid format with degree markers at the top and bottom.







TRAVERSE TABLES.

Table with columns for angles (11° to 78°) and rows for cosine and sine values. The table is organized into two main sections: the top section for angles from 11° to 78° with cosine values on the left and sine values on the right, and a bottom section for angles from 78° to 11° with sine values on the left and cosine values on the right. Each section includes a main header for the function and sub-headers for each minute of the angle. The data is presented in a grid format with numerical values for each entry.





TRAVERSE TABLES.

Table with columns for 11° and 78°, and rows for COSINE and SINE. The table contains numerical values for trigonometric functions across various degrees and minutes.





TRAVERSE TABLES.

Table with columns for degrees (12° to 77°) and minutes (20' to 31'). It contains two main sections: COSINE and SINE. Each section has a grid of numerical values corresponding to the degrees and minutes. The cosine values decrease from left to right, while sine values increase from left to right.

TRAVERSE TABLES.

Table with columns for 12° (Cosine and Sine) and 77° (Sine and Cosine). The table contains numerical values for angles ranging from 1 to 100 degrees, with sub-columns for minutes (30', 31', 32', 33', 34', 35', 36', 37', 38', 39').





TRAVERSE TABLES.

12° COSINE. SINE. 12°
Table with 22 columns (12 degree labels on ends, 50-59 degree labels in between) and 100 rows of trigonometric values.

77°

SINE.

COSINE.

77°



TRAVERSE TABLES.

Table with columns for COSINE and SINE, and rows for angles from 13° to 76°. Includes sub-columns for minutes (10' to 19') and seconds (50' to 41').













TRAVERSE TABLES.

Table with columns for 14° and 75°, and rows for Cosine and Sine values from 10' to 49'.



TRAVERSE TABLES.

Table with columns for degrees (14°, 75°), Cosine, Sine, and individual minute values (30' to 21'). The table contains numerical data for trigonometric functions.



TRAVERSE TABLES.

Main table containing Cosine and Sine values for angles from 14 degrees to 75 degrees. The table is divided into two main sections: 14° to 75° and 75° to 14°. Each section has columns for degrees (14° and 75°) and minutes (50' to 59'). The central columns contain numerical values for Cosine and Sine.



TRAVERSE TABLES.

Table with columns for angles (15° to 74°), COSINE, and SINE values. The table is organized into two main sections: COSINE (left) and SINE (right), with rows corresponding to angles from 15° to 74°.







TRAVERSE TABLES.

15° COSINE. SINE. 15°
Table with 100 rows and 20 columns of numerical values for cosine and sine functions at various angles.

TRAVERSE TABLES.

15°	COSINE.										SINE.										15°
	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	
	1	9621	9620	9619	9618	9617	9617	9616	9615	9614	'9613	'2728	2731	2734	2737	2740	2742	2745	2748	2751	
74°	SINE.										COSINE.										74°
	10'	9'	8'	7'	6'	5'	4'	3'	2'	1'	10'	9'	8'	7'	6'	5'	4'	3'	2'	1'	



TRAVERSE TABLES.

Table with columns for Cosine and Sine values, indexed by degrees (16° to 73°) and minutes (10' to 59'). Includes sub-columns for 10' through 19' minutes for both Cosine and Sine.







TRAVERSE TABLES.

16°	COSINE.										SINE.										16°
	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	
1	9580	9579	9578	9577	9577	9576	9575	9574	9573	9572	2868	2871	2874	2876	2879	2882	2885	2888	2890	2893	1
2	9160	9158	9156	9155	9153	9151	9150	9148	9146	19145	5736	5742	5747	5753	5758	5764	5769	5775	5781	5786	2
3	8740	8737	8735	8732	8730	8727	8725	8722	8720	28717	8604	8612	8621	8629	8638	8646	8654	8663	8671	8679	3
4	8320	8316	8313	8310	8306	8303	8300	8296	8293	38289	1472	1483	1494	1506	1517	1528	1539	1550	1561	1572	4
5	7899	7895	7891	7887	7883	7879	7874	7870	7866	47862	14340	4354	4368	4382	4396	4410	4424	4438	4452	4466	5
6	7479	7474	7469	7464	7459	7454	7449	7444	7439	57434	17208	7225	7242	7258	7275	7292	7308	7325	7342	7359	6
7	7059	7053	7048	7042	7036	7030	7024	7018	7012	67006	20076	0096	0115	0135	0154	0174	0193	0213	0232	0252	7
8	6639	6632	6626	6619	6612	6606	6599	6592	6586	76579	22944	2967	2989	3011	3033	3056	3078	3100	3123	3145	8
9	6219	6212	6204	6197	6189	6181	6174	6166	6159	86151	25812	5837	5862	5888	5913	5938	5963	5988	6013	6038	9
10	5799	5791	5782	5774	5766	5757	5749	5740	5732	95724	28680	8708	8736	8764	8792	8820	8847	8875	8903	8931	10
11	5379	5370	5360	5351	5342	5333	5324	5314	5305	105296	31548	1579	1610	1640	1671	1702	1732	1763	1793	1824	11
12	4959	4949	4939	4929	4919	4909	4899	4888	4878	114868	34416	4450	4483	4517	4550	4584	4617	4650	4684	4717	12
13	4539	4528	4517	4506	4495	4484	4473	4462	4452	124441	37284	7321	7357	7393	7429	7466	7502	7538	7574	7610	13
14	4119	4107	4095	4083	4072	4060	4048	4036	4025	134013	40152	0191	0230	0269	0308	0347	0386	0425	0464	0503	14
15	3699	3686	3673	3661	3648	3636	3623	3611	3598	143585	43020	3062	3104	3146	3188	3229	3271	3313	3355	3397	15
16	3278	3265	3252	3238	3225	3211	3198	3185	3171	153158	45889	5933	5978	6022	6067	6111	6156	6201	6245	6290	16
17	2858	2844	2830	2816	2801	2787	2773	2759	2744	162730	48757	8804	8851	8899	8946	8993	9041	9088	9135	9183	17
18	2438	2423	2408	2393	2378	2363	2348	2333	2318	172302	51625	1675	1725	1775	1825	1875	1925	1976	2026	2076	18
19	2018	2002	1986	1970	1954	1939	1923	1907	1891	181875	54493	4546	4598	4651	4704	4757	4810	4863	4916	4969	19
20	1598	1581	1565	1548	1531	1514	1498	1481	1464	191447	57361	7416	7472	7528	7584	7639	7695	7751	7806	7862	20
21	1178	1160	1143	1125	1108	1090	1072	1055	1037	201019	60229	0287	0346	0404	0463	0521	0580	0638	0697	0755	21
22	0758	0739	0721	0703	0684	0666	0647	0629	0610	210592	63097	3158	3219	3281	3342	3403	3464	3526	3587	3648	22
23	0338	0318	0299	0280	0261	0241	0222	0203	0183	220164	65965	6029	6093	6157	6221	6285	6349	6413	6477	6541	23
24	9917	9897	9877	9857	9837	9817	9797	9777	9757	229736	68833	8900	8967	9033	9100	9167	9234	9301	9368	9434	24
25	9497	9477	9456	9435	9414	9393	9372	9351	9330	239309	71701	1770	1840	1910	1979	2049	2119	2188	2258	2328	25
26	9077	9056	9034	9012	8990	8969	8947	8925	8903	248881	74569	4641	4714	4786	4859	4931	5003	5076	5148	5221	26
27	8657	8635	8612	8590	8567	8544	8522	8499	8476	258454	77437	7512	7587	7663	7738	7813	7888	7963	8039	8114	27
28	8237	8214	8190	8167	8143	8120	8097	8073	8049	268026	80305	0383	0461	0539	0617	0695	0773	0851	0929	1007	28
29	7817	7793	7769	7744	7720	7696	7671	7647	7623	277598	83173	3254	3335	3415	3496	3577	3658	3738	3819	3900	29
30	7397	7372	7347	7322	7297	7271	7246	7221	7196	287171	86041	6125	6208	6292	6375	6459	6542	6626	6710	6793	30
31	6977	6951	6925	6899	6873	6847	6821	6795	6769	296743	88909	8995	9082	9168	9254	9341	9427	9514	9600	9686	31
32	6557	6530	6503	6476	6450	6423	6396	6369	6342	306315	91777	1866	1955	2045	2134	2223	2312	2401	2490	2579	32
33	6137	6109	6081	6054	6026	5999	5971	5943	5915	315888	94645	4737	4829	4921	5013	5105	5197	5289	5380	5472	33
34	5716	5688	5660	5631	5603	5574	5546	5517	5489	325460	97513	7608	7703	7797	7892	7987	8081	8176	8271	8366	34
35	5296	5267	5238	5209	5179	5150	5121	5091	5062	335032	10381	0479	0576	0674	0771	0869	0966	1064	1161	1259	35
36	4876	4846	4816	4786	4756	4726	4696	4666	4635	344605	103249	3349	3450	3550	3650	3751	3851	3951	4051	4152	36
37	4456	4425	4394	4363	4332	4301	4270	4239	4208	354177	106117	6220	6323	6426	6530	6633	6735	6839	6942	7045	37
38	4036	4004	3973	3941	3909	3877	3845	3813	3781	363749	108985	9091	9197	9303	9409	9515	9620	9726	9832	9938	38
39	3616	3583	3551	3518	3486	3453	3420	3387	3355	373322	111853	1962	2071	2179	2288	2397	2505	2614	2722	2831	39
40	3196	3162	3129	3096	3062	3029	2995	2961	2928	382894	114721	4833	4944	5056	5167	5279	5390	5501	5613	5724	40
41	2776	2741	2707	2673	2639	2604	2570	2535	2501	392467	117589	7704	7818	7932	8046	8160	8275	8389	8503	8617	41
42	2356	2321	2285	2250	2215	2180	2145	2109	2074	402039	120457	0574	0691	0808	0925	1042	1159	1276	1393	1510	42
43	1935	1900	1864	1828	1792	1756	1720	1684	1647	411611	123325	3445	3565	3685	3805	3924	4044	4164	4284	4403	43
44	1515	1479	1442	1405	1368	1331	1295	1258	1221	421184	126193	6316	6439	6561	6684	6806	6929	7051	7174	7297	44
45	1095	1058	1020	983	945	907	869	832	794	430756	129061	9187	9312	9438	9563	9688	9814	9939	10064	10190	45
46	0675	0637	0598	0560	0521	0483	0444	0406	0367	440328	131929	2058	2186	2314	2442	2570	2698	2827	2955	3083	46
47	0255	0216	0177	0137	0098	0059	0019	9980	9940	449901	134798	4928	5059	5190	5321	5452	5583	5714	5845	5976	47
48	9835	9795	9755	9715	9674	9634	9594	9554	9513	459473	137666	7799	7933	8067	8200	8334	8468	8602	8735	8869	48
49	9415	9374	9333	9292	9251	9210	9169	9128	9087	469045	140534	0670	0807	0943	1080	1216	1353	1489	1626	1762	49
50	8995	8953	8911	8869	8828	8786	8744	8702	8660	478618	143402	3541	3680	3820	3959	4098	4237	4377	4516	4655	50
51	8575	8532	8489	8447	8404	8361	8319	8276	8233	488190	146270	6412	6554	6696	6838	6980	7122	7264	7406	7548	51
52	8155	8111	8068	8024	7981	7937	7894	7850	7806	497762	149138	9283	9427	9572	9717	9862	10007	10152	10297	10441	52
53	7734	7690	7646	7602	7557	7513	7468	7424	7379	507335	152006	2153	2301	2449	2596	2744	2892	3039	3187	3334	53
54	7314	7269	7224	7179	7134	7089	7043	6998	6953	516907	154874	5024	5175	5325	5476	5626	5776	5927	6077	6228	54
55	6894	6848	6802	6756	6710	6664	6618	6572	6526	526479	157742	7895	8048	8202	8355	8508	8661	8814	8967	9121	55
56	6474	6427	6381	6334	6287	6240	6193	6146	6099	536052	160610	0766	0922	1078	1234	1390	1546	1702	1858	2014	56
57	6054	6006	5959	5911	5863	5816	5768	5720	5672	545624	163478	3637	3795	3954	4113	4272	4431	4589	4748	4907	57
58	5634	5585	5537	5489	5440	5391	5343	5294	5245	555197	166346	6508	6669	6831	6992	7154	7315	7477	7638	7800	58
59	5214	5165	5115	5066	5017	4967	4918	4868	4819	564769	169214	9378	9543	9707	9871	10036	10200	10364	10529	10693	59
60	4794	4744	4694	4643	4593	4543	4493	4442	4392	574341	172082	2249	2416	2583	2751	2918	3085	3252	341		

TRAVERSE TABLES.

Table with columns for angles (16° to 73°), Cosine, and Sine values. The table is organized into two main sections: Cosine (left) and Sine (right), with rows corresponding to angles from 16° to 73°.

TRAVERSE TABLES.

17°	COSINE.										SINE.										17°
	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	
1	9563	9562	9561	9560	9560	9559	9558	9557	9556	9555	2924	2926	2929	2932	2935	2938	2940	2943	2946	2949	1
2	9126	9124	9123	9121	9119	9118	9116	9114	9112	9111	5847	5853	5859	5864	5870	5875	5881	5886	5892	5897	2
3	8689	8687	8684	8681	8679	8676	8674	8671	8669	8666	8771	8779	8788	8796	8805	8813	8821	8830	8838	8846	3
4	8252	8249	8245	8242	8239	8235	8232	8228	8225	8221	11695	11706	11717	11728	11739	11750	11762	11773	11784	11795	4
5	7815	7811	7807	7802	7798	7794	7790	7785	7781	7777	14619	14632	14646	14660	14674	14688	14702	14716	14730	14744	5
6	7378	7373	7368	7363	7358	7353	7348	7342	7337	7332	17542	17559	17576	17592	17609	17626	17642	17659	17676	17692	6
7	6941	6935	6929	6923	6917	6911	6906	6900	6894	6888	20466	20485	20505	20524	20544	20563	20583	20602	20622	20641	7
8	6504	6498	6491	6484	6477	6470	6463	6455	6448	6443	23390	23412	23434	23456	23479	23501	23523	23545	23568	23590	8
9	6067	6060	6052	6044	6037	6029	6021	6014	6006	6000	26313	26338	26364	26390	26416	26443	26470	26498	26526	26554	9
10	5630	5622	5613	5605	5596	5588	5579	5571	5562	5554	29237	29265	29293	29321	29348	29376	29404	29432	29460	29487	10
11	5194	5184	5175	5165	5156	5147	5137	5128	5118	5109	32161	32191	32222	32253	32283	32314	32344	32375	32406	32436	11
12	4757	4746	4736	4726	4716	4705	4695	4685	4675	4664	35085	35118	35151	35185	35218	35251	35285	35318	35352	35385	12
13	4320	4309	4297	4286	4275	4264	4253	4242	4231	4220	38008	8044	8081	8117	8153	8189	8225	8261	8298	8334	13
14	3883	3871	3859	3847	3835	3823	3811	3799	3787	3775	40932	40971	41010	41049	41088	41127	41166	41205	41243	41282	14
15	3446	3433	3420	3407	3395	3382	3369	3356	3343	3330	43856	43897	43939	43981	44023	44064	44106	44148	44189	44231	15
16	3009	2995	2982	2968	2954	2941	2927	2913	2899	2886	46779	46824	46868	46913	46957	47002	47046	47091	47135	47180	16
17	2572	2557	2543	2528	2514	2499	2485	2470	2456	2441	49703	49750	49798	49845	49892	49940	49987	50034	50081	50129	17
18	2135	2120	2104	2089	2074	2058	2043	2027	2012	171996	52627	52677	52727	52777	52827	52877	52927	52977	53027	53077	18
19	1698	1682	1666	1649	1633	1617	1601	1584	1568	181552	55551	55603	55656	55709	55762	55815	55868	55920	55973	56026	19
20	1261	1244	1227	1210	1193	1176	1159	1141	1124	191107	58474	58530	58586	58641	58697	58752	58808	58864	58919	58975	20
21	0824	0806	0788	0770	0752	0734	0717	0699	0681	200663	61398	61456	61515	61573	61632	61690	61748	61807	61865	61924	21
22	0387	0368	0350	0331	0312	0293	0274	0256	0237	210218	64322	64383	64444	64505	64567	64628	64689	64750	64811	64872	22
23	9950	9931	9911	9891	9872	9852	9832	9813	9793	219773	67245	67309	67373	67437	67501	67565	67629	67693	67757	67821	23
24	9513	9493	9472	9452	9431	9411	9390	9370	9349	229329	70169	70236	70303	70369	70436	70503	70570	70637	70703	70770	24
25	9076	9055	9034	9012	8991	8970	8948	8927	8905	238884	73093	73162	73232	73302	73371	73441	73510	73580	73649	73719	25
26	8639	8617	8595	8573	8551	8528	8506	8484	8462	248439	76017	76089	76161	76234	76306	76378	76450	76523	76595	76667	26
27	8202	8179	8156	8133	8110	8087	8064	8041	8018	257995	78940	79015	79091	79166	79241	79316	79391	79466	79541	79616	27
28	7765	7742	7718	7694	7670	7646	7622	7598	7574	267550	81864	81942	82020	82098	82176	82253	82331	82409	82487	82565	28
29	7328	7304	7279	7254	7230	7205	7180	7155	7130	277105	84788	84868	84949	85030	85110	85191	85272	85352	85433	85514	29
30	6891	6866	6840	6815	6789	6764	6738	6712	6687	286661	87712	87795	87878	7962	8045	8129	8212	8295	8379	8462	30
31	6454	6428	6402	6375	6349	6322	6296	6269	6243	296216	90635	90721	90808	90894	90980	91066	91152	91239	91325	91411	31
32	6018	5990	5963	5936	5908	5881	5854	5826	5799	305772	93559	93648	93737	93826	93915	94004	94093	94182	94271	94360	32
33	5581	5553	5524	5496	5468	5440	5412	5383	5355	315327	96483	96574	96666	96758	96850	96942	97033	97125	97217	97309	33
34	5144	5115	5086	5057	5028	4999	4970	4941	4911	324882	99406	99501	99596	99690	99785	99879	99974	100068	100163	100257	34
35	4707	4677	4647	4617	4587	4557	4528	4498	4468	334438	102330	2427	2525	2622	2719	2817	2914	3011	3109	3206	35
36	4270	4239	4208	4178	4147	4116	4085	4055	4024	343993	105254	5354	5454	5554	5654	5754	5855	5955	6055	6155	36
37	3833	3801	3770	3738	3707	3675	3643	3612	3580	353548	108178	8280	8383	8486	8589	8692	8795	8898	9001	9103	37
38	3396	3363	3331	3299	3266	3234	3201	3169	3136	363104	111101	1207	1313	1418	1524	1630	1735	1841	1947	2052	38
39	2959	2926	2892	2859	2826	2793	2759	2726	2693	372659	114025	4133	4242	4350	4459	4567	4676	4784	4893	5001	39
40	2522	2488	2454	2420	2386	2351	2317	2283	2249	382214	116949	7060	7171	7282	7394	7505	7616	7727	7839	7950	40
41	2085	2050	2015	1980	1945	1910	1875	1840	1805	391770	119872	9986	1000	10215	10329	10443	10557	10671	10784	10898	41
42	1648	1612	1576	1541	1505	1469	1433	1397	1361	401325	122796	2913	3030	3147	3263	3380	3497	3614	3730	3847	42
43	1211	1174	1138	1101	1064	1028	991	954	917	410881	125720	5839	5959	6079	6198	6318	6437	6557	6676	6796	43
44	0774	0737	0699	0662	0624	0587	0549	0511	0474	420436	128644	8766	8888	9011	9133	9255	9378	9500	9622	9745	44
45	0337	0299	0261	0222	0184	0145	0107	0068	0030	430991	131567	1692	1818	1943	2068	2193	2318	2443	2568	2693	45
46	9900	9861	9822	9783	9743	9704	9665	9625	9586	439547	134491	4619	4747	4875	5003	5131	5259	5386	5514	5642	46
47	9463	9423	9383	9343	9303	9263	9223	9182	9142	449102	137415	7545	7676	7807	7938	8068	8199	8330	8460	8591	47
48	9026	8985	8945	8904	8863	8822	8781	8740	8698	458657	140338	10472	10605	10739	10872	11006	11139	11273	11406	11540	48
49	8589	8548	8506	8464	8422	8380	8339	8297	8255	468213	143262	13398	13535	13671	13807	13944	14080	14216	14352	14488	49
50	8152	8110	8067	8025	7982	7939	7897	7854	7811	477768	146186	16325	16464	16603	16742	16881	17020	17159	17298	17437	50
51	7715	7672	7629	7585	7542	7498	7454	7411	7367	487323	149110	9251	9393	9535	9677	9819	9961	10102	10244	10386	51
52	7278	7234	7190	7146	7101	7057	7012	6968	6923	496879	152033	2178	2323	2467	2612	2756	2901	3046	3190	3335	52
53	6842	6796	6751	6706	6661	6616	6570	6525	6480	506434	154957	5104	5252	5399	5547	5694	5841	5989	6136	6283	53
54	6405	6359	6313	6267	6221	6174	6128	6082	6036	515989	157881	8031	8181	8331	8481	8632	8782	8932	9082	9232	54
55	5968	5921	5874	5827	5780	5733	5686	5639	5592	525545	160804	10957	11110	1263	1416	1569	1722	1875	2028	2181	55
56	5531	5483	5435	5388	5340	5292	5244	5196	5148	535100	163728	3884	4040	4195	4351	4507	4663	4818	4974	5130	56
57	5094	5045	4997	4948	4899	4851	4802	4753	4704	544656	166652	6810	6969	7127	7286	7445	7603	7761	7920	8078	57
58	4657	4607	4558	4509	4459	4410	4360	4310	4261	554211	169576	9737	9898	10060	10221	10382	10543	10705	10866	11027	58
59	4220	4170	4119	4069	4019	3968	3918	3867	3817	563766	172499	2663									

TRAVERSE TABLES.

17° COSINE. SINE. 17°

72°

SINE.

COSINE.

72°

TRAVERSE TABLES.

17°											COSINE.											SINE.											17°										
	20'	21'	22'	23'	24'	25'	26'	27'	28'	29'		20'	21'	22'	23'	24'	25'	26'	27'	28'	29'		20'	21'	22'	23'	24'	25'	26'	27'	28'	29'		20'	21'	22'	23'	24'	25'	26'	27'	28'	29'
1	9546	9545	9544	9543	9542	9542	9541	9540	9539	9538		2979	2982	2985	2988	2990	2993	2996	2999	3002	3004	1	2979	2982	2985	2988	2990	2993	2996	2999	3002	3004	1	2979	2982	2985	2988	2990	2993	2996	2999	3002	3004
2	9092	9090	9088	9087	9085	9083	9081	9080	9078	1'9076		5959	5964	5970	5975	5981	5986	5992	5997	6003	6009	2	5959	5964	5970	5975	5981	5986	5992	5997	6003	6009	2	5959	5964	5970	5975	5981	5986	5992	5997	6003	6009
3	8638	8635	8632	8630	8627	8625	8622	8619	8617	2'8614		8938	8946	8955	8963	8971	8980	8988	8996	9005	9013	3	8938	8946	8955	8963	8971	8980	8988	8996	9005	9013	3	8938	8946	8955	8963	8971	8980	8988	8996	9005	9013
4	8184	8180	8177	8173	8170	8166	8163	8159	8156	3'8152		1'1917	1928	1939	1951	1962	1973	1984	1995	2006	2017	4	1'1917	1928	1939	1951	1962	1973	1984	1995	2006	2017	4	1'1917	1928	1939	1951	1962	1973	1984	1995	2006	2017
5	7729	7725	7721	7716	7712	7708	7703	7699	7695	4'7690		1'4897	4910	4924	4938	4952	4966	4980	4994	5008	5021	5	1'4897	4910	4924	4938	4952	4966	4980	4994	5008	5021	5	1'4897	4910	4924	4938	4952	4966	4980	4994	5008	5021
6	7275	7270	7265	7260	7254	7249	7244	7239	7234	5'7228		1'7876	7892	7909	7926	7942	7959	7976	7992	8009	8026	6	1'7876	7892	7909	7926	7942	7959	7976	7992	8009	8026	6	1'7876	7892	7909	7926	7942	7959	7976	7992	8009	8026
7	6821	6815	6809	6803	6797	6791	6785	6779	6772	6'6766		2'0855	0875	0894	0913	0933	0952	0972	0991	1011	1030	7	2'0855	0875	0894	0913	0933	0952	0972	0991	1011	1030	7	2'0855	0875	0894	0913	0933	0952	0972	0991	1011	1030
8	6367	6360	6353	6346	6339	6332	6325	6318	6311	7'6304		2'3834	3857	3879	3901	3923	3945	3968	3990	4012	4034	8	2'3834	3857	3879	3901	3923	3945	3968	3990	4012	4034	8	2'3834	3857	3879	3901	3923	3945	3968	3990	4012	4034
9	5913	5905	5897	5889	5882	5874	5866	5858	5850	8'5842		2'6814	6839	6864	6889	6914	6939	6964	6989	7014	7039	9	2'6814	6839	6864	6889	6914	6939	6964	6989	7014	7039	9	2'6814	6839	6864	6889	6914	6939	6964	6989	7014	7039
10	5459	5450	5441	5433	5424	5415	5407	5398	5389	9'5380		2'9793	9821	9849	9876	9904	9932	9960	9987	1015	1043	10	2'9793	9821	9849	9876	9904	9932	9960	9987	1015	1043	10	2'9793	9821	9849	9876	9904	9932	9960	9987	1015	1043
11	5005	4995	4986	4976	4966	4957	4947	4938	4928	10'4918		3'2772	2803	2833	2864	2894	2925	2956	2986	3017	3047	11	3'2772	2803	2833	2864	2894	2925	2956	2986	3017	3047	11	3'2772	2803	2833	2864	2894	2925	2956	2986	3017	3047
12	4551	4540	4530	4519	4509	4498	4488	4477	4467	11'4457		3'5752	5785	5818	5852	5885	5918	5952	5985	6018	6051	12	3'5752	5785	5818	5852	5885	5918	5952	5985	6018	6051	12	3'5752	5785	5818	5852	5885	5918	5952	5985	6018	6051
13	4096	4085	4074	4063	4051	4040	4029	4017	4006	12'3995		3'8731	8767	8803	8839	8875	8911	8947	8984	9020	9056	13	3'8731	8767	8803	8839	8875	8911	8947	8984	9020	9056	13	3'8731	8767	8803	8839	8875	8911	8947	8984	9020	9056
14	3642	3630	3618	3606	3594	3581	3569	3557	3545	13'3533		4'1710	1749	1788	1827	1866	1905	1943	1982	2021	2060	14	4'1710	1749	1788	1827	1866	1905	1943	1982	2021	2060	14	4'1710	1749	1788	1827	1866	1905	1943	1982	2021	2060
15	3188	3175	3162	3149	3136	3123	3110	3097	3084	14'3071		4'4690	4731	4773	4814	4856	4898	4939	4981	5023	5064	15	4'4690	4731	4773	4814	4856	4898	4939	4981	5023	5064	15	4'4690	4731	4773	4814	4856	4898	4939	4981	5023	5064
16	2734	2720	2706	2692	2678	2665	2651	2637	2623	15'2609		4'7669	7713	7758	7802	7847	7891	7935	7980	8024	8069	16	4'7669	7713	7758	7802	7847	7891	7935	7980	8024	8069	16	4'7669	7713	7758	7802	7847	7891	7935	7980	8024	8069
17	2280	2265	2250	2236	2221	2206	2191	2176	2162	16'2147		5'0648	0695	0743	0790	0837	0884	0931	0978	1026	1073	17	5'0648	0695	0743	0790	0837	0884	0931	0978	1026	1073	17	5'0648	0695	0743	0790	0837	0884	0931	0978	1026	1073
18	1826	1810	1795	1779	1763	1748	1732	1716	1701	17'1685		5'3627	3677	3727	3777	3827	3877	3927	3977	4027	4077	18	5'3627	3677	3727	3777	3827	3877	3927	3977	4027	4077	18	5'3627	3677	3727	3777	3827	3877	3927	3977	4027	4077
19	1372	1355	1339	1322	1306	1289	1273	1256	1239	18'1223		5'6607	6660	6712	6765	6818	6870	6923	6976	7029	7081	19	5'6607	6660	6712	6765	6818	6870	6923	6976	7029	7081	19	5'6607	6660	6712	6765	6818	6870	6923	6976	7029	7081
20	0918	0900	0883	0865	0848	0831	0813	0796	0778	19'0761		5'9586	9642	9697	9753	9808	9864	9919	9975	10030	10086	20	5'9586	9642	9697	9753	9808	9864	9919	9975	10030	10086	20	5'9586	9642	9697	9753	9808	9864	9919	9975	10030	10086
21	0463	0445	0427	0409	0390	0372	0354	0336	0317	20'0299		6'2565	2624	2682	2740	2799	2857	2915	2973	3032	3090	21	6'2565	2624	2682	2740	2799	2857	2915	2973	3032	3090	21	6'2565	2624	2682	2740	2799	2857	2915	2973	3032	3090
22	0009	9990	9971	9952	9933	9914	9895	9875	9856	20'9837		6'5545	5606	5667	5728	5789	5850	5911	5972	6033	6094	22	6'5545	5606	5667	5728	5789	5850	5911	5972	6033	6094	22	6'5545	5606	5667	5728	5789	5850	5911	5972	6033	6094
23	9555	9535	9515	9495	9475	9455	9435	9415	9395	21'9375		6'8524	8588	8652	8716	8779	8843	8907	8971	9035	9099	23	6'8524	8588	8652	8716	8779	8843	8907	8971	9035	9099	23	6'8524	8588	8652	8716	8779	8843	8907	8971	9035	9099
24	9101	9080	9059	9039	9018	8997	8976	8955	8934	22'8913		7'1503	1570	1637	1703	1770	1836	1903	1970	2036	2103	24	7'1503	1570	1637	1703	1770	1836	1903	1970	2036	2103	24	7'1503	1570	1637	1703	1770	1836	1903	1970	2036	2103
25	8647	8625	8604	8582	8560	8538	8517	8495	8473	23'8451		7'4483	4552	4621	4691	4760	4830	4899	4968	5038	5107	25	7'4483	4552	4621	4691	4760	4830	4899	4968	5038	5107	25	7'4483	4552	4621	4691	4760	4830	4899	4968	5038	5107
26	8193	8170	8148	8125	8102	8080	8057	8035	8012	24'7989		7'7462	7534	7606	7678	7751	7823	7895	7967	8039	8111	26	7'7462	7534	7606	7678	7751	7823	7895	7967	8039	8111	26	7'7462	7534	7606	7678	7751	7823	7895	7967	8039	8111
27	7739	7715	7692	7668	7645	7621	7598	7574	7551	25'7527		8'0441	0516	0591	0666	0741	0816	0891	0966	1041	1116	27	8'0441	0516	0591	0666	0741	0816	0891	0966	1041	1116	27	8'0441	0516	0591	0666	0741	0816	0891	0966	1041	1116
28	7285	7260	7236	7212	7187	7163	7139	7114	7090	26'7065		8'3420	3498	3576	3654	3731	3809	3887	3965	4042	4120	28	8'3420	3498	3576	3654	3731	3809	3887	3965	4042	4120	28	8'3420	3498	3576	3654	3731	3809	3887	3965	4042	4120
29	6830	6805	6780	6755	6730	6704	6679	6654	6629	27'6603		8'6400	6480	6561	6641	6722	6802	6883	6963	7044	7124	29	8'6400	6480	6561	6641	6722	6802	6883	6963	7044	7124	29	8'6400	6480	6561	6641	6722	6802	6883	6963	7044	7124
30	6376	6350	6324	6298	6272	6246	6220	6194	6168	28'6141		8'9379	9462	9546	9629	9712	9796	9879	9962	10045	10129	30	8'9379	9462	9546	9629	9712	9796	9879	9962	10045	10129	30	8'9379	9462	9546	9629	9712	9796	9879			

TRAVERSE TABLES.

17°	COSINE.										SINE.										17°
	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	
	1	9537	9536	9535	9535	9534	9533	9532	9531	9530	9529	3007	3010	3013	3015	3018	3021	3024	3026	3029	
2	9074	9073	9071	9069	9067	9066	9064	9062	9060	19059	6014	6020	6025	6031	6036	6042	6047	6053	6058	6064	2
3	8612	8609	8606	8604	8601	8598	8596	8593	8590	28588	9021	9029	9038	9046	9054	9063	9071	9079	9088	9096	3
4	8149	8145	8142	8138	8135	8131	8128	8124	8121	38117	12028	2039	2050	2062	2073	2084	2095	2107	2117	2128	4
5	7686	7681	7677	7673	7668	7664	7660	7655	7651	47646	15035	5049	5063	5077	5091	5105	5118	5132	5146	5160	5
6	7223	7218	7213	7207	7202	7197	7191	7186	7181	57176	18042	8059	8076	8092	8109	8126	8142	8159	8175	8192	6
7	6760	6754	6748	6742	6736	6730	6723	6717	6711	6705	21049	1069	1088	1108	1127	1146	1166	1185	1205	1224	7
8	6297	6290	6283	6276	6269	6262	6255	6248	6241	76234	24056	4079	4101	4123	4145	4167	4190	4212	4234	4256	8
9	5835	5827	5819	5811	5803	5795	5787	5779	5771	85763	27064	7088	7113	7138	7163	7188	7213	7238	7263	7288	9
10	5372	5363	5354	5345	5337	5328	5319	5310	5301	95293	30071	0098	0126	0154	0182	0209	0237	0265	0292	0320	10
11	4909	4899	4890	4880	4870	4861	4851	4841	4832	104822	33078	3108	3139	3169	3200	3230	3261	3291	3322	3352	11
12	4446	4436	4425	4415	4404	4393	4383	4372	4362	114351	36085	6118	6151	6185	6218	6251	6284	6318	6351	6384	12
13	3983	3972	3960	3949	3938	3926	3915	3903	3892	123880	39092	9128	9164	9200	9236	9272	9308	9344	9380	9416	13
14	3520	3508	3496	3484	3471	3459	3447	3434	3422	133410	42099	2138	2176	2215	2254	2293	2332	2371	2409	2448	14
15	3058	3044	3031	3018	3005	2992	2979	2965	2952	142939	45106	5147	5189	5231	5272	5314	5355	5397	5439	5480	15
16	2595	2581	2567	2553	2539	2525	2511	2496	2482	152468	48113	8157	8202	8246	8290	8335	8379	8424	8468	8512	16
17	2132	2117	2102	2087	2072	2057	2042	2027	2012	161997	51120	1167	1214	1261	1309	1356	1403	1450	1497	1544	17
18	1669	1653	1638	1622	1606	1590	1574	1558	1543	171527	54127	4177	4227	4277	4327	4377	4427	4476	4526	4576	18
19	1206	1190	1173	1156	1140	1123	1106	1090	1073	181056	57134	7187	7240	7292	7345	7398	7450	7503	7556	7608	19
20	0743	0726	0708	0691	0673	0656	0638	0621	0603	190585	60141	0197	0252	0308	0363	0419	0474	0529	0585	0640	20
21	0281	0262	0244	0225	0207	0189	0170	0152	0133	200115	63148	3206	3265	3323	3381	3439	3498	3556	3614	3672	21
22	9818	9798	9779	9760	9741	9721	9702	9683	9663	209644	66155	6216	6277	6338	6399	6460	6521	6582	6643	6704	22
23	9355	9335	9315	9294	9274	9254	9234	9214	9193	219173	69162	9226	9290	9354	9418	9481	9545	9609	9673	9736	23
24	8892	8871	8850	8829	8808	8787	8766	8745	8724	228702	72169	2236	2303	2369	2436	2502	2569	2635	2702	2768	24
25	8429	8407	8385	8364	8342	8320	8298	8276	8254	238232	75176	5246	5315	5385	5454	5523	5592	5662	5731	5800	25
26	7966	7944	7921	7898	7875	7852	7830	7807	7784	247761	78184	8256	8328	8400	8472	8544	8616	8688	8760	8832	26
27	7504	7480	7456	7433	7409	7385	7361	7338	7314	257290	81191	1265	1340	1415	1490	1565	1640	1715	1790	1864	27
28	7041	7016	6992	6967	6943	6918	6893	6869	6844	266819	84198	4275	4353	4431	4508	4586	4664	4741	4819	4896	28
29	6578	6553	6527	6502	6476	6451	6425	6400	6374	276349	87205	2285	7366	7446	7526	7607	7687	7768	7848	7928	29
30	6115	6089	6063	6036	6010	5984	5957	5931	5904	285878	90212	0295	0378	0461	0545	0628	0711	0794	0877	0960	30
31	5652	5625	5598	5571	5544	5516	5489	5462	5435	295407	93219	3305	3391	3477	3563	3649	3735	3821	3907	3992	31
32	5189	5161	5133	5105	5077	5049	5021	4993	4965	304936	96226	6315	6403	6492	6581	6670	6758	6847	6936	7025	32
33	4727	4698	4669	4640	4611	4582	4553	4524	4495	314466	99233	9324	9416	9508	9599	9691	9782	9874	9965	10057	33
34	4264	4234	4204	4174	4144	4115	4085	4055	4025	323995	102240	2334	2429	2523	2617	2711	2806	2900	2994	3089	34
35	3801	3770	3740	3709	3678	3648	3617	3586	3555	333524	105247	5344	5441	5538	5635	5732	5829	5926	6024	6121	35
36	3338	3307	3275	3244	3212	3180	3149	3117	3085	343054	108254	8354	8454	8554	8654	8753	8853	8953	9053	9153	36
37	2875	2843	2810	2778	2746	2713	2681	2648	2615	352583	111261	1364	1466	1569	1672	1774	1877	1979	2082	2185	37
38	2412	2379	2346	2313	2279	2246	2212	2179	2146	362112	114268	4374	4479	4584	4690	4795	4901	5006	5111	5217	38
39	1950	1915	1881	1847	1813	1779	1744	1710	1676	371641	117275	7383	7492	7600	7708	7816	7924	8032	8141	8249	39
40	1487	1452	1417	1382	1347	1311	1276	1241	1206	381170	120282	0393	0504	0615	0726	0837	0948	1059	1170	1281	40
41	1024	0988	0952	0916	0880	0844	0808	0772	0736	390700	123289	3403	3517	3631	3744	3858	3972	4085	4199	4313	41
42	0561	0524	0488	0451	0414	0377	0340	0303	0266	400229	126296	6413	6529	6646	6762	6879	6995	7112	7228	7345	42
43	0098	0061	0023	9985	9948	9910	9872	9834	9796	409758	129303	9423	9542	9661	9781	9900	10119	10338	10557	10776	43
44	9635	9597	9559	9520	9481	9443	9404	9365	9326	419288	132311	2433	2555	2677	2799	2921	3043	3165	3287	3409	44
45	9173	9133	9094	9054	9015	8975	8936	8896	8857	428817	135318	5442	5567	5692	5817	5942	6066	6191	6316	6441	45
46	8710	8670	8629	8589	8549	8508	8468	8427	8387	438346	138325	8452	8580	8707	8835	8963	9090	9218	9345	9473	46
47	8247	8206	8165	8125	8084	8043	8002	7961	7919	447875	141332	1462	1592	1723	1853	1984	2114	2244	2374	2505	47
48	7784	7742	7700	7658	7616	7574	7532	7489	7447	457405	144339	4472	4605	4738	4871	5004	5138	5271	5404	5537	48
49	7321	7278	7235	7193	7150	7107	7063	7020	6977	466934	147346	7482	7618	7754	7889	8025	8161	8297	8433	8569	49
50	6859	6815	6771	6727	6683	6639	6595	6551	6507	476463	150353	0492	0630	0769	0908	1046	1185	1324	1462	1601	50
51	6396	6351	6306	6262	6217	6172	6127	6082	6037	485992	153360	3501	3643	3784	3926	4067	4209	4350	4491	4633	51
52	5933	5887	5842	5796	5751	5705	5659	5613	5568	495522	156367	6511	6656	6800	6944	7088	7232	7376	7521	7665	52
53	5470	5424	5377	5331	5284	5238	5191	5144	5098	505051	159374	9521	9668	9815	9962	10109	10256	10403	10550	10697	53
54	5007	4960	4913	4865	4818	4770	4723	4675	4628	514580	162381	2531	2681	2831	2980	3130	3280	3429	3579	3729	54
55	4544	4496	4448	4400	4352	4303	4255	4206	4158	524110	165388	5541	5693	5846	5998	6151	6303	6456	6608	6761	55
56	4082	4032	3983	3934	3885	3836	3787	3738	3688	533639	168395	8551	8706	8861	9017	9172	9327	9482	9638	9793	56
57	3619	3569	3519	3469	3419	3369	3319	3269	3218	543168	171402	1560	1719	1877	2035	2193	2351	2509	2667	2825	57
58	3156	3105	3054	3003	2953	2902	2851	2800	2748	552697	174409	4570	4731	4892	5053	5214	5375	5535	5696	5857	58
59	2693	2641	2590	2538	2486	2434	2383	2331	2279	562227	177416	7580	7744	7907	8						

TRAVERSE TABLES.

17°	COSINE.										SINE.										17°
	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	
	1	9528	9527	9527	9526	9525	9524	9523	9522	9521	9520	3035	3038	3040	3043	3046	3049	3051	3054	3057	
2	9057	9055	9053	9051	9050	9048	9046	9044	9043	1'9041	6070	6075	6081	6086	6092	6097	6103	6108	6114	6119	
3	8585	8582	8580	8577	8575	8572	8569	8567	8564	2'8561	9104	9113	9121	9129	9138	9146	9154	9163	9171	9179	
4	8114	8110	8106	8103	8099	8096	8092	8089	8085	3'8082	1'2139	2150	2161	2172	2183	2195	2206	2217	2228	2239	
5	7642	7637	7633	7629	7624	7620	7615	7611	7606	4'7602	1'5174	5188	5202	5216	5229	5243	5257	5271	5285	5299	
6	7170	7165	7160	7154	7149	7144	7138	7133	7128	5'7122	1'8209	8225	8242	8259	8275	8292	8308	8325	8342	8358	
7	6699	6692	6686	6680	6674	6668	6661	6655	6649	6'6643	2'1244	1263	1282	1302	1321	1341	1360	1379	1399	1418	
8	6227	6220	6213	6206	6199	6192	6185	6177	6170	7'6163	2'4278	4300	4323	4345	4367	4389	4411	4433	4456	4478	
9	5755	5747	5740	5732	5724	5716	5708	5700	5692	8'5684	2'7313	7338	7363	7388	7413	7438	7463	7488	7513	7538	
10	5284	5275	5266	5257	5248	5240	5231	5222	5213	9'5204	3'0348	0376	0403	0431	0459	0486	0514	0542	0570	0597	
11	4812	4802	4793	4783	4773	4764	4754	4744	4734	10'4724	3'3383	3413	3444	3474	3505	3535	3566	3596	3626	3657	
12	4341	4330	4319	4309	4298	4287	4277	4266	4255	11'4245	3'6417	6451	6484	6517	6550	6584	6617	6650	6683	6717	
13	3869	3857	3846	3834	3823	3811	3800	3788	3777	12'3765	3'9452	9488	9524	9560	9596	9632	9668	9704	9740	9776	
14	3397	3385	3373	3360	3348	3335	3323	3311	3298	13'3286	4'2487	2526	2565	2603	2642	2681	2720	2759	2797	2836	
15	2926	2912	2899	2886	2873	2859	2846	2833	2819	14'2806	4'5522	5563	5605	5647	5688	5730	5771	5813	5854	5896	
16	2454	2440	2426	2412	2398	2383	2369	2355	2341	15'2326	4'8557	8601	8645	8690	8734	8778	8823	8867	8911	8956	
17	1982	1967	1952	1937	1922	1907	1892	1877	1862	16'1847	5'1591	1639	1686	1733	1780	1827	1874	1921	1968	2015	
18	1511	1495	1479	1463	1447	1431	1415	1399	1383	17'1367	5'4626	4676	4726	4776	4826	4876	4925	4975	5025	5075	
19	1039	1022	1006	9899	9792	9685	9578	9471	9364	18'0888	5'7661	7714	7766	7819	7872	7924	7977	8029	8082	8135	
20	0568	0550	0532	0515	0497	0479	0461	0444	0426	19'0408	6'0696	0751	0807	0862	0917	0973	1028	1084	1139	1194	
21	0096	0077	0059	0040	0022	0003	9984	9966	9947	19'9928	6'3731	3789	3847	3905	3963	4022	4080	4138	4196	4254	
22	9624	9605	9586	9566	9547	9527	9508	9488	9468	20'9449	6'6765	6826	6887	6948	7009	7070	7131	7192	7253	7314	
23	9153	9132	9112	9092	9071	9051	9031	9010	8990	21'8969	6'9800	9864	9928	9991	1055	1119	1182	1246	1310	1374	
24	8681	8660	8639	8618	8596	8575	8554	8532	8511	22'8490	7'2835	2901	2968	3034	3101	3167	3234	3300	3367	3433	
25	8210	8187	8165	8143	8121	8099	8077	8055	8032	23'8010	7'5870	5939	6008	6078	6147	6216	6285	6355	6424	6493	
26	7738	7715	7692	7669	7646	7623	7600	7577	7554	24'7531	7'8904	8977	9049	9121	9193	9265	9337	9409	9481	9553	
27	7266	7242	7219	7195	7171	7147	7123	7099	7075	25'7051	8'1939	2014	2089	2164	2239	2313	2388	2463	2538	2613	
28	6795	6770	6745	6720	6696	6671	6646	6621	6596	26'6571	8'4974	5052	5129	5207	5284	5362	5440	5517	5595	5672	
29	6323	6297	6272	6246	6220	6195	6169	6143	6118	27'6092	8'8009	8089	8170	8250	8330	8411	8491	8571	8652	8732	
30	5851	5825	5798	5772	5745	5719	5692	5665	5639	28'5612	9'1044	1127	1210	1293	1376	1459	1542	1625	1709	1792	
31	5380	5352	5325	5298	5270	5243	5215	5188	5160	29'5133	9'4078	4164	4250	4336	4422	4508	4594	4680	4766	4851	
32	4908	4880	4852	4823	4795	4767	4738	4710	4681	30'4653	9'7113	7202	7291	7379	7468	7557	7645	7734	7822	7911	
33	4437	4407	4378	4349	4320	4291	4261	4232	4203	31'4173	10'0148	0239	0331	0422	0514	0605	0697	0788	0879	0971	
34	3965	3935	3905	3875	3845	3815	3784	3754	3724	32'3694	10'3183	3277	3371	3465	3560	3654	3748	3842	3936	4031	
35	3493	3462	3432	3401	3370	3339	3307	3276	3245	33'3214	10'6218	6315	6412	6509	6606	6703	6799	6896	6993	7090	
36	3022	2990	2958	2926	2894	2862	2831	2799	2767	34'2735	10'9252	9350	9452	9552	9651	9751	9851	9951	10050	10150	
37	2550	2517	2485	2452	2419	2386	2354	2321	2288	35'2255	11'2287	2392	2492	2595	2697	2800	2902	3005	3107	3210	
38	2079	2045	2011	1978	1944	1910	1877	1843	1809	36'1775	11'5322	5427	5533	5638	5743	5848	5954	6059	6164	6269	
39	1607	1572	1538	1503	1469	1434	1400	1365	1330	37'1296	11'8357	8465	8573	8681	8789	8897	9005	9113	9221	9329	
40	1135	1100	1065	1029	9934	9569	9203	8837	8471	38'0816	12'1392	1502	1613	1724	1835	1946	2057	2167	2278	2389	
41	0664	0627	0591	0555	0519	0482	0446	0410	0373	39'0337	12'4426	4540	4654	4767	4881	4994	5108	5222	5335	5449	
42	0192	0155	0118	0081	0043	0006	9969	9932	9894	39'9857	12'7461	7577	7694	7810	7927	8043	8159	8276	8392	8508	
43	9720	9682	9644	9606	9568	9530	9492	9454	9416	40'9377	13'0496	0615	0734	0853	0972	1092	1211	1330	1449	1568	
44	9249	9210	9171	9132	9093	9054	9015	8976	8937	41'8898	13'3531	3653	3775	3896	4018	4140	4262	4384	4506	4628	
45	8777	8737	8698	8658	8618	8578	8538	8498	8458	42'8418	13'6566	6690	6815	6940	7064	7189	7314	7438	7563	7688	
46	8306	8265	8224	8184	8143	8102	8061	8020	7980	43'7939	13'9600	9728	9855	9983	1110	1238	1365	1492	1620	1747	
47	7834	7792	7751	7709	7668	7626	7584	7543	7501	44'7459	14'2635	2765	2896	3026	3156	3286	3416	3547	3677	3807	
48	7362	7320	7278	7235	7193	7150	7107	7065	7022	45'6979	14'5670	5803	5936	6069	6202	6335	6468	6601	6734	6867	
49	6891	6847	6804	6761	6717	6674	6630	6587	6543	46'6500	14'8705	8840	8976	9112	9248	9384	9519	9655	9791	9926	
50	6419	6375	6331	6287	6242	6198	6154	6109	6065	47'6020	15'1739	1878	2017	2155	2294	2432	2571	2709	2848	2986	
51	5947	5902	5857	5812	5767	5722	5677	5631	5586	48'5541	15'4774	4916	5057	5198	5339	5481	5622	5763	5905	6046	
52	5476	5430	5384	5338	5292	5246	5200	5154	5107	49'5061	15'7809	7953	8097	8241	8385	8529	8673	8818	8962	9106	
53	5004	4957	4911	4864	4817	4770	4723	4676	4629	50'4581	16'0844	0991	1138	1284	1431	1578	1725	1872	2019	2165	
54	4533	4485	4437	4389	4342	4294	4246	4198	4150	51'4102	16'3879	4028	4178	4328	4477	4627	4776	4926	5075	5225	
55	4061	4012	3964	3915	3866	3818	3769	3720	3671	52'3622	16'6913	7066	7218	7371	7523	7675	7828	7980	8132	8285	
56	3589	3540	3490	3441	3391	3342	3292	3242	3192	53'3143	16'9948	1103	1259	1414	1569	1724	1879	2034	2189	2344	
57	3118	3067	3017	2967	2916	2866	2815	2764	2714	54'2663	17'2983	3141	3299	3457	3615	3773	3931	4088	4246	4404	
58	2646	2595	2544	2492	2441	2390	2338	2287	2235	55'2183	17'6018	6178	6339	6500	6661	6821	6982	7143	7303	7464	
59	2175	2122	2070	2018	1966	1914	1861	1809	1756	56'1704	17'9052	9216	9380	9543	9706	9870	10033	10197	10360	10524	
60	1703	1650	1597	1544	1491	1437	1384	1331	1278	57'1224	18'2087	2254	2420	2586	2752	2919	3085	3251	3417	3583	
61	1231	1177																			

TRAVERSE TABLES.

17°	COSINE.										SINE.										17°
	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	
1	9520	9519	9518	9517	9516	9515	9514	9513	9512	9511	3062	3065	3068	3071	3074	3076	3079	3082	3085	3087	1
2	9039	9037	9035	9034	9032	9030	9028	9027	9025	1'9023	6'125	6'131	6'136	6'142	6'147	6'153	6'158	6'164	6'169	6'175	2
3	8559	8556	8553	8551	8548	8545	8542	8540	8537	2'8534	9'187	9'196	9'204	9'212	9'221	9'229	9'237	9'246	9'254	9'262	3
4	8078	8074	8071	8067	8064	8060	8057	8053	8049	3'8046	1'2250	2'261	2'272	2'283	2'294	2'305	2'316	2'327	2'339	2'350	4
5	7598	7593	7589	7584	7580	7575	7571	7566	7562	4'7557	1'5312	5'326	5'340	5'354	5'368	5'382	5'396	5'409	5'423	5'437	5
6	7117	7112	7106	7101	7096	7090	7085	7080	7074	5'7069	1'8375	8'392	8'408	8'425	8'441	8'458	8'475	8'491	8'508	8'524	6
7	6637	6630	6624	6618	6612	6605	6599	6593	6587	6'6580	2'1437	14'57	14'76	14'96	15'15	15'34	15'54	15'73	15'92	16'12	7
8	6156	6149	6142	6135	6128	6120	6113	6106	6099	7'6092	2'4500	45'22	45'44	45'66	45'89	46'11	46'33	46'55	46'77	46'99	8
9	5676	5668	5660	5652	5643	5635	5627	5619	5611	8'5603	2'7562	75'57	76'12	76'37	76'62	76'87	77'12	77'37	77'62	77'87	9
10	5195	5186	5177	5168	5159	5151	5142	5133	5124	9'5115	3'0625	66'53	66'80	67'08	67'36	67'63	67'91	68'19	68'46	68'74	10
11	4715	4705	4695	4685	4675	4666	4656	4646	4636	10'4626	3'3687	37'18	37'48	37'79	38'09	38'40	38'70	39'01	39'31	39'61	11
12	4234	4223	4213	4202	4191	4181	4170	4159	4148	11'4138	3'6750	67'83	68'16	68'50	68'83	69'16	69'49	69'82	70'16	70'49	12
13	3754	3742	3731	3719	3707	3696	3684	3672	3661	12'3649	3'9812	98'48	98'84	99'20	99'56	99'92	00'28	00'64	01'00	01'36	13
14	3273	3261	3248	3235	3223	3211	3198	3186	3173	13'3160	4'2875	29'14	29'52	29'91	30'30	30'69	31'07	31'46	31'85	32'24	14
15	2793	2779	2766	2753	2739	2726	2712	2699	2685	14'2672	4'5937	59'79	60'20	60'62	61'03	61'45	61'87	62'28	62'70	63'11	15
16	2312	2298	2284	2269	2255	2241	2226	2212	2198	15'2183	4'9000	90'44	90'88	91'33	91'77	92'21	92'66	93'10	93'54	93'98	16
17	1832	1817	1801	1786	1771	1756	1741	1725	1710	16'1695	5'2062	21'09	21'57	22'04	22'51	22'98	23'45	23'92	24'39	24'86	17
18	1351	1335	1319	1303	1287	1271	1255	1239	1222	17'1206	5'5125	51'75	52'25	52'74	53'24	53'74	54'24	54'74	55'23	55'73	18
19	0871	0854	0837	0820	0803	0786	0769	0752	0735	18'0718	5'8187	82'40	82'93	83'45	83'98	84'50	85'03	85'56	86'08	86'61	19
20	0390	0372	0355	0337	0319	0301	0283	0265	0247	19'0229	6'1250	13'05	13'61	14'16	14'71	15'27	15'82	16'37	16'93	17'48	20
21	9910	9891	9872	9854	9835	9816	9797	9778	9760	19'9741	6'4312	43'70	44'29	44'87	45'45	46'03	46'61	47'19	47'77	48'35	21
22	9429	9410	9390	9370	9351	9331	9311	9292	9272	20'9252	6'7375	74'36	74'97	75'58	76'18	76'79	77'40	78'01	78'62	79'23	22
23	8949	8928	8908	8887	8867	8846	8826	8805	8784	21'8764	7'0437	50'01	50'65	51'28	51'92	52'56	53'20	53'84	54'48	55'12	23
24	8468	8447	8426	8404	8383	8361	8340	8318	8297	22'8275	7'3500	35'66	36'33	36'99	37'66	38'32	38'98	39'65	40'31	40'98	24
25	7988	7966	7943	7921	7899	7876	7854	7831	7809	23'7787	7'6562	66'32	67'01	67'70	68'39	69'08	69'78	70'47	71'16	71'85	25
26	7507	7484	7461	7438	7415	7391	7368	7345	7321	24'7298	7'9625	96'97	97'69	98'41	99'13	99'85	00'57	01'29	02'01	02'72	26
27	7027	7003	6979	6955	6930	6906	6882	6858	6834	25'6810	8'2687	27'62	28'37	29'12	29'86	30'61	31'36	32'10	32'85	33'60	27
28	6546	6521	6496	6471	6446	6421	6396	6371	6346	26'6321	8'5750	58'27	59'05	59'82	60'60	61'37	62'15	62'92	63'70	64'47	28
29	6066	6040	6014	5988	5962	5936	5910	5884	5858	27'5832	8'8812	88'93	89'73	90'53	91'33	92'14	92'94	93'74	94'54	95'35	29
30	5585	5559	5532	5505	5478	5452	5425	5398	5371	28'5344	9'1875	19'58	20'41	21'24	22'07	22'90	23'74	24'56	25'39	26'22	30
31	5105	5077	5050	5022	4994	4967	4939	4911	4883	29'4855	9'4937	50'23	51'09	51'95	52'81	53'66	54'52	55'38	56'24	57'09	31
32	4624	4596	4567	4539	4510	4482	4453	4424	4396	30'4367	9'8000	80'88	81'77	82'66	83'54	84'43	85'31	86'20	87'08	87'97	32
33	4144	4115	4085	4056	4026	3997	3967	3938	3908	31'3878	10'1062	11'54	12'45	13'36	14'28	15'19	16'10	17'02	17'93	18'84	33
34	3663	3633	3603	3572	3542	3512	3481	3451	3420	32'3390	10'4125	42'19	43'13	44'07	45'01	45'95	46'89	47'84	48'78	49'72	34
35	3183	3152	3121	3089	3058	3027	2995	2964	2933	33'2901	10'7187	72'84	73'81	74'78	75'75	76'72	77'69	78'65	79'62	80'59	35
36	2703	2670	2638	2606	2574	2542	2510	2477	2445	34'2413	11'0250	03'49	04'49	05'49	06'48	07'48	08'48	09'47	10'47	11'47	36
37	2222	2189	2156	2123	2090	2057	2024	1991	1957	35'1924	11'3312	34'15	35'17	36'20	37'22	38'24	39'27	40'29	41'32	42'34	37
38	1742	1708	1674	1640	1606	1572	1538	1504	1470	36'1436	11'6375	64'80	65'85	66'90	67'96	69'01	70'06	71'11	72'16	73'21	38
39	1261	1226	1192	1157	1122	1087	1052	1017	982	37'0947	11'9437	95'45	96'53	97'61	98'69	99'77	00'85	01'93	03'01	04'09	39
40	0781	0745	0709	0674	0638	0602	0566	0530	0494	38'0459	12'2500	26'10	27'21	28'32	29'43	30'53	31'64	32'75	33'85	34'96	40
41	0300	0264	0227	0190	0154	0117	0080	0044	0007	39'9970	12'5562	56'76	57'89	59'03	60'16	61'30	62'43	63'57	64'70	65'84	41
42	9820	9782	9745	9707	9670	9632	9594	9557	9519	39'9481	12'8625	87'41	88'57	89'74	90'90	92'06	93'22	94'38	95'55	96'71	42
43	9339	9301	9262	9224	9186	9147	9109	9070	9032	40'8993	13'1687	18'06	19'25	20'44	21'63	22'82	24'01	25'20	26'39	27'58	43
44	8859	8819	8780	8741	8702	8662	8623	8583	8544	41'8504	13'4750	48'71	49'93	51'15	52'37	53'59	54'80	56'02	57'24	58'46	44
45	8378	8338	8298	8258	8217	8177	8137	8097	8056	42'8016	13'7812	79'37	80'61	81'86	83'10	84'35	85'60	86'84	88'09	89'33	45
46	7898	7857	7816	7775	7733	7692	7651	7610	7569	43'7527	14'0875	10'02	11'29	12'57	13'84	15'11	16'39	17'66	18'93	20'21	46
47	7417	7375	7333	7291	7249	7207	7165	7123	7081	44'7039	14'3937	40'67	41'97	43'28	44'58	45'88	47'18	48'48	49'78	51'08	47
48	6937	6894	6851	6808	6765	6722	6679	6636	6593	45'6550	14'7000	71'33	72'65	73'98	75'31	76'64	77'97	79'30	80'63	81'95	48
49	6456	6413	6369	6325	6281	6237	6194	6150	6106	46'6062	15'0062	01'98	03'33	04'69	06'05	07'40	08'76	10'12	11'47	12'83	49
50	5976	5931	5887	5842	5797	5753	5708	5663	5618	47'5573	15'3125	32'63	34'02	35'40	36'78	38'17	39'55	40'93	42'32	43'70	50
51	5495	5450	5404	5359	5313	5268	5222	5176	5130	48'5085	15'6187	63'28	64'70	66'11	67'52	68'93	70'34	71'75	73'16	74'58	51
52	5015	4968	4922	4876	4829	4783	4736	4689	4643	49'4596	15'9250	93'94	95'38	96'81	98'25	99'69	01'13	02'57	04'01	05'45	52
53	4534	4487	4440	4392	4345	4298	4250	4203	4155	50'4108	16'2312	24'59	26'06	27'52	28'99	30'46	31'92	33'39	34'86	36'32	53
54	4054	4006	3957	3909	3861	3813	3764	3716	3667	51'3619	16'5375	55'24	56'74	58'23	59'73	61'22	62'72	64'21	65'70	67'20	54
55	3573	3524	3475	3426	3377	3328	3278	3229	3180	52'3131	16'8437	85'89	87'42	88'94	90'46	91'98	93'51	95'03	96'55	98'07	55
56	3093	3043	2993	2943	2893	2843	2793	2742	2692	53'2642	17'1500	16'55	18'10	19'65	21'20	22'75	24'30	25'85	27'40	28'95	56
57	2612																				





TRAVERSE TABLES.

Table with columns for angles (18°, 10', 11', 12', 13', 14', 15', 16', 17', 18', 19') and values for COSINE and SINE. Includes degree markings at the top and bottom.





TRAVERSE TABLES.

Table with columns for angles (18° to 71°), COSINE, and SINE. It contains numerical values for each degree and minute combination.

TRAVERSE TABLES.

Table with columns for angles (18°, 71°) and trigonometric functions (COSINE, SINE). It contains numerical values for various angles and includes a section for minutes (1' to 10').















TRAVERSE TABLES.

Table with columns for degrees (20° to 69°), Cosine, Sine, and minutes (0' to 9'). It contains numerical values for trigonometric functions across the specified range.

TRAVERSE TABLES.

Table with columns for degrees (20° to 69°), Cosine, Sine, and degrees (69° to 20°). Rows contain numerical values for each minute of the degree. Includes a 'SINE.' label at the bottom center.



TRAVERSE TABLES.

Table with columns for angles (20°, 69°) and rows for cosine and sine values. The table is organized into four quadrants: Cosine (20° to 69°), Sine (20° to 69°), Sine (69° to 20°), and Cosine (69° to 20°). Each quadrant contains a grid of numerical values for every minute of the angle.



TRAVERSE TABLES.

Table with columns for angles (20° to 69°), COSINE, and SINE. It provides numerical values for each angle, organized in a grid. The top part shows Cosine and Sine for angles from 20 to 69 degrees. The bottom part shows Sine and Cosine for angles from 69 to 20 degrees.

TRAVERSE TABLES.

Table with columns for angles (20°, 69°), Cosine, and Sine, containing numerical values for various degrees and minutes.



TRAVERSE TABLES.

Table with columns for angles (21° to 68°) and rows for cosine and sine values. Includes sub-columns for degrees (10' to 19') and minutes (50' to 41').



TRAVERSE TABLES.

Table of Cosine and Sine values for angles from 21° to 68°. The table is organized into two main sections: Cosine (left) and Sine (right). Each section has a header for the angle (21° to 68°) and a grid of values for minutes and seconds. The Cosine section is labeled 'COSINE.' and the Sine section is labeled 'SINE.'. The values are arranged in rows corresponding to degrees and columns corresponding to minutes and seconds. The table is symmetric about the center, with values decreasing from 1.0000 at the top to 0.0000 at the bottom.



TRAVERSE TABLES.

Table with columns for COSINE and SINE, and rows for angles from 21° to 68°. Includes degree markings and numerical values for each minute.











TRAVERSE TABLES.

Table with columns for 22 degrees, COSINE, SINE, and 22 degrees. Rows range from 1 to 100. Includes a bottom section for 67 degrees with SINE and COSINE columns.



TRAVERSE TABLES.

Table with columns for degrees (23° to 66°), Cosine, Sine, and degrees (23° to 66°). It contains trigonometric values for various angles.





TRAVERSE TABLES.

23°	COSINE.										SINE.										23°
	20'	21'	22'	23'	24'	25'	26'	27'	28'	29'	20'	21'	22'	23'	24'	25'	26'	27'	28'	29'	
	1	9182	9181	9180	9179	9178	9176	9175	9174	9173	9172	3961	3963	3966	3969	3971	3974	3977	3979	3982	
66°	SINE.										COSINE.										66°
40'	39'	38'	37'	36'	35'	34'	33'	32'	31'	40'	39'	38'	37'	36'	35'	34'	33'	32'	31'		

TRAVERSE TABLES.

Table of Traverse Tables showing Cosine and Sine values for angles from 23 to 66 degrees. The table is organized into four quadrants: 23-90, 90-66, 66-90, and 90-23. Each quadrant contains columns for minutes and seconds, and rows for degrees. The values are presented in a grid format, with some values in boldface.

TRAVERSE TABLES.

Table with columns for angles (23°, 66°) and trigonometric functions (COSINE, SINE). It contains numerical values for various angles and minutes, organized in a grid format.

TRAVERSE TABLES.

Table with columns for angles (23° to 66°) and trigonometric functions (COSINE, SINE). The table contains numerical values for various angles and functions, organized in a grid format with multiple columns for each function and row for each angle.

TRAVERSE TABLES.

Table with columns for angles (24°, 65°) and rows for cosine and sine values. Includes sub-headers 'COSINE.' and 'SINE.' and numerical data for various degrees and minutes.

TRAVERSE TABLES.

Table of trigonometric functions for 24° and 65°. It is divided into four quadrants: Cosine (24°), Sine (24°), Sine (65°), and Cosine (65°). Each quadrant contains a grid of values for angles from 1° to 100°.



TRAVERSE TABLES.

Main table containing Cosine and Sine values for angles from 24° to 65°. The table is organized into two main sections: Cosine (left) and Sine (right), with degree markings at the corners. Each section contains a grid of numerical values corresponding to specific minutes and seconds.













TRAVERSE TABLES.

Table with columns for angles (25° to 64°) and trigonometric functions (COSINE and SINE). It contains numerical values for sine and cosine at various intervals.

TRAVERSE TABLES.

Table with columns for angles (25° to 64°) and trigonometric values (Cosine and Sine). The table is organized into two main sections: Cosine (left) and Sine (right), with rows corresponding to angles from 1 to 100. Each row contains 10 values for the cosine section and 10 for the sine section, with intermediate values for minutes and seconds.





TRAVERSE TABLES.

Table with columns for COSINE and SINE, and rows for angles from 26° to 63°. The table includes numerical values for each angle and minute, with some values in scientific notation.



TRAVERSE TABLES.

Table with columns for COSINE and SINE, rows for angles from 26° to 63°, and sub-columns for minutes (01' to 60').





TRAVERSE TABLES.

Table with columns for degrees (26° to 63°), Cosine, and Sine values. The table is organized into two main sections: the left half contains cosine values for angles from 26° to 63°, and the right half contains sine values for the same angles. Each section is further divided into sub-columns representing minutes of the angle (from 50' to 1'). The values are numerical, ranging from approximately 0.1 to 0.95. The table includes a grid of values for each minute of the degree, with some values in the rightmost column being the degree value itself (e.g., 26, 27, ..., 63).

TRAVERSE TABLES.

Table with columns for COSINE and SINE, rows for degrees from 27 to 62, and sub-columns for minutes (0' to 9').

TRAVERSE TABLES.

Table with columns for 27° and 62°, and rows for Cosine and Sine values. The table is divided into two main sections: Cosine (left) and Sine (right). Each section has a main column for the angle (27° or 62°) and sub-columns for minutes (10' to 19').



TRAVERSE TABLES.

27° COSINE. SINE. 27° Table with columns for degrees and minutes, and rows for degrees from 1 to 100. The top half shows cosine values and the bottom half shows sine values.

TRAVERSE TABLES.

Table with columns for angles (27°, 62°) and trigonometric functions (COSINE, SINE). It contains numerical values for various angles and their corresponding sine and cosine values.

TRAVERSE TABLES.

27°	COSINE.										SINE.										27°
	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	
	1	8857	8855	8853	8851	8850	8849	8847	8846	8845	'8844	'4643	4646	4648	4651	4654	4656	4659	4661	4664	
20	7133	7106	7079	7052	7025	6998	6970	6943	6916	17'6889	9'2865	2917	2968	3020	3071	3123	3174	3226	3277	3329	20
62°	SINE.										COSINE.										62°
19'	18'	17'	16'	15'	14'	13'	12'	11'	10'	19'	18'	17'	16'	15'	14'	13'	12'	11'	10'	9'	
19'	18'	17'	16'	15'	14'	13'	12'	11'	10'	19'	18'	17'	16'	15'	14'	13'	12'	11'	10'	9'	

### TRAVERSE TABLES.

27°	COSINE.																			SINE.										27°
	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'										
	1	8843	8842	8840	8839	8838	8836	8835	8834	8832	8831	4669	4672	4674	4677	4679	4682	4684	4687	4690	4692	1								
100	4310	4174	4038	3902	3766	3630	3493	3357	3221	3084	46690	47158	47625	48092	48559	49025	49492	49958	50425	50891	100									
	10'	9'	8'	7'	6'	5'	4'	3'	2'	1'	10'	9'	8'	7'	6'	5'	4'	3'	2'	1'										
62°	SINE.										COSINE.										62°									

TRAVERSE TABLES.

Table with 100 rows and 19 columns for each of the four quadrants. The quadrants are: 28° Cosine (top-left), 28° Sine (top-right), 61° Sine (bottom-left), and 61° Cosine (bottom-right). Each quadrant contains numerical values for angles from 0' to 60' in 1' increments.

TRAVERSE TABLES.

Table with columns for degrees (28° to 61°), Cosine, and Sine. It contains numerical data for various angles and their trigonometric values.

TRAVERSE TABLES

Table with columns for degrees (28° to 61°), Cosine, and Sine values. The table is organized into two main sections: the top half for angles 28° to 60° and the bottom half for angles 61° to 90°. Each section contains two columns of trigonometric values (Cosine and Sine) and a central column of degree markers. The values are arranged in a grid format with rows for each degree and columns for each minute.

TRAVERSE TABLES.

Table with columns for angles (28°, 30', 31', 32', 33', 34', 35', 36', 37', 38', 39') and values for COSINE and SINE. Includes a section for 61° at the bottom with SINE and COSINE values.









TRAVERSE TABLES.

Table with columns for COSINE and SINE, and rows for angles from 29° to 60°. The table is split into two main sections: COSINE (left) and SINE (right), with a central column for the angle. The top and bottom rows are labeled '29°' and '60°' respectively. Each row contains 20 columns of numerical values. The bottom row is labeled '60°' and the columns are labeled 'SINE.' and 'COSINE.'

TRAVERSE TABLES.

Table with columns for angles (29° to 60°), Cosine, and Sine values. Includes a grid of numerical data for each degree and minute.





TRAVERSE TABLES.

Table with columns for degrees (29° to 60°), cosine values, and sine values. Includes a central table for angles 29° to 60° and outer columns for angles 60° to 90°.



TRAVERSE TABLES.

30° COSINE SINE 30°
Table with 100 rows and multiple columns for cosine and sine values at 30-degree intervals, including intermediate values for minutes and seconds.

TRAVERSE TABLES.

30° Cosine. Sine. 30°. Table with columns for angles (10' to 19') and trigonometric values for Cosine and Sine. Includes a '30°' label on the left and right, and '59° SINE.' and 'COSINE. 59°' labels at the bottom.

TRAVERSE TABLES.

Table with columns for Cosine and Sine values, and rows for angles from 30° to 59°. Includes sub-headers for 20', 21', 22', 23', 24', 25', 26', 27', 28', 29' and degree markings at the ends.













TRAVERSE TABLES.

Table of Traverse Tables showing Cosine and Sine values for angles from 31 degrees to 58 degrees. The table is organized into two main sections: Cosine (left) and Sine (right), with corresponding degree markings (31° and 58°) at the corners. The table contains numerical values for each minute of the degree, with some values in bold to indicate specific points of interest.

TRAVERSE TABLES.

Table with columns for angles (31°, 58°), Cosine, and Sine values for various minutes (30', 31', etc.). The table is symmetric and contains numerical data for angles from 31 to 58 degrees.



TRAVERSE TABLES.

Table with columns for angles from 31° to 58° and rows for cosine and sine values. Includes sub-columns for minutes (50' to 59') and seconds (10' to 1').



TRAVERSE TABLES.

Table with columns for angles (32°, 57°) and trigonometric functions (COSINE, SINE). Rows represent angles from 1 to 100 degrees, with sub-columns for minutes and seconds. Values are provided for cosine and sine functions.

TRAVERSE TABLES.

Table of traverse tables showing Cosine and Sine values for angles from 32° to 57°. The table is organized into two main sections: Cosine (left) and Sine (right). Each section has a header row with degree markings and a grid of numerical values. The Cosine section is headed '32°' and 'COSINE.' and the Sine section is headed 'SINE.' and '32°'. The values are arranged in columns corresponding to minutes of the degree, and rows corresponding to degrees. The bottom of the table features a header for '57°' and 'SINE.' on the left and 'COSINE.' and '57°' on the right, indicating the continuation of the table.











TRAVERSE TABLES.

33°	COSINE.										SINE.										33°
	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	
	1	8371	8369	8368	8366	8364	8363	8361	8360	8358	8356	5471	5473	5476	5478	5480	5483	5485	5488	5490	
50	7083	6924	6764	6605	6446	6286	6127	5967	5807	5648	547076	7320	7563	7807	8050	8293	8537	8780	9023	9266	50
	50'	49'	48'	47'	46'	45'	44'	43'	42'	41'	50'	49'	48'	47'	46'	45'	44'	43'	42'	41'	











TRAVERSE TABLES.

34°		COSINE.									SINE.									34°			
		0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'		
1	8290	8289	8287	8285	8284	8282	8281	8279	8277	8276	5592	5594	5597	5599	5602	5604	5606	5609	5611	5614	1		
2	6581	6577	6574	6571	6568	6564	6561	6558	6555	6551	11184	11189	11194	11198	1203	1208	1213	1218	1222	1227	2		
3	4871	4866	4861	4856	4852	4847	4842	4837	4832	4827	17676	17683	17690	17697	1805	1812	1819	1826	1834	1841	3		
4	3162	3155	3148	3142	3135	3129	3122	3116	3109	3103	24368	24377	24387	24397	2406	2416	2426	2435	2445	2454	4		
5	1452	1444	1436	1427	1419	1411	1403	1395	1387	1379	27960	27972	27984	27996	8008	8020	8032	8044	8056	8068	5		
6	9742	9732	9723	9713	9703	9693	9684	9674	9664	9654	33552	33566	33581	33595	3609	3624	3638	3653	3667	3682	6		
7	8033	8021	8010	7998	7987	7976	7964	7953	7941	7930	39144	39160	39177	39194	9211	9228	9245	9262	9278	9295	7		
8	6323	6310	6297	6284	6271	6258	6245	6232	6219	6206	44735	44755	44774	44793	4813	4832	4851	4870	4890	4909	8		
9	4613	4599	4584	4569	4555	4540	4525	4511	4496	4481	50327	50349	50371	50392	50414	50436	50458	50479	50501	50523	9		
10	2904	2887	2871	2855	2839	2822	2806	2790	2773	2757	55919	55943	55968	55992	6016	6040	6064	6088	6112	6136	10		
11	1194	1176	1158	1140	1123	1105	1087	1069	1051	91033	61511	1538	1564	1591	1617	1644	1670	1697	1723	1750	11		
12	9485	9465	9445	9426	9406	9387	9367	9348	9328	9308	67103	7132	7161	7190	7219	7248	7277	7306	7334	7363	12		
13	7775	7754	7733	7711	7690	7669	7648	7627	7605	7584	72695	2726	2758	2789	2820	2852	2883	2914	2946	2977	13		
14	6065	6042	6020	5997	5974	5951	5928	5906	5883	5860	78287	8321	8355	8388	8422	8456	8489	8523	8557	8591	14		
15	4356	4331	4307	4282	4258	4234	4209	4185	4160	4136	83879	3915	3951	3987	4024	4060	4096	4132	4168	4204	15		
16	2646	2620	2594	2568	2542	2516	2490	2464	2438	2411	89471	9509	9548	9587	9625	9664	9702	9741	9779	9818	16		
17	936	909	881	853	826	798	770	743	715	688	95063	5104	5145	5186	5227	5268	5309	5350	5391	5431	17		
18	9227	9197	9168	9139	9110	9080	9051	9021	8992	8963	100655	6698	6742	6785	6828	6872	6915	6958	1002	1045	18		
19	7517	7486	7455	7424	7393	7362	7331	7300	7269	7238	106247	6292	6338	6384	6430	6476	6521	6567	6613	6659	19		
20	5808	5775	5742	5710	5677	5645	5612	5579	5547	5514	111839	1887	1935	1983	2031	2080	2128	2176	2224	2272	20		
21	4098	4064	4030	3995	3961	3927	3893	3858	3824	3790	117431	7481	7532	7582	7633	7684	7734	7785	7835	7886	21		
22	2388	2352	2317	2281	2245	2209	2173	2137	2101	2066	123022	3075	3129	3182	3235	3288	3341	3394	3447	3500	22		
23	679	664	650	636	622	608	594	579	565	551	128614	8670	8725	8781	8836	8892	8947	9002	9058	9113	23		
24	8969	8930	8891	8852	8813	8774	8734	8695	8656	8617	134206	4264	4322	4380	4438	4496	4554	4611	4669	4727	24		
25	7259	7219	7178	7137	7097	7056	7015	6974	6934	6893	139798	9859	9919	9979	10039	10100	10161	10221	10281	10340	25		
26	5550	5507	5465	5423	5380	5338	5296	5253	5211	5168	145390	5453	5516	5578	5641	5704	5766	5829	5891	5954	26		
27	3840	3796	3752	3708	3664	3620	3576	3532	3488	3444	150982	1047	1112	1177	1242	1307	1373	1438	1503	1568	27		
28	2131	2085	2039	1994	1948	1903	1857	1811	1766	1720	156574	6642	6709	6777	6844	6911	6979	7046	7114	7182	28		
29	421	407	392	378	363	349	334	319	305	291	162166	2236	2306	2376	2446	2515	2585	2655	2725	2795	29		
30	8711	8662	8614	8565	8516	8467	8418	8369	8320	8271	167758	7830	7903	7975	8047	8119	8192	8264	8336	8408	30		
31	7002	6951	6901	6850	6800	6749	6699	6648	6598	6547	173350	3425	3499	3574	3649	3723	3798	3873	3947	4022	31		
32	5292	5240	5188	5136	5084	5031	4979	4927	4875	4823	178942	9019	9096	9173	9250	9327	9404	9482	9559	9636	32		
33	3582	3529	3475	3421	3368	3314	3260	3206	3152	3098	184534	4613	4693	4772	4852	4931	5011	5090	5170	5249	33		
34	1873	1817	1762	1707	1651	1596	1541	1485	1430	1374	190126	2028	2090	2152	2215	2278	2341	2404	2467	2530	34		
35	1163	1106	1049	992	935	878	821	764	707	650	195718	5802	5886	5971	6055	6139	6224	6308	6392	6476	35		
36	8454	8395	8336	8278	8219	8160	8102	8043	7984	7925	201309	1396	1483	1570	1657	1743	1830	1917	2003	2090	36		
37	6744	6684	6623	6563	6503	6443	6382	6322	6262	6201	206901	6991	7080	7169	7258	7347	7436	7525	7614	7704	37		
38	5034	4972	4911	4849	4787	4725	4663	4601	4539	4477	212493	2585	2677	2768	2860	2951	3043	3134	3226	3317	38		
39	3325	3261	3198	3134	3071	3007	2944	2880	2816	2753	218085	8179	8273	8367	8461	8555	8649	8743	8837	8931	39		
40	1615	1550	1485	1420	1355	1291	1224	1159	1094	1028	223677	3774	3870	3966	4063	4159	4256	4352	4448	4545	40		
41	9905	9839	9772	9705	9638	9572	9505	9438	9371	9304	229269	9368	9467	9566	9664	9763	9862	9961	10059	10158	41		
42	8196	8127	8059	7991	7922	7854	7785	7717	7648	7580	234861	4962	5064	5165	5266	5367	5468	5570	5671	5772	42		
43	6486	6416	6346	6276	6206	6136	6066	5996	5926	5855	240453	5557	5660	5764	5868	5971	6075	6178	6281	6385	43		
44	4777	4705	4633	4562	4490	4418	4347	4275	4203	4131	246045	6151	6257	6363	6469	6575	6681	6787	6893	6999	44		
45	3067	2994	2920	2847	2774	2701	2627	2554	2480	2407	251637	1745	1854	1962	2071	2179	2288	2396	2504	2613	45		
46	1357	1282	1208	1133	1058	983	908	833	758	683	257229	7340	7451	7561	7672	7783	7894	8005	8115	8226	46		
47	9648	9571	9495	9418	9342	9265	9188	9112	9035	8958	262821	2934	3047	3161	3274	3387	3500	3614	3727	3840	47		
48	7938	7860	7782	7704	7625	7547	7469	7391	7312	7234	268413	8528	8644	8760	8875	8991	9107	9222	9338	9453	48		
49	6228	6149	6069	5989	5909	5829	5750	5670	5590	5510	274005	4123	4241	4359	4477	4595	4713	4831	4949	5067	49		
50	4519	4437	4356	4275	4193	4112	4030	3949	3867	3785	279596	9717	9838	9958	10079	10199	10320	10440	10560	10681	50		
51	2809	2726	2643	2560	2477	2394	2311	2228	2144	2061	285188	5311	5434	5557	5680	5803	5926	6049	6172	6294	51		
52	1100	1015	930	846	761	676	591	507	422	337	290780	6906	7031	7156	7281	7407	7532	7657	7781	7905	52		
53	9390	9304	9217	9131	9045	8958	8872	8786	8699	8613	296372	6500	6628	6756	6883	7011	7139	7267	7394	7522	53		
54	7680	7592	7505	7417	7329	7241	7153	7064	6976	6888	301964	2094	2225	2355	2485	2615	2745	2875	3005	3135	54		
55	5971	5881	5792	5702	5613	5523	5433	5343	5254	5164	307556	7689	7821	7954	8086	8219	8351	8484	8616	8749	55		
56	4261	4170	4079	3988	3896	3805	3714	3622	3531	3440	313148	3283	3418	3553	3688	3823	3958	4093	4228	4362	56		
57	2551	2459	2366	2273	2180	2087	1994	1901	1808	1715	318740	8877	9015	9152	9290	9427	9564	9701	9839	9976	57		
58	842	747	653	559	464	370	275	180	86	7	324332	4472	4612	4751	4891	5031	5171	5310	5450	5590	58		
59	9132	9036	8940	8844	8748	8652	8556	8459	8363	8267	329924	4066	4208	4351	4493	4635	4777	4919	5061	1203	59		
60	7423	7325	7227	7130	7032	6934	6836	6738	6640	6542	335516	5660	5805	5950	6094	6239	6383	6528	6672	6817	60		
61	5713	5614	5514	5415	5316	5216	5117	5017	4918														

TRAVERSE TABLES.

34°	COSINE.									SINE.									34°	
	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	10'	11'	12'	13'	14'	15'	16'	17'		18'
1	8274	8272	8271	8269	8268	8266	8264	8263	8261	8259	5616	5618	5621	5623	5626	5628	5630	5633	5635	5638
2	6548	6545	6542	6538	6535	6532	6529	6525	6522	1'6519	1'1232	1237	1242	1246	1251	1256	1261	1266	1271	1275
3	4822	4817	4812	4808	4803	4798	4793	4788	4783	2'4778	1'6848	6855	6863	6870	6877	6884	6891	6899	6906	6913
4	3096	3090	3083	3077	3070	3064	3057	3050	3044	3'3037	2'2464	2474	2483	2493	2503	2512	2522	2531	2541	2551
5	1370	1362	1354	1346	1338	1329	1321	1313	1305	4'1297	2'8080	8092	8104	8116	8128	8140	8152	8164	8176	8188
6	9644	9635	9625	9615	9605	9595	9586	9576	9566	4'9556	3'3696	3711	3725	3739	3754	3768	3783	3797	3812	3826
7	7919	7907	7896	7884	7873	7861	7850	7838	7827	5'7815	3'9312	9329	9346	9363	9380	9396	9413	9430	9447	9464
8	6193	6180	6166	6153	6140	6127	6114	6101	6088	6'6075	4'4928	4947	4967	4986	5005	5024	5044	5063	5082	5101
9	4467	4452	4437	4423	4408	4393	4378	4364	4349	7'4334	5'0544	0566	0588	0609	0631	0652	0674	0696	0717	0739
10	2741	2724	2708	2692	2675	2659	2643	2626	2610	8'2593	5'6160	6184	6208	6232	6256	6280	6305	6329	6353	6377
11	1015	0997	0979	0961	0943	0925	0907	0889	0871	9'0853	6'1776	1803	1829	1856	1882	1909	1935	1961	1988	2014
12	9289	9269	9250	9230	9210	9191	9171	9151	9132	9'9112	6'7392	7421	7450	7479	7508	7537	7565	7594	7623	7652
13	7563	7542	7520	7499	7478	7457	7435	7414	7393	10'7371	7'3008	3040	3071	3102	3133	3165	3196	3227	3258	3290
14	5837	5814	5791	5768	5745	5723	5700	5677	5654	11'5631	7'8624	8658	8692	8725	8759	8793	8826	8860	8894	8927
15	4111	4087	4062	4038	4013	3988	3964	3939	3915	12'3890	8'4240	4276	4313	4349	4385	4421	4457	4493	4529	4565
16	2385	2359	2333	2307	2281	2254	2228	2202	2176	13'2149	8'9856	9895	9933	9972	10'010	0409	0087	0126	0164	0203
17	0659	0631	0604	0576	0548	0520	0492	0465	0437	14'0409	9'5472	5513	5554	5595	5636	5677	5718	5759	5799	5840
18	8933	8904	8875	8845	8816	8786	8757	8727	8698	14'8668	10'1088	1132	1175	1218	1262	1305	1348	1391	1435	1478
19	7207	7176	7145	7114	7083	7052	7021	6990	6959	15'6928	10'6704	6750	6796	6842	6887	6933	6979	7024	7070	7116
20	5481	5449	5416	5383	5351	5318	5285	5252	5220	16'5187	11'2320	2369	2417	2465	2513	2561	2609	2657	2705	2753
21	3756	3721	3687	3653	3618	3584	3549	3515	3481	17'3446	11'7936	7987	8038	8088	8139	8189	8240	8290	8340	8391
22	2030	1994	1958	1922	1886	1850	1814	1778	1742	18'1706	12'3552	3605	3658	3711	3764	3817	3870	3923	3976	4029
23	0304	0266	0229	0191	0153	0116	0078	0040	0003	18'9965	12'9168	9224	9279	9334	9390	9445	9500	9556	9611	9666
24	8578	8539	8499	8460	8421	8382	8343	8303	8264	19'8224	13'4785	4842	4900	4958	5015	5073	5131	5189	5246	5304
25	6852	6811	6770	6729	6688	6647	6607	6566	6525	20'6484	14'0401	0461	0521	0581	0641	0701	0761	0821	0882	0942
26	5126	5083	5041	4998	4956	4913	4871	4828	4786	21'4743	14'6017	6079	6142	6204	6267	6329	6392	6454	6517	6579
27	3400	3356	3312	3268	3223	3179	3135	3091	3047	22'3002	15'1633	1698	1763	1827	1892	1957	2022	2087	2152	2217
28	1674	1628	1583	1537	1491	1445	1399	1353	1308	23'1262	15'7249	7316	7383	7451	7518	7585	7653	7720	7787	7855
29	9948	9901	9853	9806	9758	9711	9664	9616	9569	23'9521	16'2865	2934	3004	3074	3144	3213	3283	3353	3423	3492
30	8222	8173	8124	8075	8026	7977	7928	7879	7829	24'7780	16'8481	8553	8625	8697	8769	8841	8914	8986	9058	9130
31	6496	6446	6395	6344	6294	6243	6192	6141	6090	25'6040	17'4097	4171	4246	4320	4395	4470	4544	4619	4693	4768
32	4770	4718	4666	4613	4561	4509	4456	4404	4351	26'4299	17'9713	9790	9867	9944	10'020	0408	0174	0251	0328	0405
33	3044	2991	2937	2883	2829	2775	2721	2667	2612	27'2558	18'5329	5408	5488	5567	5646	5726	5805	5884	5964	6043
34	1319	1263	1207	1152	1096	1040	985	929	873	28'0818	19'0945	1027	1108	1190	1272	1354	1435	1517	1599	1681
35	9593	9535	9478	9421	9364	9306	9249	9192	9134	28'9077	19'6561	6645	6729	6813	6898	6982	7066	7150	7234	7318
36	7867	7808	7749	7690	7631	7572	7513	7454	7395	29'7336	20'2177	2263	2350	2437	2523	2610	2696	2783	2869	2956
37	6141	6080	6020	5959	5899	5838	5778	5717	5656	30'5596	20'7793	7882	7971	8061	8149	8238	8327	8416	8505	8594
38	4415	4353	4291	4228	4166	4104	4042	3980	3917	31'3855	21'3409	3500	3592	3683	3775	3866	3957	4049	4140	4231
39	2689	2625	2561	2498	2434	2370	2306	2242	2178	32'2114	21'9025	9119	9213	9306	9400	9494	9588	9681	9775	9869
40	0963	0898	0832	0767	0701	0636	0570	0505	0439	33'0374	22'4641	4737	4833	4930	5026	5122	5218	5314	5410	5507
41	9237	9170	9103	9036	8969	8902	8835	8768	8700	33'8633	23'0257	0356	0454	0553	0651	0750	0849	0947	1046	1144
42	7511	7442	7374	7305	7236	7168	7099	7030	6961	34'6892	23'5873	5974	6075	6176	6277	6378	6479	6580	6681	6782
43	5785	5715	5645	5574	5504	5434	5363	5293	5222	35'5152	24'1489	1592	1696	1799	1903	2006	2109	2213	2316	2420
44	4059	3987	3915	3843	3771	3699	3627	3555	3483	36'3411	24'7105	7211	7317	7423	7528	7634	7740	7846	7951	8057
45	2333	2260	2186	2113	2039	1965	1892	1818	1744	37'1670	25'2721	2829	2938	3046	3154	3262	3370	3479	3587	3695
46	0607	0532	0457	0382	0307	0231	0156	0081	0005	37'9930	25'8337	8448	8558	8669	8780	8890	9001	9111	9222	9332
47	8881	8805	8728	8651	8574	8497	8420	8343	8266	38'8189	26'3953	4066	4179	4292	4405	4518	4631	4744	4857	4970
48	7156	7077	6999	6920	6842	6763	6684	6606	6527	39'6448	26'9569	9685	9800	9915	10031	0146	0262	0377	0492	0608
49	5430	5350	5269	5189	5109	5029	4949	4868	4788	40'4708	27'5185	5303	5421	5539	5657	5774	5892	6010	6128	6245
50	3704	3622	3540	3459	3377	3295	3213	3131	3049	41'2967	28'0801	0921	1042	1162	1282	1402	1523	1643	1763	1883
51	1978	1894	1811	1728	1644	1561	1477	1394	1310	42'1226	28'6417	6540	6663	6785	6908	7030	7153	7276	7398	7521
52	0252	0167	0082	9997	9912	9827	9742	9656	9571	42'9486	29'2033	2158	2283	2408	2534	2659	2784	2909	3034	3158
53	8526	8439	8353	8266	8179	8093	8006	7919	7832	43'7745	29'7649	7777	7904	8032	8159	8287	8414	8541	8669	8796
54	6800	6712	6624	6535	6447	6358	6270	6182	6093	44'6005	30'3265	3395	3525	3655	3785	3915	4044	4174	4304	4434
55	5074	4984	4894	4804	4714	4624	4534	4444	4354	45'4264	30'8881	9014	9146	9278	9410	9543	9675	9807	9939	10071
56	3348	3257	3165	3074	2982	2890	2799	2707	2615	46'2523	31'4497	4632	4767	4901	5036	5171	5305	5440	5575	5709
57	1622	1529	1436	1343	1249	1156	1063	969	876	47'0783	32'0113	0250	0388	0525	0662	0799	0936	1073	1210	1347
58	9896	9802	9707	9612	9517	9422	9327	9232	9137	47'9042	32'5729	5869	6008	6148	6287	6427	6566	6706	6845	6984
59	8170	8074	7978	7881	7785	7688	7591	7495	7398	48'7301	33'1345	1487	1629	1771	1913	2055	2197	2339	2480	2622
60	6444	6346	6248	6150	6052	5954	5856	5757	5659	49'5561	33'6961	7106	7250	7394	7539	7683	7827	7971	8116	8260
61	4719	4619	4519	4419	4320	4220	4120	4020	3920	50'3820	34'2577	2724	2871	3018	3164	3311	3458	3604	3751	3897
62	2993	2891	2790	2689	2588	2486	2384	2283	2181	51'2079	34'8193	8343	8492	8641						

TRAVERSE TABLES.

34° COSINE. SINE. 34° Table with columns for degrees (20' to 29') and values for Cosine and Sine. Includes a 55° section at the bottom with columns for SINE and COSINE.

TRAVERSE TABLES.

34°	COSINE.										SINE.										34°
	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	
	1	8241	8240	8238	8236	8235	8233	8231	8230	8228	8226	5664	5666	5669	5671	5674	5676	5678	5681	5683	
2	6483	6479	6476	6473	6469	6466	6463	6459	6456	6453	11328	1333	1338	1343	1347	1352	1357	1362	1366	1371	2
3	4724	4719	4714	4709	4704	4699	4694	4689	4684	24679	16992	6999	7007	7014	7021	7028	7035	7042	7050	7057	3
4	2965	2958	2952	2945	2939	2932	2925	2919	2912	32906	22656	2666	2675	2685	2695	2704	2714	2723	2733	2742	4
5	1206	1198	1190	1182	1173	1165	1157	1149	1140	41132	28320	8332	8344	8356	8368	8380	8392	8404	8416	8428	5
6	9448	9438	9428	9418	9408	9398	9388	9378	9368	49358	33984	3999	4013	4028	4042	4056	4071	4085	4099	4114	6
7	7689	7677	7666	7654	7643	7631	7620	7608	7596	57585	39648	9665	9682	9699	9716	9732	9749	9766	9783	9799	7
8	5930	5917	5904	5891	5877	5864	5851	5838	5824	65811	53512	5332	5351	5370	5389	5408	5427	5447	5466	5485	8
9	4171	4157	4142	4127	4112	4097	4082	4067	4053	74038	50977	0998	1020	1041	1063	1084	1106	1127	1149	1171	9
10	2413	2396	2380	2363	2347	2330	2314	2297	2281	82264	56641	6665	6689	6713	6736	6760	6784	6808	6832	6856	10
11	0654	0636	0618	0599	0581	0563	0545	0527	0509	90490	62305	2331	2357	2384	2410	2436	2463	2489	2515	2542	11
12	8895	8875	8856	8836	8816	8796	8776	8757	8737	98717	67969	7998	8026	8055	8084	8113	8141	8170	8199	8227	12
13	7136	7115	7094	7072	7051	7029	7008	6986	6965	106943	73633	3664	3695	3726	3757	3789	3820	3851	3882	3913	13
14	5378	5355	5332	5308	5285	5262	5239	5216	5193	115170	79297	9330	9364	9398	9431	9465	9498	9532	9565	9599	14
15	3619	3594	3569	3545	3520	3495	3470	3446	3421	123396	84961	4997	5033	5069	5105	5141	5177	5212	5248	5284	15
16	1860	1834	1807	1781	1755	1728	1702	1675	1649	131622	90625	0663	0702	0740	0778	0817	0855	0893	0932	0970	16
17	0101	0073	0045	0017	9989	9961	9933	9905	9877	139849	96289	6330	6371	6411	6452	6493	6533	6574	6615	6656	17
18	8343	8313	8283	8254	8224	8194	8165	8135	8105	148075	101953	1996	2039	2083	2126	2169	2212	2255	2298	2341	18
19	6584	6553	6521	6490	6459	6427	6396	6365	6333	156302	107617	7663	7708	7754	7799	7845	7890	7936	7981	8027	19
20	4825	4792	4759	4726	4693	4660	4627	4594	4561	164528	113281	3329	3377	3425	3473	3521	3569	3617	3665	3712	20
21	3067	3032	2997	2963	2928	2893	2859	2824	2789	172755	118945	8996	9046	9096	9147	9197	9247	9297	9348	9398	21
22	1308	1272	1235	1199	1163	1126	1090	1054	1017	180981	124609	4662	4715	4768	4820	4873	4926	4978	5031	5084	22
23	9549	9511	9473	9435	9397	9359	9321	9283	9245	189207	130273	0329	0384	0439	0494	0549	0604	0659	0714	0769	23
24	7790	7751	7711	7672	7632	7592	7553	7513	7473	197434	135973	5995	6053	6110	6168	6225	6282	6340	6397	6455	24
25	6032	5990	5949	5908	5867	5825	5784	5743	5701	205660	141602	1661	1721	1781	1841	1901	1961	2021	2081	2140	25
26	4273	4230	4187	4144	4101	4058	4015	3973	3930	213887	147266	7328	7390	7453	7515	7577	7639	7702	7764	7826	26
27	2514	2470	2425	2381	2336	2291	2247	2202	2158	222113	152930	2994	3059	3124	3188	3253	3318	3382	3447	3512	27
28	0755	0709	0663	0617	0571	0524	0478	0432	0386	230339	158594	8661	8728	8795	8862	8929	8996	9063	9130	9197	28
29	8997	8949	8901	8853	8805	8757	8710	8662	8614	238566	164258	4327	4397	4466	4536	4605	4675	4744	4814	4883	29
30	7238	7188	7139	7089	7040	6990	6941	6891	6842	246792	169922	9994	10066	10138	10209	10281	10353	10425	10497	10569	30
31	5479	5428	5377	5326	5275	5223	5172	5121	5070	255019	175586	5660	5735	5809	5883	5957	6032	6106	6180	6254	31
32	3720	3668	3615	3562	3509	3456	3404	3351	3298	263245	181250	1327	1403	1480	1557	1633	1710	1787	1863	1940	32
33	1962	1907	1853	1798	1744	1689	1635	1580	1526	271471	186914	6993	7072	7151	7230	7309	7388	7467	7546	7625	33
34	0203	0147	0091	0035	9979	9923	9866	9810	9754	279698	192578	2660	2741	2823	2904	2985	3067	3148	3230	3311	34
35	8444	8386	8329	8271	8213	8156	8098	8040	7982	287924	198242	8326	8410	8494	8578	8662	8745	8829	8913	8997	35
36	6685	6626	6567	6507	6448	6389	6329	6270	6210	296151	203906	3993	4079	4165	4251	4338	4424	4510	4596	4682	36
37	4927	4866	4805	4744	4683	4622	4560	4499	4438	304377	209570	9659	9748	9836	9925	10014	10102	10191	10279	10368	37
38	3168	3105	3043	2980	2917	2855	2792	2729	2666	312603	215234	5325	5417	5508	5599	5690	5781	5872	5963	6054	38
39	1409	1345	1281	1216	1152	1088	1023	959	894	320830	220898	0992	1085	1179	1272	1366	1459	1552	1646	1739	39
40	9650	9585	9519	9453	9387	9321	9255	9188	9122	329056	226562	6658	6754	6850	6946	7042	7137	7233	7329	7425	40
41	7892	7824	7757	7689	7621	7554	7486	7418	7350	337283	232227	2325	2423	2521	2620	2718	2816	2914	3012	3110	41
42	6133	6064	5995	5925	5856	5787	5717	5648	5578	345509	237891	7991	8092	8193	8293	8394	8494	8595	8695	8796	42
43	4374	4303	4232	4162	4091	4020	3949	3878	3807	353735	243555	3658	3761	3864	3967	4070	4173	4276	4379	4482	43
44	2616	2543	2470	2398	2325	2253	2180	2107	2035	361962	249219	9324	9430	9535	9641	9746	9851	9957	10062	10167	44
45	0857	0783	0708	0634	0560	0486	0411	0337	0263	370188	254883	4991	5099	5206	5314	5422	5530	5637	5745	5853	45
46	9098	9022	8946	8871	8795	8719	8643	8567	8491	378415	260547	0657	0767	0878	0988	1098	1208	1318	1428	1538	46
47	7339	7262	7184	7107	7029	6952	6874	6796	6719	386641	266211	6324	6436	6549	6661	6774	6887	6999	7112	7224	47
48	5581	5501	5422	5343	5264	5185	5105	5026	4947	394867	271875	1990	2105	2220	2335	2450	2565	2680	2795	2910	48
49	3822	3741	3660	3579	3499	3418	3337	3256	3175	403094	277539	7656	7774	7891	8009	8126	8243	8361	8478	8595	49
50	2063	1981	1898	1816	1733	1651	1568	1486	1403	411320	283203	3323	3443	3563	3682	3802	3922	4042	4161	4281	50
51	0304	0220	0136	0052	9968	9884	9800	9715	9631	419547	288867	8989	9112	9234	9356	9478	9600	9722	9844	9967	51
52	8546	8460	8374	8288	8203	8117	8031	7945	7859	427773	294531	4656	4781	4905	5030	5154	5279	5403	5528	5652	52
53	6787	6700	6612	6525	6437	6350	6262	6175	6087	435999	300195	0322	0449	0576	0703	0830	0957	1084	1211	1338	53
54	5028	4939	4850	4761	4672	4583	4494	4404	4315	444226	305859	5989	6118	6248	6377	6506	6636	6765	6894	7023	54
55	3269	3179	3088	2997	2907	2816	2725	2634	2543	452452	311523	1655	1787	1919	2051	2182	2314	2446	2577	2709	55
56	1511	1418	1326	1234	1141	1049	0956	0864	0771	460679	317187	7322	7456	7590	7724	7858	7992	8127	8261	8395	56
57	9752	9658	9564	9470	9376	9282	9188	9094	8999	468905	322852	2988	3125	3261	3398	3534	3671	3807	3944	4080	57
58	7993	7898	7802	7706	7611	7515	7419	7323	7227	477131	328516	8655	8794	8933	9072	9210	9349	9488	9627	9766	58
59	6234	6137	6040	5943	5845	5748	5650	5553	5455	485358	334180	4321	4463	4604	4745	4887	5028	5169	5310</		

### TRAVERSE TABLES.

34°		COSINE.										SINE.										34°	
		40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'		
1	8225	8223	8221	8220	8218	8216	8215	8213	8211	8210	5688	5690	5693	5695	5698	5700	5702	5705	5707	5710	5710	1	
2	6450	6446	6443	6440	6436	6433	6430	6426	6423	16420	11376	1381	1386	1390	1395	1400	1405	1409	1414	1419	1419	2	
3	4674	4669	4664	4659	4654	4649	4644	4639	4634	24629	17064	7071	7078	7086	7093	7100	7107	7114	7121	7129	7129	3	
4	2899	2892	2886	2879	2873	2866	2859	2853	2846	32839	22752	2762	2771	2781	2790	2800	2809	2819	2829	2838	2838	4	
5	1124	1115	1107	1099	1091	1082	1074	1066	1057	41049	28440	8452	8464	8476	8488	8500	8512	8524	8536	8548	8548	5	
6	9349	9339	9329	9319	9309	9299	9289	9279	9269	49259	34128	4142	4157	4171	4185	4200	4214	4228	4243	4257	4257	6	
7	7573	7562	7550	7538	7527	7515	7504	7492	7480	57469	39816	9833	9850	9866	9883	9900	9916	9933	9950	9967	9967	7	
8	5798	5785	5772	5758	5745	5732	5718	5705	5692	65679	45504	5523	5542	5561	5581	5600	5619	5638	5657	5676	5676	8	
9	4023	4008	3993	3978	3963	3948	3933	3918	3903	73888	51192	1214	1235	1257	1278	1300	1321	1343	1364	1386	1386	9	
10	2248	2231	2214	2198	2181	2165	2148	2132	2115	82098	56880	6904	6928	6952	6976	7000	7024	7047	7071	7095	7095	10	
11	0472	0454	0436	0418	0399	0381	0363	0345	0326	90308	62568	2594	2621	2647	2673	2700	2726	2752	2778	2805	2805	11	
12	8697	8677	8657	8637	8618	8598	8578	8558	8538	98518	68256	8285	8314	8342	8371	8400	8428	8457	8486	8514	8514	12	
13	6922	6900	6879	6857	6836	6814	6793	6771	6749	106728	73944	3975	4006	4037	4069	4101	4133	4164	4193	4224	4224	13	
14	5147	5123	5100	5077	5054	5031	5007	4984	4961	114938	79632	9666	9699	9733	9766	9800	9833	9866	9900	9933	9933	14	
15	3371	3346	3322	3297	3272	3247	3222	3197	3172	123147	85320	5356	5392	5428	5464	5500	5535	5571	5607	5643	5643	15	
16	1596	1570	1543	1517	1490	1464	1437	1410	1384	131357	91008	1046	1085	1123	1161	1199	1238	1276	1314	1352	1352	16	
17	9821	9793	9764	9736	9708	9680	9652	9624	9595	139567	96696	6737	6778	6818	6859	6899	6940	6981	7021	7062	7062	17	
18	8046	8016	7986	7956	7926	7896	7867	7837	7807	147777	102384	2427	2470	2513	2556	2599	2642	2685	2728	2771	2771	18	
19	6270	6239	6207	6176	6144	6113	6081	6050	6018	155987	108072	8118	8168	8219	8270	8321	8372	8423	8474	8525	8576	19	
20	4495	4462	4429	4396	4363	4329	4296	4263	4230	164197	113760	3808	3856	3904	3952	3999	4047	4095	4143	4190	4190	20	
21	2720	2685	2650	2615	2581	2546	2511	2476	2441	172406	119448	9498	9549	9599	9649	9699	9749	9800	9850	9900	9900	21	
22	0945	0908	0872	0835	0799	0762	0726	0689	0653	180616	125136	5189	5241	5294	5347	5399	5452	5504	5557	5610	5610	22	
23	9169	9131	9093	9055	9017	8979	8941	8902	8864	188826	130824	8799	8934	9069	9199	9329	9459	9589	9719	9849	9849	23	
24	7394	7354	7315	7275	7235	7195	7155	7116	7076	197036	136512	6570	6627	6684	6742	6799	6857	6914	6971	7029	7029	24	
25	5619	5577	5536	5495	5453	5412	5370	5329	5287	205246	142200	2260	2320	2380	2439	2499	2559	2619	2678	2738	2738	25	
26	3844	3800	3757	3714	3671	3628	3585	3542	3499	213456	147888	7950	8013	8075	8137	8199	8261	8323	8386	8448	8448	26	
27	2068	2024	1979	1934	1889	1845	1800	1755	1710	221665	153576	3641	3705	3770	3835	3899	3964	4028	4093	4157	4157	27	
28	0293	0247	0200	0154	0108	0061	0015	9969	9922	229875	159264	9331	9398	9465	9532	9599	9666	9733	9800	9867	9867	28	
29	8518	8470	8422	8374	8326	8278	8230	8181	8133	238085	164952	5022	5091	5160	5230	5299	5368	5438	5507	5576	5576	29	
30	6743	6693	6643	6594	6544	6494	6444	6395	6345	246295	170640	6712	6784	6856	6927	6999	7071	7142	7214	7286	7286	30	
31	4967	4916	4865	4813	4762	4711	4659	4608	4556	254505	176328	6402	6477	6551	6625	6699	6773	6847	6921	6995	6995	31	
32	3192	3139	3086	3033	2980	2927	2874	2821	2768	262715	182016	2093	2169	2246	2322	2399	2475	2552	2628	2705	2705	32	
33	1417	1362	1308	1253	1198	1143	1089	1034	979	270924	187704	7783	7862	7941	8020	8099	8178	8257	8335	8414	8414	33	
34	9642	9585	9529	9473	9416	9360	9304	9247	9191	279134	193392	3474	3555	3636	3718	3799	3880	3961	4043	4124	4124	34	
35	7866	7808	7750	7692	7634	7576	7518	7460	7402	287344	199080	9164	9248	9332	9415	9499	9582	9666	9750	9833	9833	35	
36	6091	6031	5972	5912	5853	5793	5733	5673	5614	295554	204768	4855	4941	5027	5113	5199	5285	5371	5457	5543	5543	36	
37	4316	4255	4193	4132	4071	4009	3948	3887	3825	303764	210456	6545	6633	6722	6810	6899	6987	7076	7164	7252	7252	37	
38	2541	2478	2415	2352	2289	2226	2163	2100	2037	311974	216144	6235	6326	6417	6508	6599	6690	6780	6871	6962	6962	38	
39	0765	0701	0636	0572	0507	0442	0378	0313	0248	320183	221832	1926	2019	2112	2206	2299	2392	2485	2578	2671	2671	39	
40	8990	8924	8858	8791	8725	8659	8592	8526	8460	328393	227520	7616	7712	7807	7903	7999	8094	8190	8285	8381	8381	40	
41	7215	7147	7079	7011	6943	6875	6807	6739	6671	336603	233208	3307	3405	3503	3601	3699	3797	3895	3993	4091	4091	41	
42	5440	5370	5300	5231	5161	5092	5022	4952	4883	344813	238896	8997	9097	9198	9298	9399	9499	9599	9700	9800	9800	42	
43	3664	3593	3522	3451	3379	3308	3237	3166	3095	353023	244584	4687	4790	4893	4996	5099	5201	5304	5407	5510	5510	43	
44	1889	1816	1743	1670	1598	1525	1452	1379	1306	361233	250272	378	4083	4388	4693	5000	5304	5607	5909	6212	6212	44	
45	0114	0039	9965	9890	9816	9741	9666	9592	9517	369442	255960	6068	6176	6283	6391	6499	6606	6714	6821	6929	6929	45	
46	8339	8262	8186	8110	8034	7958	7881	7805	7729	377652	261648	1759	1869	1979	2089	2199	2308	2418	2528	2638	2638	46	
47	6563	6486	6408	6330	6252	6174	6096	6018	5940	385862	267336	7449	7561	7674	7786	7898	8011	8123	8235	8348	8348	47	
48	4788	4709	4629	4550	4470	4391	4311	4231	4152	394072	273024	3139	3254	3369	3484	3598	3713	3828	3943	4057	4057	48	
49	3013	2932	2851	2769	2688	2607	2526	2444	2363	402282	278713	8830	8947	9064	9181	9298	9415	9533	9650	9767	9767	49	
50	1238	1155	1072	989	906	823	741	658	575	410492	284402	4520	4640	4759	4879	4998	5118	5237	5357	5476	5476	50	
51	9462	9378	9293	9209	9124	9040	8955	8871	8786	418701	290089	0211	0333	0455	0576	0698	0820	0942	1064	1186	1186	51	
52	7687	7601	7515	7429	7343	7256	7170	7084	6998	426911	295777	5901	6025	6150	6274	6398	6523	6647	6771	6895	6895	52	
53	5912	5824	5736	5649	5561	5473	5385	5297	5209	435121	301465	1591	1718	1845	1972	2099	2225	2352	2478	2605	2605	53	
54	4137	4047	3958	3868	3777	3689	3600	3510	3421	443331	307153	7282	7411	7540	7669	7798	7927	8056	8185	8314	8314	54	
55	2361	2270	2179	2088	1997	1906	1815	1723	1632	451541	312841	2972	3104	3235	3367	3498	3630	3761	3892	4024	4024	55	
56	0586	0493	0401	0308	0215	0122	0029	9937	9844	459751	318529	8663	8797	8930	9064	9198	9332	9466	9600	9733	9733	56	
57	8811	8716	8622	8528	8433	8339	8244	8150	8055	467960	324217	4353	4489	4626	4762	4898	5034	5171	5307	5443	5443	57	

TRAVERSE TABLES.

Table with columns for angles (34°, 55°) and trigonometric functions (COSINE, SINE). The table contains numerical values for various angles and functions, organized in a grid format.

TRAVERSE TABLES.

35°	COSINE.									SINE.									35°		
	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	0'	1'	2'	3'	4'	5'	6'	7'		8'	9'
1	8192	8190	8188	8187	8185	8183	8181	8180	8178	8176	5736	5738	5741	5743	5745	5748	5750	5752	5755	5757	1
2	6383	6380	6376	6373	6370	6366	6363	6360	6356	1'6353	1'472	1476	1481	1486	1491	1495	1500	1505	1510	1514	2
3	4575	4570	4565	4560	4555	4550	4544	4539	4534	2'4529	1'7207	7214	7222	7229	7236	7243	7250	7257	7264	7272	3
4	2766	2759	2753	2746	2739	2733	2726	2719	2713	3'2706	2'2943	2953	2962	2972	2981	2991	3000	3010	3019	3029	4
5	0958	0949	0941	0933	0924	0916	0907	0899	0891	4'0882	2'8679	8691	8703	8715	8726	8738	8750	8762	8774	8786	5
6	9149	9139	9129	9119	9109	9099	9089	9079	9069	4'9059	3'4415	4429	4443	4457	4472	4486	4500	4515	4529	4543	6
7	7341	7329	7317	7306	7294	7282	7270	7259	7247	5'5235	4'0150	0167	0184	0200	0217	0234	0250	0267	0284	0300	7
8	5532	5519	5505	5492	5479	5465	5452	5439	5425	6'5412	4'5886	5905	5924	5943	5962	5981	6000	6019	6038	6058	8
9	3724	3709	3694	3679	3664	3649	3633	3618	3603	7'3588	5'1622	1643	1665	1686	1708	1729	1750	1772	1793	1815	9
10	1915	1899	1882	1865	1848	1832	1815	1798	1782	8'1765	5'3358	7381	7405	7429	7453	7477	7501	7524	7548	7572	10
11	0107	0088	0070	0052	0033	0015	9996	9978	9960	8'9941	6'3093	3120	3146	3172	3198	3224	3251	3277	3303	3329	11
12	8298	8278	8258	8238	8218	8198	8178	8158	8138	9'8118	6'8829	8858	8886	8915	8944	8972	9001	9029	9058	9086	12
13	6490	6468	6446	6425	6403	6381	6359	6338	6316	10'6294	7'4565	4596	4627	4658	4689	4720	4751	4782	4813	4843	13
14	4681	4658	4635	4611	4588	4564	4541	4518	4494	11'4471	8'0301	0334	0367	0401	0434	0467	0501	0534	0567	0601	14
15	2873	2848	2823	2798	2773	2748	2722	2697	2672	12'2647	8'6036	6072	6108	6144	6179	6215	6251	6286	6322	6358	15
16	1064	1038	1011	984	957	931	904	877	850	13'0824	9'1772	1810	1848	1887	1925	1963	2001	2039	2077	2115	16
17	9256	9227	9199	9171	9142	9114	9085	9057	9029	13'9000	9'7508	7548	7589	7629	7670	7710	7751	7791	7832	7872	17
18	7447	7417	7387	7357	7327	7297	7267	7237	7207	14'7177	10'3244	3287	3330	3372	3415	3458	3501	3544	3587	3629	18
19	5639	5607	5575	5544	5512	5480	5448	5417	5385	15'5353	10'8980	9025	9070	9115	9161	9206	9251	9296	9341	9387	19
20	3830	3797	3764	3730	3697	3663	3630	3596	3563	16'3530	11'4715	4763	4811	4858	4906	4953	5001	5049	5096	5144	20
21	2022	1987	1952	1917	1882	1847	1811	1776	1741	17'1706	12'0451	0501	0551	0601	0651	0701	0751	0801	0851	0901	21
22	0213	0177	0140	0103	0067	0030	9993	9956	9919	17'9882	12'6187	6239	6292	6344	6396	6449	6501	6554	6606	6658	22
23	8405	8367	8328	8290	8251	8213	8174	8136	8097	18'8059	13'1923	1977	2032	2087	2142	2196	2251	2306	2361	2415	23
24	6596	6556	6516	6476	6436	6396	6356	6316	6276	19'6235	13'7658	7716	7773	7830	7887	7944	8001	8058	8115	8173	24
25	4788	4746	4705	4663	4621	4579	4537	4495	4454	20'4412	14'3394	3454	3513	3573	3632	3692	3751	3811	3870	3930	25
26	2980	2936	2893	2849	2806	2762	2719	2675	2632	21'2588	14'9130	9192	9254	9316	9378	9439	9501	9563	9625	9687	26
27	1171	1126	1081	1036	991	946	900	855	810	22'0765	15'4866	4930	4994	5059	5123	5187	5251	5316	5380	5444	27
28	9363	9316	9269	9222	9176	9129	9082	9035	8988	22'8941	16'0601	0668	0735	0802	0868	0935	1001	1068	1135	1201	28
29	7554	7506	7457	7409	7360	7312	7263	7215	7166	23'7118	16'6367	6406	6475	6544	6613	6682	6752	6821	6890	6959	29
30	5746	5696	5645	5595	5545	5495	5445	5395	5345	24'5294	17'2073	2144	2216	2287	2359	2430	2502	2573	2644	2716	30
31	3937	3885	3834	3782	3730	3678	3626	3575	3523	25'3471	17'7809	7883	7956	8030	8104	8178	8252	8325	8399	8473	31
32	2129	2075	2022	1968	1915	1861	1808	1755	1701	26'1647	18'3544	3621	3697	3773	3849	3926	4002	4078	4154	4230	32
33	0320	0265	0210	0155	0100	0045	9989	9934	9879	26'9824	18'9280	9359	9437	9516	9595	9673	9752	9830	9909	9987	33
34	8512	8455	8398	8341	8285	8228	8171	8114	8057	27'8000	19'5016	5097	5178	5259	5340	5421	5502	5583	5664	5744	34
35	6703	6645	6586	6528	6469	6411	6352	6294	6235	28'6177	20'0752	0835	0919	1002	1085	1169	1252	1335	1418	1502	35
36	4895	4835	4775	4714	4654	4594	4534	4474	4413	29'4353	20'6488	6573	6659	6745	6831	6916	7002	7088	7173	7259	36
37	3086	3025	2963	2901	2839	2777	2715	2653	2592	30'2530	21'2223	2311	2400	2488	2576	2664	2752	2840	2928	3016	37
38	1278	1214	1151	1087	1024	960	897	833	770	31'0706	21'7959	8050	8140	8231	8321	8412	8502	8592	8683	8773	38
39	9469	9404	9339	9274	9209	9144	9078	9013	8948	31'8883	22'3695	3788	3881	3974	4066	4159	4252	4345	4438	4530	39
40	7661	7594	7527	7460	7394	7327	7260	7193	7126	32'7059	22'9431	9526	9621	9716	9812	9907	10002	10097	10192	10288	40
41	5852	5784	5715	5647	5578	5510	5441	5373	5304	33'5236	23'5166	5264	5362	5459	5557	5655	5752	5850	5947	6045	41
42	4044	3974	3904	3834	3763	3693	3623	3553	3482	34'3412	24'0902	1002	1102	1202	1302	1402	1502	1602	1702	1802	42
43	2235	2164	2092	2020	1948	1876	1804	1732	1660	35'1588	24'6638	6740	6843	6945	7048	7150	7252	7355	7457	7559	43
44	0427	0353	0280	0207	0133	0059	9986	9912	9839	35'9765	25'2374	2478	2583	2688	2793	2898	3002	3107	3212	3316	44
45	8618	8543	8468	8393	8318	8243	8167	8092	8017	36'7941	25'8109	8217	8324	8431	8538	8645	8752	8859	8966	9074	45
46	6810	6733	6656	6580	6503	6426	6349	6272	6195	37'6118	26'3845	3955	4064	4174	4283	4393	4502	4612	4721	4831	46
47	5001	4923	4845	4766	4688	4609	4530	4452	4373	38'4294	26'9581	9693	9805	9917	10029	10141	10252	10364	10476	10588	47
48	3193	3113	3033	2953	2872	2792	2712	2632	2551	39'2471	27'5317	5431	5545	5660	5774	5888	6003	6117	6231	6345	48
49	1384	1303	1221	1139	1057	975	893	811	729	40'0647	28'1052	1169	1286	1403	1519	1636	1753	1869	1986	2102	49
50	9576	9493	9409	9325	9242	9158	9075	8991	8908	40'8824	28'6788	6997	7026	7146	7265	7384	7503	7622	7741	7860	50
51	7768	7682	7597	7512	7427	7342	7256	7171	7086	41'7000	29'2524	2645	2767	2888	3010	3131	3253	3374	3495	3617	51
52	5959	5872	5785	5699	5612	5525	5438	5351	5264	42'5177	29'8260	8384	8508	8631	8755	8879	9003	9126	9250	9374	52
53	4151	4062	3974	3885	3797	3708	3619	3531	3442	43'3353	30'3995	4122	4248	4374	4500	4627	4753	4879	5005	5131	53
54	2342	2252	2162	2072	1981	1891	1801	1710	1620	44'1530	30'9731	9860	9989	10117	10246	10374	10503	10631	10760	10888	54
55	0534	0442	0350	0258	0166	0074	9982	9890	9798	44'9706	31'5467	5598	5729	5860	5991	6122	6253	6384	6515	6645	55
56	8725	8632	8538	8445	8351	8257	8164	8070	7976	45'7883	32'1203	1336	1470	1603	1736	1870	2003	2136	2269	2403	56
57	6917	6822	6726	6631	6536	6441	6345	6250	6155	46'6059	32'6939	7074	7210	7346	7482	7617	7753	7889	8024	8160	57
58	5108	5011	4915	4818	4721	4624	4527	4430	4333	47'4236	33'2674	2813	2951	3089	3227	3365	3503	3641	3779	3917	58
59	3300	3201	3103	3004	2906	2807	2708	2610	2511	48'2412	33'8410	8551	8691	8832	8972	9113	9253	9393	9534	9674	59
60	1491	1391	1291	1191	1090	9															

TRAVERSE TABLES.

35°	COSINE.																			SINE.																			35°
	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'																			
1	8175	8173	8171	8170	8168	8166	8165	8163	8161	8160	5760	5762	5764	5767	5769	5771	5774	5776	5779	5781	1																		
2	6350	6346	6343	6340	6336	6333	6329	6326	6323	6321	1'6319	1'1519	1'524	1'529	1'533	1'538	1'543	1'548	1'552	1'557	2																		
3	4524	4519	4514	4509	4504	4499	4494	4489	4484	4482	2'4479	2'7279	2'286	2'293	2'300	2'307	2'314	2'321	2'329	2'336	3																		
4	2699	2693	2686	2679	2672	2666	2659	2652	2646	2645	3'2639	3'3038	3'048	3'057	3'067	3'076	3'086	3'095	3'105	3'114	4																		
5	874	866	857	849	840	832	824	815	807	807	4'0798	4'2798	4'881	4'882	4'883	4'884	4'885	4'886	4'887	4'888	5																		
6	9049	9039	9029	9019	9009	8998	8988	8978	8968	8968	4'8598	4'557	4'572	4'586	4'600	4'614	4'629	4'643	4'657	4'671	6																		
7	7224	7212	7200	7188	7177	7165	7153	7141	7130	7130	5'7118	5'4317	5'334	5'350	5'367	5'384	5'400	5'417	5'433	5'450	7																		
8	5398	5385	5372	5358	5345	5331	5318	5304	5291	5291	6'5278	6'4077	6'296	6'185	6'134	6'153	6'172	6'191	6'210	6'229	8																		
9	3573	3558	3543	3528	3513	3498	3483	3468	3452	3452	7'3437	7'1836	7'029	6'879	6'730	6'581	6'432	6'283	6'134	5'985	9																		
10	1748	1731	1714	1698	1681	1664	1647	1631	1614	1614	8'1597	7'596	7'419	7'243	7'067	6'891	6'715	6'539	6'363	6'187	10																		
11	9923	9904	9886	9867	9849	9831	9812	9794	9775	9775	8'9757	8'3355	8'181	8'027	7'873	7'719	7'565	7'411	7'257	7'103	11																		
12	8098	8078	8057	8037	8017	7997	7977	7957	7937	7937	9'7916	9'115	8'913	8'712	8'511	8'310	8'109	7'908	7'707	7'506	12																		
13	6272	6251	6229	6207	6185	6163	6142	6120	6098	6098	10'6076	7'4874	7'286	7'085	6'884	6'683	6'482	6'281	6'080	5'879	13																		
14	4447	4424	4400	4377	4353	4330	4306	4283	4259	4259	11'4236	8'0634	7'867	7'670	7'473	7'276	7'079	6'882	6'685	6'488	14																		
15	2622	2597	2572	2547	2521	2496	2471	2446	2421	2421	12'2395	8'6394	8'442	8'245	8'048	7'851	7'654	7'457	7'260	7'063	15																		
16	9797	9770	9743	9716	9690	9663	9636	9609	9582	9582	13'0555	9'2153	9'018	8'821	8'624	8'427	8'230	8'033	7'836	7'639	16																		
17	8972	8943	8915	8886	8858	8829	8801	8772	8743	8743	13'8715	9'7913	9'594	9'395	9'196	8'997	8'798	8'599	8'399	8'200	17																		
18	7146	7116	7086	7056	7026	6995	6965	6935	6905	6905	14'6875	10'3672	10'168	9'969	9'770	9'571	9'372	9'173	8'974	8'775	18																		
19	5321	5289	5256	5222	5189	5156	5123	5090	5056	5056	15'5034	10'9432	10'744	10'545	10'346	10'147	9'948	9'749	9'549	9'350	19																		
20	3496	3463	3429	3395	3362	3328	3295	3261	3228	3228	16'3194	11'5191	11'320	11'121	10'922	10'723	10'524	10'325	10'126	9'927	20																		
21	1671	1636	1600	1565	1530	1495	1459	1424	1389	1389	17'1354	12'0951	11'896	11'697	11'498	11'299	11'100	10'901	10'702	10'503	21																		
22	9846	9809	9772	9735	9698	9661	9624	9587	9550	9550	17'9513	12'6710	12'472	12'273	12'074	11'875	11'676	11'477	11'278	11'079	22																		
23	8020	7982	7943	7905	7866	7828	7789	7750	7712	7712	18'7673	13'2470	13'048	12'849	12'650	12'451	12'252	12'053	11'854	11'655	23																		
24	6195	6155	6115	6075	6034	5994	5954	5913	5873	5873	19'5833	13'8230	13'624	13'425	13'226	13'027	12'828	12'629	12'430	12'231	24																		
25	4370	4328	4286	4244	4202	4160	4118	4076	4034	4034	20'3992	14'3989	14'199	14'000	13'801	13'602	13'403	13'204	13'005	12'806	25																		
26	2545	2501	2458	2414	2370	2327	2283	2239	2196	2196	21'2152	14'9749	14'775	14'576	14'377	14'178	13'979	13'780	13'581	13'382	26																		
27	720	674	629	584	539	494	448	403	357	357	22'0312	15'5508	15'351	15'152	14'953	14'754	14'555	14'356	14'157	13'958	27																		
28	8894	8848	8801	8754	8707	8660	8613	8566	8519	8519	22'8471	16'1268	15'927	15'728	15'529	15'330	15'131	14'932	14'733	14'534	28																		
29	7069	7021	6972	6923	6875	6826	6777	6729	6680	6680	23'6631	16'7027	16'503	16'304	16'105	15'906	15'707	15'508	15'309	15'110	29																		
30	5244	5194	5143	5093	5043	4992	4942	4892	4841	4841	24'4791	17'2787	17'079	16'880	16'681	16'482	16'283	16'084	15'885	15'686	30																		
31	3419	3367	3315	3263	3211	3159	3107	3055	3003	3003	25'2951	17'8547	17'655	17'456	17'257	17'058	16'859	16'660	16'461	16'262	31																		
32	1594	1540	1486	1433	1379	1325	1272	1218	1164	1164	26'1110	18'4306	18'231	18'032	17'833	17'634	17'435	17'236	17'037	16'838	32																		
33	9768	9713	9658	9602	9547	9492	9436	9381	9325	9325	26'9270	19'0066	18'807	18'608	18'409	18'210	18'011	17'812	17'613	17'414	33																		
34	7943	7886	7829	7772	7715	7658	7601	7544	7487	7487	27'7430	19'5825	19'383	19'184	18'985	18'786	18'587	18'388	18'189	17'990	34																		
35	6118	6059	6001	5942	5883	5825	5766	5707	5648	5648	28'5589	20'1585	19'959	19'760	19'561	19'362	19'163	18'964	18'765	18'566	35																		
36	4293	4233	4172	4112	4051	3991	3930	3870	3810	3810	29'3749	20'7344	20'535	20'336	20'137	19'938	19'739	19'540	19'341	19'142	36																		
37	2468	2406	2344	2282	2219	2157	2095	2033	1971	1971	30'1909	21'3104	21'111	20'912	20'713	20'514	20'315	20'116	19'917	19'718	37																		
38	6642	6579	6515	6451	6388	6324	6260	6196	6132	6132	31'0068	21'8864	21'687	21'488	21'289	21'090	20'891	20'692	20'493	20'294	38																		
39	8817	8752	8687	8621	8556	8490	8425	8359	8294	8294	31'8228	22'4623	22'263	22'064	21'865	21'666	21'467	21'268	21'069	20'870	39																		
40	6992	6925	6858	6791	6724	6657	6589	6522	6455	6455	32'6388	23'0383	22'839	22'640	22'441	22'242	22'043	21'844	21'645	21'446	40																		
41	5167	5098	5029	4961	4892	4823	4754	4685	4616	4616	33'4547	23'6142	23'415	23'216	23'017	22'818	22'619	22'420	22'221	22'022	41																		
42	3342	3271	3201	3130	3060	2989	2919	2848	2778	2778	34'2707	24'1902	23'991	23'792	23'593	23'394	23'195	22'996	22'797	22'598	42																		
43	1516	1444	1372	1300	1228	1156	1084	1011	939	939	35'0867	24'7661	24'567	24'368	24'169	23'970	23'771	23'572	23'373	23'174	43																		
44	9691	9618	9544	9470	9396	9322	9248	9174	9101	9101	35'9027	25'3421	25'143	24'944	24'745	24'546	24'347	24'148	23'949	23'750	44																		
45	7866	7791	7715	7640	7564	7489	7413	7338	7262	7262	36'7186	25'9181	25'719	25'520	25'321	25'122	24'923	24'724	24'525	24'326	45																		
46	6041	5964	5887	5810	5732	5655	5578	5501	5423	5423	37'5346	26'4940	26'295	26'096	25'897	25'698	25'499	25'300	25'101	24'902	46																		
47	4216	4137	4058	3979	3900	3822	3743	3664	3585	3585	38'3506	27'0700	26'871	26'672	26'473	26'274	26'075	25'876	25'677	25'478	47																		
48	2390	2310	2230	2149	2069	1988	1907	1827	1746	1746	39'1665	27'6459	27'446	27'247	27'048	26'849	26'650	26'451	26'252	26'053	48																		
49	565	483	401	319	237	155	73	10	-72	-72	40'9825	28'2219	28'022	27'823	27'624	27'425	27'226	27'027	26'828	26'629	49																		
50	8740	8656	8572	8489	8405	8321	8237	8153	8069	8069	41'7985	28'7978	28'598	28'399	28'200	28'001	27'802	27'603	27'404	27'205	50																		
51	6915	6829	6744	6658	6573	6487	6402	6316	6230	6230	41'6144	29'3738	29'174	28'975	28'776	28'577	28'378	28'179	27'980	27'781	51																		
52	5090	5003	4915	4828	4741	4654	4566	4479	4392	4392	42'4304	29'9498	29'750	29'551	29'352	29'153	28'954	28'755	28'556	28'357	52																		
53	3264	3176	3087	2998	2909	2820	2731	2642	2553	2553	43'2464	30'5257	30'326	30'127	29'928	29'729	29'530	29'331	29'132	28'933	53																		
54	1439	1349	1258	1168	1077	986	896	805	714	714	44'0624	31'1017	30'902	30'703	30'504	30'305	30'106	29'907	29'708	29'509	54																		
55	9614	9522	9430	9337	9245	9153	9060	8968	8876	8876	44'8783	31'6776	31'478	31'279	31'080	30'881	30'682	30'483	30'284	30'085	55																		
56	7789	7695	7601	7507	7413	7319	7225	7131	7037	7037	45'6943	32'2536	32'054	31'855	31'656	31'457	31'258	31'059	30'860	30'661	56																		
57	5964	5868	5773	5677																																			



TRAVERSE TABLES.

Table with columns for degrees (35°, 54°) and trigonometric functions (COSINE, SINE). It contains numerical values for angles from 1° to 90° in 1-degree increments, with sub-columns for minutes (20' to 29').



TRAVERSE TABLES.

Table with columns for COSINE and SINE, and rows for degrees 35 to 54. The table is split into two main sections: COSINE on the left and SINE on the right. Each section has columns for degrees (35 to 54) and minutes (40 to 49). The data consists of numerical values for cosine and sine of various angles.



TRAVERSE TABLES.

Table with columns for angles (36° to 53°), COSINE, and SINE. It includes numerical values for each degree and minute combination. The cosine table is on the left and the sine table is on the right.











TRAVERSE TABLES.

Table with columns for angles (36°, 50', 51', 52', 53', 54', 55', 56', 57', 58', 59', 10', 9', 8', 7', 6', 5', 4', 3', 2', 1', 10', 9', 8', 7', 6', 5', 4', 3', 2', 1') and rows for cosine and sine values. The table is organized into two main sections: Cosine (left) and Sine (right), with a 36-degree angle indicated at the top and bottom corners.

TRAVERSE TABLES.

37°

COSINE.

SINE.

37°

Table with 18 columns for degrees (0 to 9) and 18 rows for minutes (1 to 100). The table is split into two sections: the top section shows Cosine values for 37° and Sine values for 37°, and the bottom section shows Sine values for 52° and Cosine values for 52°. Each cell contains a numerical value representing the trigonometric function at that specific angle and minute.

TRAVERSE TABLES.

Table with columns for degrees (37° to 52°) and minutes (0' to 60'), and rows for cosine and sine values. The table is divided into two main sections: Cosine (left) and Sine (right), each with a 37° header and a 52° footer.

TRAVERSE TABLES.

Table with columns for angles (37°, 52°) and rows for cosine and sine values. The table is organized into two main sections: COSINE (top) and SINE (bottom), each with sub-columns for degrees and minutes.

TRAVERSE TABLES.

Table with columns for degrees (37° to 52°) and minutes (30' to 21'). Rows are labeled with numbers 1-100. The table is divided into Cosine and Sine sections. Each row contains values for 10-minute intervals. The Cosine section is on the left and the Sine section is on the right.

TRAVERSE TABLES.

Table with columns for degrees (37° to 52°) and minutes (40' to 49'). It contains two main sections: COSINE and SINE. Each section has a grid of numerical values for each minute. The table is oriented vertically on the page.

TRAVERSE TABLES.

Table with columns for degrees (37° to 52°) and minutes (50' to 59'). It contains two main sections: 'COSINE.' and 'SINE.' with numerical values for each degree-minute combination.



TRAVERSE TABLES.

Table with columns for degrees (38° to 51°), cosine values, and sine values. The table is organized into two main sections: Cosine on the left and Sine on the right, with degree markings at the top and bottom.

TRAVERSE TABLES.

38°		COSINE.																		SINE.																		38°	
		10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'																		
1	7862	7860	7859	7857	7855	7853	7851	7850	7848	7846	6180	6182	6184	6186	6189	6191	6193	6196	6198	6200	1																		
2	5724	5721	5717	5714	5710	5706	5703	5699	5696	5692	12359	2364	2368	2373	2377	2382	2386	2391	2396	2400	2																		
3	3586	3581	3576	3570	3565	3560	3554	3549	3543	3538	18539	8545	8552	8559	8566	8573	8580	8587	8593	8600	3																		
4	1449	1441	1434	1427	1420	1413	1405	1398	1391	1384	24718	4727	4736	4745	4755	4764	4773	4782	4791	4800	4																		
5	9311	9302	9293	9284	9275	9266	9257	9248	9239	9230	30898	0909	0920	0932	0943	0955	0966	0978	0989	1000	5																		
6	7173	7162	7151	7141	7130	7119	7108	7097	7087	7076	37077	7091	7105	7118	7132	7146	7159	7173	7187	7200	6																		
7	5035	5023	5010	4997	4985	4972	4960	4947	4934	4922	43257	3273	3289	3305	3321	3337	3353	3369	3385	3401	7																		
8	2897	2883	2869	2854	2840	2825	2811	2797	2782	2768	49436	9454	9473	9491	9509	9528	9546	9564	9582	9601	8																		
9	0759	0743	0727	0711	0695	0679	0662	0646	0630	0614	55616	5636	5657	5677	5698	5718	5739	5760	5780	5801	9																		
10	8622	8604	8586	8568	8550	8532	8514	8496	8478	8460	61795	1818	1841	1864	1887	1909	1932	1955	1978	2001	10																		
11	6484	6464	6444	6424	6405	6385	6365	6345	6325	6306	67975	8000	8025	8050	8075	8100	8125	8151	8176	8201	11																		
12	4346	4324	4303	4281	4260	4238	4216	4195	4173	4152	74154	4182	4209	4236	4264	4291	4319	4346	4373	4401	12																		
13	2208	2185	2161	2138	2115	2092	2068	2044	2021	1997	80334	0363	0393	0423	0453	0482	0512	0542	0571	0601	13																		
14	0070	0045	0020	9995	9970	9945	9919	9894	9869	9843	86513	6545	6577	6609	6641	6673	6705	6737	6769	6801	14																		
15	7932	7906	7879	7852	7825	7798	7771	7743	7716	117689	92693	2727	2761	2796	2830	2864	2898	2933	2967	3001	15																		
16	5795	5766	5737	5708	5680	5651	5622	5593	5564	5535	98872	8909	8945	8982	9018	9055	9092	9128	9165	9201	16																		
17	3657	3626	3596	3565	3534	3504	3473	3443	3412	3381	105052	5091	5129	5168	5207	5246	5285	5324	5362	5401	17																		
18	1519	1487	1454	1422	1389	1357	1325	1292	1260	1227	111231	1272	1314	1355	1396	1437	1478	1519	1560	1601	18																		
19	9381	9347	9313	9279	9244	9210	9176	9142	9108	9073	117411	7454	7498	7541	7584	7627	7671	7715	7758	7801	19																		
20	7243	7207	7171	7135	7099	7063	7027	6991	6955	6919	123590	3636	3682	3727	3773	3819	3864	3910	3956	4001	20																		
21	5105	5068	5030	4992	4954	4917	4879	4841	4803	4765	129770	9818	9866	9914	9962	10058	10106	10154	10202	21																			
22	2968	2928	2889	2849	2809	2770	2730	2690	2651	2611	135949	6000	6050	6100	6150	6201	6251	6301	6351	6402	22																		
23	0830	0788	0747	0706	0664	0623	0581	0540	0499	0457	142129	2181	2234	2287	2339	2392	2444	2497	2549	2602	23																		
24	8692	8649	8606	8562	8519	8476	8433	8390	8346	8303	148308	8363	8418	8473	8528	8583	8637	8692	8747	8802	24																		
25	6554	6509	6464	6419	6374	6329	6284	6239	6194	6149	154488	4545	4602	4659	4716	4773	4831	4888	4945	5002	25																		
26	4416	4370	4323	4276	4229	4182	4136	4089	4042	4000	160667	0727	0786	0846	0905	0964	1024	1083	1143	1202	26																		
27	2278	2230	2181	2133	2084	2036	1987	1938	1890	1841	166847	6909	6970	7032	7094	7155	7217	7279	7340	7402	27																		
28	0141	0090	0040	9990	9939	9889	9838	9788	9737	9687	173026	3090	3154	3218	3282	3346	3410	3474	3538	3602	28																		
29	8003	7951	7899	7846	7794	7742	7690	7637	7585	7533	179206	9272	9338	9405	9471	9537	9603	9670	9736	9802	29																		
30	5865	5811	5757	5703	5649	5595	5541	5487	5433	5379	185385	5454	5523	5591	5660	5728	5797	5865	5934	6002	30																		
31	3727	3671	3616	3560	3504	3448	3392	3337	3281	3225	191565	1636	1707	1777	1848	1919	1990	2061	2131	2202	31																		
32	1589	1532	1474	1417	1359	1301	1244	1186	1128	1071	197744	7818	7891	7964	8037	8110	8183	8256	8329	8402	32																		
33	9451	9392	9333	9273	9214	9155	9095	9036	8976	8917	203924	3999	4075	4150	4226	4301	4376	4452	4527	4603	33																		
34	7314	7252	7191	7130	7069	7008	6947	6885	6824	6763	210103	0181	0259	0337	0414	0492	0570	0647	0725	0802	34																		
35	5176	5113	5050	4987	4924	4861	4798	4735	4672	4609	216283	6363	6443	6523	6603	6683	6763	6843	6923	7003	35																		
36	3038	2973	2908	2844	2779	2714	2649	2584	2520	2455	222462	2545	2627	2709	2792	2874	2956	3038	3120	3203	36																		
37	0900	0834	0767	0700	0634	0567	0501	0434	0367	0301	228642	8727	8811	8896	8980	9065	9149	9234	9318	9403	37																		
38	8762	8694	8626	8557	8489	8420	8352	8284	8215	8147	234821	4908	4995	5082	5169	5256	5343	5429	5516	5603	38																		
39	6624	6554	6484	6414	6344	6274	6203	6133	6063	5992	241100	1090	1179	1268	1358	1447	1536	1625	1714	1803	39																		
40	4487	4415	4343	4271	4199	4127	4055	3983	3911	3838	247180	7272	7363	7455	7546	7638	7729	7820	7912	8003	40																		
41	2349	2275	2201	2128	2054	1980	1906	1832	1758	321684	3544	3547	3641	3735	3828	3922	4016	4109	4203	41																			
42	0211	0135	0060	9984	9909	9833	9757	9682	9606	329530	9636	9732	9828	9924	1019	0115	0211	0307	0403	42																			
43	8073	7996	7918	7841	7764	7686	7609	7531	7454	337376	265719	5817	5916	6014	6112	6210	6309	6407	6505	6603	43																		
44	5935	5856	5777	5698	5619	5539	5460	5381	5302	345222	271899	1999	2100	2200	2301	2401	2502	2602	2703	2803	44																		
45	3797	3717	3636	3555	3474	3393	3312	3230	3149	353068	278078	8181	8284	8387	8489	8592	8695	8798	8901	9003	45																		
46	1660	1577	1494	1411	1329	1246	1163	1080	997	360914	284258	4363	4468	4573	4678	4783	4888	4993	5098	5203	46																		
47	9522	9437	9353	9268	9184	9099	9014	8930	8845	368760	290437	0545	0652	0759	0867	0974	1082	1189	1296	1403	47																		
48	7384	7298	7211	7125	7039	6952	6866	6779	6693	376606	296617	6726	6836	6946	7055	7165	7275	7384	7494	7604	48																		
49	5246	5158	5070	4982	4894	4805	4717	4629	4540	384452	302796	2908	3020	3132	3244	3356	3468	3580	3692	3804	49																		
50	3108	3018	2928	2839	2749	2658	2568	2478	2388	392298	308976	9090	9204	9319	9433	9547	9661	9775	9890	0004	50																		
51	0970	0879	0787	0695	0603	0512	0420	0328	0236	400144	315155	5272	5388	5505	5621	5738	5854	5971	6087	6204	51																		
52	8833	8739	8646	8552	8458	8365	8271	8177	8084	407990	321335	1453	1572	1691	1810	1929	2048	2166	2285	2404	52																		
53	6695	6599	6504	6409	6313	6218	6123	6027	5931	415836	327514	7635	7756	7878	7999	8120	8241	8362	8483	8604	53																		
54	4557	4460	4363	4266	4168	4071	3974	3877	3779	423682	333694	3817	3941	4064	4187	4311	4434	4557	4681	4804	54																		
55	2419	2320	2221	2122	2023	1924	1825	1726	1627	431528	339873	9999	1125	0250	0376	0502	0627	0753	0878	1004	55																		
56	0281	0181	0080	9979	9878	9777	9677	9576	9475	439374	346053	6181	6309	6437	6565	6693	6821	6948	7076	7204	56																		
57	8143	8041	7938	7836	7733	7631	7528	7425	7323	447220	352232	2362	2493	2623	2753	2884	3014	3144	3274	3404	57																		
58	6006	5901	5797	5693	5588	5484	5379	5275	5170	455066	358412	8544	8677	8809	8942	9074	9207	9339	9472	9604	58																		
59	3868	3762	3656	3549	3443	3337	3231	3124	3018	462912	364591	4726	4861	4996	5131	5265	5400	5535	5670	5804	59																		
60	1730	1622	1514	1406	1298	1190	1082																																

TRAVERSE TABLES.

Table with columns for angles (38°, 51°) and trigonometric functions (COSINE, SINE). It contains numerical data for various degrees and minutes, including values for cosine and sine at 38 and 51 degrees.

TRAVERSE TABLES.

Table of Traverse Tables showing Cosine and Sine values for angles from 38 degrees to 51 degrees. The table is organized into four quadrants, with angles increasing from 38 to 51 degrees and minutes. Columns are labeled 'COSINE.' and 'SINE.' and include values for each minute of the degree. The table is bordered by '38°' at the top and '51°' at the bottom.



TRAVERSE TABLES.

Table of Traverse Tables showing Cosine and Sine values for angles from 38 degrees to 51 degrees. The table is organized into two main sections: Cosine (left) and Sine (right), with rows representing minutes of the angle and columns representing seconds.

TRAVERSE TABLES.

Table of Traverse Tables showing Cosine and Sine values for angles from 39 degrees to 50 degrees. The table is organized into two main sections: Cosine (left) and Sine (right). Each section has a main column for the angle (39 to 50) and sub-columns for minutes (0 to 60). The values are listed in rows corresponding to each minute increment.





TRAVERSE TABLES.

Table with columns for angles (39°, 50°), COSINE, and SINE. It contains a grid of numerical values for various angles and minutes.

TRAVERSE TABLES.

Table with columns for COSINE and SINE, and rows for angles from 39 to 50 degrees. Includes sub-columns for minutes and seconds.

## TRAVERSE TABLES.

39°	COSINE.										SINE.										39°
	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	
1	7698	7696	7694	7692	7690	7688	7687	7685	7683	7681	6383	6385	6388	6390	6392	6394	6397	6399	6401	6403	1
2	5395	5392	5388	5384	5381	5377	5373	5369	5366	5362	12766	2771	2775	2780	2784	2789	2793	2798	2802	2807	2
3	3093	3088	3082	3076	3071	3065	3060	3054	3049	3043	19150	9156	9163	9170	9176	9183	9190	9197	9203	9210	3
4	0791	0783	0776	0769	0761	0754	0746	0739	0731	0724	25533	5542	5551	5560	5569	5578	5587	5595	5604	5613	4
5	8489	8479	8470	8461	8451	8442	8433	8423	8414	8405	31916	1927	1938	1950	1961	1972	1983	1994	2005	2017	5
6	6186	6175	6164	6153	6142	6131	6119	6108	6097	6086	38299	8313	8326	8339	8353	8366	8380	8393	8407	8420	6
7	3884	3871	3858	3845	3832	3819	3806	3793	3780	3767	44682	4698	4714	4729	4745	4761	4776	4792	4808	4823	7
8	1582	1567	1552	1537	1522	1507	1492	1478	1463	1448	51066	1084	1101	1119	1137	1155	1173	1191	1209	1227	8
9	9279	9263	9246	9229	9213	9196	9179	9162	9146	9129	57449	7469	7489	7509	7529	7550	7570	7590	7610	7630	9
10	6977	6959	6940	6921	6903	6884	6866	6847	6828	6810	63832	3854	3877	3899	3922	3944	3966	3989	4011	4033	10
11	4675	4654	4634	4614	4593	4573	4552	4532	4511	4491	70215	0240	0264	0289	0314	0338	0363	0387	0412	0437	11
12	2373	2350	2328	2306	2283	2261	2239	2216	2194	2172	76598	6625	6652	6679	6706	6733	6760	6786	6813	6840	12
13	0070	0046	0022	9998	9974	9949	9925	9901	9877	9853	82982	3011	3040	3069	3098	3127	3156	3185	3214	3243	13
14	7768	7742	7716	7690	7664	7638	7612	7586	7560	7534	89365	9396	9427	9459	9490	9521	9553	9584	9615	9647	14
15	5466	5438	5410	5382	5354	5326	5298	5270	5243	5215	95748	5782	5815	5849	5882	5916	5949	5983	6016	6050	15
16	3163	3134	3104	3074	3044	3015	2985	2955	2925	2895	102131	2167	2203	2239	2274	2310	2346	2382	2418	2453	16
17	0861	0830	0798	0766	0735	0703	0671	0640	0608	0577	108514	8552	8591	8629	8667	8705	8743	8781	8819	8857	17
18	8559	8525	8492	8458	8425	8392	8358	8325	8291	8258	114898	4938	4978	5018	5059	5099	5139	5180	5220	5260	18
19	6256	6221	6186	6151	6115	6080	6045	6009	5974	5938	121281	1323	1366	1408	1451	1493	1536	1578	1621	1663	19
20	3954	3917	3880	3843	3806	3768	3731	3694	3657	3619	127664	7709	7754	7798	7843	7888	7933	7977	8022	8067	20
21	1652	1613	1574	1535	1496	1457	1418	1379	1340	1300	134047	4094	4141	4188	4235	4282	4329	4376	4423	4470	21
22	9350	9309	9268	9227	9186	9145	9104	9063	9022	8981	140430	0480	0529	0578	0627	0677	0726	0775	0824	0873	22
23	7047	7005	6962	6919	6876	6834	6791	6748	6705	6662	146814	6865	6917	6968	7020	7071	7122	7174	7225	7277	23
24	4745	4700	4656	4611	4567	4522	4477	4433	4388	4343	153197	3251	3304	3358	3412	3465	3519	3573	3626	3680	24
25	2443	2396	2350	2303	2257	2210	2164	2117	2071	2024	159580	9636	9692	9748	9804	9860	9916	9972	10028	10083	25
26	0140	0092	0044	9996	9947	9899	9851	9802	9754	9705	165963	6021	6080	6138	6196	6254	6312	6370	6429	6487	26
27	7838	7788	7738	7688	7638	7587	7537	7487	7437	7386	172346	2407	2467	2528	2588	2649	2709	2769	2830	2890	27
28	5536	5484	5432	5380	5328	5276	5224	5172	5119	5067	178730	8792	8855	8918	8980	9043	9106	9169	9231	9293	28
29	3234	3180	3126	3072	3018	2964	2910	2856	2802	2748	185113	5178	5243	5308	5372	5437	5502	5567	5632	5697	29
30	0931	0876	0820	0764	0708	0653	0597	0541	0485	230429	191496	1563	1630	1697	1765	1832	1899	1966	2033	2100	30
31	8629	8571	8514	8456	8399	8341	8283	8226	8168	8110	197879	7949	8018	8087	8157	8226	8295	8365	8434	8503	31
32	6327	6267	6208	6148	6089	6029	5970	5910	5851	5791	204262	4334	4406	4477	4549	4620	4692	4764	4835	4907	32
33	4024	3963	3902	3841	3779	3718	3656	3595	3534	3472	210646	0720	0793	0867	0941	1015	1089	1162	1236	1310	33
34	1722	1659	1596	1533	1469	1406	1343	1280	1216	1153	217029	7105	7181	7257	7333	7409	7485	7561	7637	7713	34
35	9420	9355	9290	9225	9160	9095	9030	8964	8899	268834	223412	3490	3569	3647	3725	3804	3882	3960	4038	4117	35
36	7118	7051	6984	6917	6850	6783	6716	6649	6582	276515	229795	9876	9956	1037	1018	1098	1179	1259	1339	1419	36
37	4815	4747	4678	4609	4540	4471	4403	4334	4265	284196	236178	6261	6344	6427	6510	6592	6675	6758	6841	6923	37
38	2513	2442	2372	2301	2231	2160	2089	2018	1948	291877	242562	2647	2732	2817	2902	2987	3072	3157	3242	3327	38
39	0211	0138	0066	9993	9921	9848	9776	9703	9631	299558	248945	9032	9119	9207	9294	9381	9468	9556	9643	9730	39
40	7928	7834	7760	7685	7611	7537	7462	7388	7313	307239	255328	5418	5507	5597	5686	5776	5865	5954	6044	6133	40
41	5606	5530	5454	5378	5301	5225	5149	5073	4996	314920	261711	1803	1895	1987	2078	2170	2262	2353	2445	2537	41
42	3304	3226	3148	3070	2992	2914	2835	2757	2679	322601	268094	8188	8282	8376	8470	8564	8658	8752	8846	8940	42
43	1002	0922	0842	0762	0682	0602	0522	0442	0362	330282	274478	4574	4670	4766	4863	4959	5055	5151	5247	5343	43
44	8699	8618	8536	8454	8372	8290	8209	8127	8045	337963	280861	0959	1058	1156	1255	1353	1452	1550	1648	1747	44
45	6397	6313	6230	6146	6063	5979	5895	5811	5728	345644	287244	7345	7446	7546	7647	7748	7848	7949	8049	8150	45
46	4095	4009	3924	3838	3753	3667	3582	3496	3410	353325	293627	3730	3833	3936	4039	4142	4245	4348	4450	4553	46
47	1792	1705	1618	1530	1443	1356	1268	1181	1093	361006	300010	0116	0221	0326	0431	0536	0641	0747	0852	0957	47
48	9490	9401	9312	9223	9133	9044	8955	8865	8776	368687	306394	6501	6609	6716	6823	6931	7038	7145	7253	7360	48
49	7188	7097	7006	6915	6824	6732	6641	6550	6459	376668	312777	2887	2996	3106	3215	3325	3435	3544	3654	3763	49
50	4886	4793	4700	4607	4514	4421	4328	4235	4142	384049	319160	9272	9384	9496	9608	9720	9831	9943	10055	0167	50
51	2583	2489	2394	2299	2204	2109	2014	1920	1825	391730	325543	5657	5772	5886	6000	6114	6228	6342	6456	6570	51
52	0281	0184	0088	9991	9894	9798	9701	9604	9507	399411	331926	2043	2159	2276	2392	2508	2625	2741	2857	2973	52
53	7979	7880	7782	7683	7585	7486	7388	7289	7190	407092	338310	8428	8547	8666	8784	8903	9021	9140	9258	9377	53
54	5676	5576	5476	5375	5275	5175	5074	4974	4873	414773	344693	4814	4935	5055	5176	5297	5418	5539	5659	5780	54
55	3374	3272	3170	3068	2965	2863	2761	2658	2556	422545	351076	1199	1322	1445	1568	1691	1814	1937	2060	2183	55
56	1072	0968	0864	0760	0656	0551	0447	0343	0239	430134	357459	7585	7710	7835	7961	8086	8211	8336	8461	8587	56
57	8769	8664	8558	8452	8346	8240	8134	8028	7922	437815	363842	3970	4098	4225	4353	4480	4608	4735	4863	4990	57
58	6467	6359	6252	6144	6036	5928	5820	5712	5604	445496	370226	0356	0485	0615	0745	0875	1004	1134	1264	1393	58
59	4165	4055	3946	3836	3726	3617	3507	3397	3287	453177	376609	6741	6873	7005	7137	7269	7401	7533	7665	7797	59
60	1863	1751	1640	1528	1417	1305	1193	1082	0970	460858	382992	3126	3261	3395	3529	3663	3798	3932	4066	4	

TRAVERSE TABLES.

39°	COSINE.										SINE.										39°
	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	
1	7679	7677	7675	7674	7672	7670	7668	7666	7664	7662	6406	6408	6410	6412	6414	6417	6419	6421	6423	6426	1
2	5358	5354	5351	5347	5343	5340	5336	5332	5328	5325	1'2811	2816	2820	2825	2829	2833	2838	2842	2847	2851	2
3	3037	3032	3026	3021	3015	3009	3004	2998	2993	2'9287	1'9217	9223	9230	9237	9243	9250	9257	9264	9270	9277	3
4	0716	0709	0702	0694	0687	0679	0672	0664	0657	3'0649	2'5622	5631	5640	5649	5658	5667	5676	5685	5694	5703	4
5	8396	8386	8377	8368	8358	8349	8340	8330	8321	3'8312	3'2028	2039	2050	2061	2072	2084	2095	2106	2117	2128	5
6	6075	6063	6052	6041	6030	6019	6008	5996	5985	4'5974	3'8433	8447	8460	8474	8487	8500	8514	8527	8541	8554	6
7	3754	3741	3728	3715	3702	3688	3675	3662	3649	5'3636	4'4839	4855	4870	4886	4901	4917	4933	4948	4964	4980	7
8	1433	1418	1403	1388	1373	1358	1343	1328	1313	6'1299	5'1245	1262	1280	1298	1316	1334	1352	1370	1387	1405	8
9	9112	9095	9078	9062	9045	9028	9011	8994	8978	6'8961	5'7650	7670	7690	7710	7730	7751	7771	7791	7811	7831	9
10	6791	6772	6754	6735	6717	6698	6679	6661	6642	7'6623	6'4056	4078	4100	4123	4145	4167	4190	4212	4234	4256	10
11	4470	4450	4429	4409	4388	4368	4347	4327	4306	8'4285	7'0461	0486	0510	0535	0559	0584	0609	0633	0658	0682	11
12	2149	2127	2105	2082	2060	2037	2015	1993	1970	9'1948	7'6867	6894	6920	6947	6974	7001	7027	7054	7081	7108	12
13	9828	9804	9780	9756	9731	9707	9683	9659	9634	9'9610	8'3272	3301	3330	3359	3388	3417	3446	3475	3504	3533	13
14	7508	7481	7455	7429	7403	7377	7351	7325	7299	10'7272	8'9678	9709	9740	9772	9803	9834	9865	9897	9928	9959	14
15	5187	5159	5131	5103	5075	5047	5019	4991	4963	11'4935	9'6083	6117	6150	6184	6217	6251	6284	6318	6351	6385	15
16	2866	2836	2806	2776	2746	2717	2687	2657	2627	12'2597	10'2489	2525	2561	2596	2632	2668	2703	2739	2775	2810	16
17	0545	0513	0481	0450	0418	0386	0355	0323	0291	13'0259	10'8895	8933	8971	9008	9046	9084	9122	9160	9198	9236	17
18	8224	8190	8157	8123	8090	8056	8023	7989	7955	13'7922	11'5300	5340	5381	5421	5461	5501	5541	5581	5622	5662	18
19	5903	5868	5832	5797	5761	5726	5690	5655	5619	14'5584	12'1706	1748	1791	1833	1875	1918	1960	2003	2045	2087	19
20	3582	3545	3508	3470	3433	3396	3358	3321	3284	15'3246	12'8111	8156	8201	8245	8290	8335	8379	8424	8468	8513	20
21	1261	1222	1183	1144	1105	1065	1026	987	948	16'0909	13'4517	4564	4611	4658	4704	4751	4798	4845	4892	4939	21
22	8940	8899	8858	8817	8776	8735	8694	8653	8612	16'8571	14'0922	0972	1021	1070	1119	1168	1217	1266	1315	1364	22
23	6620	6577	6534	6491	6448	6405	6362	6319	6276	17'6233	14'7328	7379	7431	7482	7533	7585	7636	7687	7739	7790	23
24	4299	4254	4209	4164	4120	4075	4030	3985	3940	18'3896	15'3734	3787	3841	3894	3948	4001	4055	4109	4162	4216	24
25	1978	1931	1885	1838	1791	1745	1698	1651	1605	19'1558	16'0139	0195	0251	0307	0362	0418	0474	0530	0585	0641	25
26	9657	9608	9560	9511	9463	9414	9366	9317	9269	19'9220	16'6545	6603	6661	6719	6777	6835	6893	6951	7009	7067	26
27	7336	7286	7235	7185	7135	7084	7034	6983	6933	20'6882	17'2950	3011	3071	3131	3191	3252	3312	3372	3432	3492	27
28	5015	4963	4911	4858	4806	4754	4702	4649	4597	21'4545	17'9356	9418	9481	9543	9606	9668	9731	9793	9856	9918	28
29	2694	2640	2586	2532	2478	2424	2370	2315	2261	22'2207	18'5761	5826	5891	5956	6020	6085	6150	6214	6279	6344	29
30	0373	0317	0261	0206	0150	0094	0038	9982	9925	22'9869	19'2167	2234	2301	2368	2435	2502	2569	2636	2703	2769	30
31	8052	7995	7937	7879	7821	7763	7705	7648	7590	23'7532	19'8573	8642	8711	8780	8849	8919	8988	9057	9126	9195	31
32	5732	5672	5612	5553	5493	5433	5373	5314	5254	24'5194	20'4978	5050	5121	5192	5264	5335	5407	5478	5549	5621	32
33	3411	3349	3288	3226	3165	3103	3041	2980	2918	25'2856	21'1384	1457	1531	1605	1678	1752	1826	1899	1973	2046	33
34	1090	1026	0963	0900	0836	0773	0709	0646	0582	26'0519	21'7789	7865	7941	8017	8093	8169	8245	8320	8396	8472	34
35	8769	8704	8638	8573	8508	8442	8377	8312	8246	26'8181	22'4195	4273	4351	4429	4507	4585	4664	4742	4820	4898	35
36	6448	6381	6314	6247	6179	6112	6045	5978	5911	27'5843	23'0600	0681	0761	0842	0922	1002	1082	1163	1243	1323	36
37	4127	4058	3989	3920	3851	3782	3713	3644	3575	28'3506	23'7006	7089	7171	7254	7336	7419	7501	7584	7666	7749	37
38	1806	1735	1665	1594	1523	1452	1381	1310	1239	29'1168	24'3412	3496	3581	3666	3751	3836	3920	4005	4090	4175	38
39	9485	9413	9340	9267	9194	9122	9049	8976	8903	29'8830	24'9817	9904	9991	0078	0165	0252	0339	0426	0513	0600	39
40	7164	7090	7015	6941	6866	6791	6717	6642	6567	30'6493	25'6223	6312	6401	6491	6580	6669	6758	6848	6937	7026	40
41	4844	4767	4691	4614	4538	4461	4385	4308	4232	31'4155	26'2628	2720	2811	2903	2994	3086	3177	3269	3360	3452	41
42	2523	2444	2366	2288	2209	2131	2053	1974	1896	32'1817	26'9034	9128	9221	9315	9409	9503	9596	9690	9784	9877	42
43	0202	0122	0041	9961	9881	9801	9720	9640	9560	32'9480	27'5439	5535	5631	5727	5823	5919	6015	6111	6207	6303	43
44	7881	7799	7717	7635	7553	7471	7388	7306	7224	33'7142	28'1845	1943	2041	2140	2238	2336	2434	2532	2630	2728	44
45	5560	5476	5392	5308	5224	5140	5056	4972	4888	34'4804	28'8250	8351	8451	8552	8652	8753	8853	8954	9054	9154	45
46	3239	3153	3068	2982	2896	2810	2724	2638	2552	35'2466	29'4656	4759	4861	4964	5067	5169	5272	5375	5477	5580	46
47	0918	0831	0743	0655	0568	0480	0392	0304	0217	36'0129	30'1062	1167	1272	1376	1481	1586	1691	1796	1901	2005	47
48	8597	8508	8418	8329	8239	8150	8060	7970	7881	36'7791	30'7467	7574	7682	7789	7896	8003	8110	8217	8324	8431	48
49	6276	6185	6094	6002	5911	5819	5728	5636	5545	37'5453	31'3873	3982	4092	4201	4310	4420	4529	4638	4747	4857	49
50	3956	3862	3769	3676	3583	3489	3396	3303	3209	38'3116	32'0278	0390	0502	0613	0725	0836	0948	1059	1171	1282	50
51	1635	1540	1444	1349	1254	1159	1064	0969	0873	39'0778	32'6684	6798	6912	7025	7139	7253	7367	7481	7594	7708	51
52	9314	9217	9120	9023	8926	8829	8732	8635	8538	39'8440	33'3089	3206	3322	3438	3554	3670	3786	3902	4018	4134	52
53	6993	6894	6795	6696	6598	6499	6400	6301	6202	40'6103	33'9495	9613	9732	9850	9968	0087	0205	0323	0441	0559	53
54	4672	4571	4471	4370	4269	4168	4068	3967	3866	41'3765	34'5901	6021	6142	6262	6383	6503	6624	6744	6865	6985	54
55	2351	2249	2146	2043	1941	1838	1735	1633	1530	42'1427	35'2306	2429	2552	2675	2797	2920	3043	3165	3288	3411	55
56	0030	9926	9821	9717	9613	9508	9403	9299	9194	42'9090	35'8712	8837	8962	9087	9212	9337	9462	9587	9711	9836	56
57	7709	7603	7497	7391	7284	7178	7071	6965	6858	43'6752	36'5117	5245	5372	5499	5626	5753	5880	6008	6135	6262	57
58	5388	5280	5172	5064	4956	4848	4739	4631	4523	44'4414	37'1523	1652	1782	1911	2041	2170	2300	2429	2558	2688	58
59	3067	2958	2848	2738	2627	2517	2407	2297	2187	45'2077	37'7928	8060	8192	8324	8455	8587	8719	8850	8982	9113	59
60	0747	0635	0523	0411	0299																

TRAVERSE TABLES.

40° COSINE.										SINE. 40°											
	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	
1	7660	7659	7657	7655	7653	7651	7649	7647	7645	7644	*6428	6430	6432	6435	6437	6439	6441	6443	6446	6448	1
2	5321	5317	5313	5310	5306	5302	5298	5295	5291	1'5287	1'2856	2860	2865	2869	2874	2878	2882	2887	2891	2896	2
3	2981	2976	2970	2964	2959	2953	2948	2942	2936	2'2931	1'9284	9290	9297	9304	9310	9317	9324	9330	9337	9344	3
4	0642	0634	0627	0619	0612	0604	0597	0589	0582	3'0574	2'5712	5720	5729	5738	5747	5756	5765	5774	5783	5792	4
5	8302	8293	8284	8274	8265	8255	8246	8237	8227	3'8218	3'2139	2151	2162	2173	2184	2195	2206	2217	2228	2240	5
6	5963	5951	5940	5929	5918	5907	5895	5884	5873	4'5862	3'8567	8581	8594	8607	8621	8634	8647	8661	8674	8687	6
7	3623	3610	3597	3584	3571	3558	3544	3531	3518	5'3505	4'4995	5011	5026	5042	5057	5073	5089	5104	5120	5135	7
8	1284	1269	1254	1239	1224	1209	1194	1179	1164	6'1149	5'1423	1441	1459	1476	1494	1512	1530	1548	1565	1583	8
9	8944	8927	8910	8893	8877	8860	8843	8826	8809	6'8792	5'7851	7871	7891	7911	7931	7951	7971	7991	8011	8031	9
10	6604	6586	6567	6548	6530	6511	6492	6473	6455	7'6436	6'4627	4301	4323	4346	4368	4390	4412	4435	4457	4479	10
11	4265	4244	4224	4203	4183	4162	4141	4121	4100	8'4079	7'0707	0731	0756	0780	0805	0829	0854	0878	0903	0927	11
12	1925	1903	1880	1858	1836	1813	1791	1768	1746	9'1723	7'7135	7161	7188	7215	7241	7268	7295	7322	7348	7375	12
13	9586	9561	9537	9513	9488	9464	9440	9415	9391	9'9367	8'3562	3591	3620	3649	3678	3707	3736	3765	3794	3823	13
14	7246	7220	7194	7168	7141	7115	7089	7063	7037	10'7010	8'9990	021	0053	0084	0115	0146	0177	0208	0240	0271	14
15	4907	4879	4851	4822	4794	4766	4738	4710	4682	11'4654	9'6418	6452	6485	6518	6552	6585	6619	6652	6685	6719	15
16	2567	2537	2507	2477	2447	2417	2387	2357	2327	12'2297	10'2846	2882	2917	2953	2989	3024	3060	3095	3131	3167	16
17	0228	0196	0164	0132	0100	0068	0037	0005	9973	12'9941	10'9274	9312	9350	9388	9425	9463	9501	9539	9577	9614	17
18	7888	7854	7821	7787	7753	7720	7686	7652	7618	13'7585	11'5702	5742	5782	5822	5862	5902	5942	5982	6022	6062	18
19	5548	5513	5477	5442	5406	5371	5335	5299	5264	14'5228	12'2130	2172	2214	2257	2299	2341	2383	2426	2468	2510	19
20	3209	3171	3134	3097	3059	3022	2984	2947	2909	15'2872	12'8558	8602	8647	8691	8736	8780	8825	8869	8914	8958	20
21	0869	0830	0791	0751	0712	0673	0633	0594	0555	16'0515	13'4985	5032	5079	5126	5172	5219	5266	5313	5359	5406	21
22	8530	8489	8447	8406	8365	8324	8283	8241	8200	16'8159	14'1413	1462	1511	1560	1609	1658	1707	1756	1805	1854	22
23	6190	6147	6104	6061	6018	5975	5932	5889	5846	17'5803	14'7841	7892	7944	7995	8046	8097	8148	8200	8251	8302	23
24	3851	3806	3761	3716	3671	3626	3581	3536	3491	18'3446	15'4269	4322	4376	4429	4483	4536	4590	4643	4696	4750	24
25	1511	1464	1418	1371	1324	1277	1230	1184	1137	19'1090	16'0697	0753	0808	0864	0920	0975	1031	1087	1142	1198	25
26	9172	9123	9074	9026	8977	8928	8880	8831	8782	19'8733	16'7125	7183	7241	7299	7356	7414	7472	7530	7588	7646	26
27	6832	6781	6731	6680	6630	6579	6529	6478	6428	20'6377	17'3553	3613	3673	3733	3793	3853	3913	3973	4033	4094	27
28	4492	4440	4388	4335	4283	4230	4178	4126	4073	21'4021	17'9981	0403	0105	0168	0230	0292	0355	0417	0479	0541	28
29	2153	2099	2044	1990	1936	1882	1827	1773	1718	22'1664	18'6408	6473	6538	6602	6667	6731	6796	6860	6925	6989	29
30	9813	9757	9701	9645	9589	9533	9476	9420	9364	22'9308	19'2836	2903	2970	3037	3104	3170	3237	3304	3371	3437	30
31	7474	7416	7358	7300	7242	7184	7126	7068	7009	23'6951	19'9264	9333	9402	9471	9540	9609	9678	9747	9816	9885	31
32	5134	5074	5015	4955	4895	4835	4775	4715	4655	24'4595	20'5692	5763	5835	5906	5977	6048	6120	6191	6262	6333	32
33	2795	2733	2671	2609	2548	2486	2424	2362	2300	25'2238	21'2120	2193	2267	2340	2414	2487	2561	2634	2708	2781	33
34	0455	0392	0328	0264	0201	0137	0073	0010	9946	25'9882	21'8548	8624	8699	8775	8851	8926	9002	9078	9153	9229	34
35	8116	8050	7985	7919	7854	7788	7722	7657	7591	26'7526	22'4976	5054	5132	5210	5287	5365	5443	5521	5599	5677	35
36	5776	5709	5641	5574	5507	5439	5372	5304	5237	27'5169	23'1404	1484	1564	1644	1724	1804	1884	1965	2045	2125	36
37	3436	3367	3298	3229	3160	3090	3021	2952	2882	28'2813	23'7831	7914	7996	8079	8161	8243	8326	8408	8490	8573	37
38	1097	1026	0955	0884	0812	0741	0670	0599	0528	29'0456	24'4259	4344	4429	4513	4598	4682	4767	4852	4936	5021	38
39	8757	8684	8611	8538	8465	8392	8319	8246	8173	29'8100	25'0687	0774	0861	0948	1035	1121	1208	1295	1382	1468	39
40	6418	6343	6268	6193	6118	6043	5969	5894	5819	30'5744	25'7115	7204	7293	7382	7471	7560	7649	7738	7827	7916	40
41	4078	4002	3925	3848	3771	3695	3618	3541	3464	31'3387	26'3543	3634	3726	3817	3908	3999	4091	4182	4273	4364	41
42	1739	1660	1582	1503	1424	1346	1267	1188	1110	32'1031	26'9971	0604	0158	0251	0345	0438	0532	0625	0719	0812	42
43	9399	9319	9238	9158	9077	8997	8916	8835	8755	32'8676	27'6399	6494	6590	6686	6782	6877	6973	7069	7164	7260	43
44	7060	6977	6895	6813	6730	6648	6565	6483	6400	33'6318	28'2827	2925	3023	3121	3219	3316	3414	3512	3610	3708	44
45	4720	4636	4552	4467	4383	4299	4215	4130	4046	34'3962	28'9254	9355	9455	9555	9655	9755	9856	9956	0056	0156	45
46	2380	2294	2208	2122	2036	1950	1864	1778	1691	35'1605	29'5682	5785	5887	5990	6092	6195	6297	6399	6502	6604	46
47	0041	9953	9865	9777	9689	9601	9513	9425	9337	35'9249	30'2110	2215	2320	2424	2529	2634	2738	2843	2947	3052	47
48	7701	7612	7522	7432	7342	7252	7162	7072	6982	36'6892	30'8538	8645	8752	8859	8966	9073	9179	9286	9393	9500	48
49	5362	5270	5178	5087	4995	4903	4811	4720	4628	37'4536	31'4966	5075	5184	5293	5402	5512	5621	5730	5839	5948	49
50	3022	2929	2835	2742	2648	2554	2461	2367	2273	38'2180	32'1394	1505	1617	1728	1839	1951	2062	2173	2284	2395	50
51	0683	0587	0492	0396	0301	0205	0110	0014	9919	38'9823	32'7822	7935	8049	8163	8276	8390	8503	8617	8730	8843	51
52	8343	8246	8149	8051	7954	7857	7759	7662	7564	39'7467	33'4250	4365	4481	4597	4713	4829	4944	5060	5176	5291	52
53	6004	5904	5805	5706	5607	5508	5408	5309	5210	40'5110	34'0677	0796	0914	1032	1150	1268	1386	1503	1621	1739	53
54	3664	3563	3462	3361	3260	3159	3058	2956	2855	41'2754	34'7105	7226	7346	7466	7586	7707	7827	7947	8067	8187	54
55	1324	1222	1119	1016	0913	0810	0707	0604	0501	42'0397	35'3533	3656	3778	3901	4023	4146	4268	4390	4513	4635	55
56	8985	8880	8775	8671	8566	8461	8356	8251	8146	42'8041	35'9961	0086	0211	0335	0460	0585	0709	0834	0958	1083	56
57	6645	6539	6432	6325	6219	6112	6005	5898	5792	43'5685	36'6389	6516	6643	6770	6897	7024	7150	7277	7404	7531	57
58	4306	4197	4089	3980	3872	3763	3654	3546	3437	44'3328	37'2817	2946	3075	3204	3334	3463	3592	3721	3850	3979	58
59	1966	1856	1746	1635	1525	1414	1304	1193	1082	45'0972	37'9245	9376	9508	9639	9770	9902	0033	0164	0295	0427	59
60	9627	9514	9402	9290	9178	9065															

TRAVERSE TABLES.

Table with columns for angles (40 to 49 degrees) and rows for cosine and sine values. The table is divided into two main sections: COSINE (left) and SINE (right), with corresponding angle labels at the top and bottom. Each section contains a grid of numerical values for every minute of the degree.

TRAVERSE TABLES.

Table with columns for degrees (40° and 49°), minutes (20' to 29'), and functions (COSINE and SINE).

TRAVERSE TABLES.

40° COSINE. SINE. 40°. Table with columns for degrees and minutes (30', 31', 32', 33', 34', 35', 36', 37', 38', 39') and rows for angles from 1 to 100 degrees. Includes SINE and COSINE values for each minute.



TRAVERSE TABLES.

40°										COSINE.										SINE.										40°																			
										40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'										
1	7585	7583	7581	7579	7578	7576	7574	7572	7570	7568	6517	6519	6521	6523	6525	6528	6530	6532	6534	6536	1																												
2	5170	5166	5163	5159	5155	5151	5148	5144	5140	5136	1'3033	3038	3042	3046	3051	3055	3060	3064	3068	3073	2																												
3	2755	2750	2744	2738	2733	2727	2721	2716	2710	2'2704	1'9550	9556	9563	9570	9576	9583	9589	9596	9603	9609	3																												
4	0341	0333	0325	0318	0310	0303	0295	0287	0280	3'0272	2'6066	6075	6084	6093	6102	6110	6119	6128	6137	6146	4																												
5	7926	7916	7907	7897	7888	7878	7869	7859	7850	3'7840	3'2583	2594	2605	2616	2627	2638	2649	2660	2671	2682	5																												
6	5511	5499	5488	5477	5465	5454	5443	5431	5420	4'5408	3'9099	9113	9126	9139	9152	9166	9179	9192	9205	9218	6																												
7	3096	3083	3069	3056	3043	3030	3016	3003	2990	5'2976	4'5616	5631	5647	5662	5678	5693	5709	5724	5739	5755	7																												
8	0681	0666	0651	0636	0620	0605	0590	0575	0560	6'0544	5'2133	2150	2168	2186	2203	2221	2238	2256	2274	2291	8																												
9	8266	8249	8232	8215	8198	8181	8164	8147	8130	6'8112	5'8649	8669	8689	8709	8729	8748	8768	8788	8808	8828	9																												
10	5851	5832	5813	5794	5775	5757	5738	5719	5700	7'5681	6'5166	5188	5210	5232	5254	5276	5298	5320	5342	5364	10																												
11	3436	3416	3395	3374	3353	3332	3311	3290	3269	8'3249	7'1682	1707	1731	1755	1779	1804	1828	1852	1876	1900	11																												
12	1022	0999	0976	0953	0931	0908	0885	0862	0839	9'0817	7'8199	8225	8252	8278	8305	8331	8358	8384	8410	8437	12																												
13	8607	8582	8557	8533	8508	8483	8459	8434	8409	9'8385	8'4715	4744	4773	4801	4830	4859	4889	4916	4945	4973	13																												
14	6192	6165	6139	6112	6086	6059	6033	6006	5979	10'5953	9'1232	1263	1294	1325	1356	1386	1417	1448	1479	1510	14																												
15	3777	3749	3720	3692	3663	3635	3606	3578	3549	11'3521	9'7749	7782	7815	7848	7881	7914	7947	7980	8013	8046	15																												
16	1362	1332	1301	1271	1241	1210	1180	1150	1119	12'1089	10'4265	4300	4336	4371	4406	4442	4477	4512	4547	4583	16																												
17	8947	8915	8883	8851	8818	8786	8754	8721	8689	12'8657	11'0782	0819	0857	0894	0932	0969	1007	1044	1082	1119	17																												
18	6532	6498	6464	6430	6396	6362	6328	6293	6259	13'6225	11'7298	7338	7378	7417	7457	7497	7536	7576	7616	7655	18																												
19	4118	4082	4046	4009	3973	3937	3901	3865	3829	14'3793	12'3815	3857	3899	3941	3982	4024	4066	4108	4150	4192	19																												
20	1703	1665	1627	1589	1551	1513	1475	1437	1399	15'1361	13'0331	0376	0420	0464	0508	0552	0596	0640	0684	0728	20																												
21	9288	9248	9208	9168	9129	9089	9049	9009	8969	15'8929	13'6848	6894	6941	6987	7033	7080	7126	7172	7218	7265	21																												
22	6873	6831	6790	6748	6706	6664	6623	6581	6539	16'6497	14'3365	3413	3462	3510	3559	3607	3656	3704	3753	3801	22																												
23	4458	4415	4371	4327	4284	4240	4196	4153	4109	17'4065	14'9881	9932	9983	10033	10084	10135	10185	10236	10287	10337	23																												
24	2043	1998	1952	1907	1861	1816	1770	1724	1679	18'1633	15'6398	6451	6504	6557	6609	6662	6715	6768	6821	6874	24																												
25	9628	9581	9534	9486	9439	9391	9344	9296	9249	19'9201	16'2914	2969	3025	3080	3135	3190	3245	3300	3355	3410	25																												
26	7214	7164	7115	7066	7016	6967	6918	6868	6819	19'6769	16'9431	9488	9546	9603	9660	9718	9775	9832	9889	9947	26																												
27	4799	4747	4696	4645	4594	4543	4491	4440	4389	20'4337	17'5947	6007	6067	6126	6186	6245	6305	6364	6424	6483	27																												
28	2384	2331	2278	2224	2171	2118	2065	2012	1959	21'1905	18'2464	2526	2588	2649	2711	2773	2835	2896	2958	3019	28																												
29	9969	9914	9859	9804	9749	9694	9639	9584	9529	21'9473	18'8981	9045	9109	9172	9236	9300	9364	9428	9492	9556	29																												
30	7554	7497	7440	7383	7326	7270	7213	7156	7099	22'7042	19'5497	5563	5630	5696	5762	5828	5894	5960	6026	6092	30																												
31	5139	5080	5022	4963	4904	4845	4786	4727	4668	23'4610	20'2014	2082	2151	2219	2287	2356	2424	2492	2560	2629	31																												
32	2724	2664	2603	2542	2482	2421	2360	2299	2238	24'2178	20'8530	8601	8671	8742	8813	8883	8954	9024	9095	9165	32																												
33	0309	0247	0184	0122	0059	9996	9934	9871	9808	24'9746	21'5047	5120	5192	5265	5338	5411	5483	5556	5629	5701	33																												
34	7895	7830	7766	7701	7637	7572	7508	7443	7378	25'7314	22'1563	1638	1713	1788	1863	1938	2013	2088	2163	2238	34																												
35	5480	5413	5347	5281	5214	5148	5081	5015	4948	26'4882	22'8080	8157	8234	8312	8389	8466	8543	8620	8697	8774	35																												
36	3065	2997	2928	2860	2792	2723	2655	2587	2518	27'2450	23'4597	4676	4755	4835	4914	4994	5073	5152	5231	5311	36																												
37	0650	0580	0510	0440	0369	0299	0229	0158	0088	28'0018	24'1113	1195	1276	1358	1440	1521	1603	1684	1766	1847	37																												
38	8235	8163	8091	8019	7947	7875	7803	7730	7658	28'7586	24'7630	7714	7797	7881	7965	8049	8132	8216	8300	8384	38																												
39	5820	5746	5672	5598	5524	5450	5376	5302	5228	29'5154	25'4146	4232	4318	4404	4490	4576	4662	4748	4834	4920	39																												
40	3405	3330	3254	3178	3102	3026	2950	2874	2798	30'2722	26'0663	0751	0839	0928	1016	1104	1192	1280	1368	1456	40																												
41	0991	0913	0835	0757	0679	0602	0524	0446	0368	31'0290	26'7179	7270	7360	7451	7541	7632	7722	7812	7902	7993	41																												
42	8576	8496	8416	8337	8257	8177	8098	8018	7938	31'7858	27'3696	3789	3881	3974	4067	4159	4252	4344	4437	4529	42																												
43	6161	6079	5998	5916	5835	5753	5671	5590	5508	32'5426	28'0213	0307	0402	0497	0592	0687	0781	0874	0967	1060	43																												
44	3746	3663	3579	3496	3412	3329	3245	3161	3078	33'2994	28'6729	6826	6923	7020	7117	7214	7311	7408	7505	7602	44																												
45	1331	1246	1160	1075	0990	0904	0819	0733	0648	34'0562	29'3246	3345	3444	3544	3643	3742	3841	3940	4039	4138	45																												
46	8916	8829	8742	8655	8567	8480	8393	8305	8218	34'8130	29'9762	9864	9965	10067	10182	10270	10371	10472	10573	10674	46																												
47	6501	6412	6323	6234	6145	6056	5966	5877	5788	35'5698	30'6279	6383	6486	6590	6694	6797	6901	7004	7108	7211	47																												
48	4087	3996	3904	3813	3722	3631	3540	3449	3358	36'3266	31'2795	2901	3007	3113	3219	3325	3430	3536	3642	3748	48																												
49	1672	1579	1486	1393	1300	1207	1114	1021	0928	37'0834	31'9312	9420	9528	9636	9744	9852	9960	10068	10176	10284	49																												
50	9257	9162	9067	8972	8877	8783	8688	8593	8498	37'8403	32'5829	5939	6049	6159	6270	6380	6490	6600	6710	6820	50																												
51	6842	6745	6648	6552	6455	6358	6261	6164	6068	38'5971	33'2345	2458	2570	2683	2795	2907	3020	3132	3245	3357	51																												
52	4427	4328	4230	4131	4032	3934	3835	3736	3637	39'3539	33'8862	8976	9091	9206	9320	9435	9550	9664	9779	9893	52																												
53	2012	1912	1811	1711	1610	1509	1409	1308	1207	40'1107	34'5378	5495	5612	5729	5846	5963	6079	6196	6313	6430	53																												
54	9597	9495	9393	9290	9188	9085	8983	8880	8777	40'8675	35'1895	2014	2133	2252	2371	2490	2609	2728	2847	2966	54																												
55	7182	7078	6974	6870	6765	6661	6556	6452	6347	41'6243	35'8411	8533	8654	8775	8897	9018	9139	9260	9381	9502	55																												
56	4768	4661	4555	4449	4343	4236	4130	4024	3917	42'3811	36'4928	5052	5175	5299	5422	5545	5669	5792	5916	6039	56																												
57	2353	2245	2137	2028	1920	1812	1704	1596	1487	43'1379	37'1445	1570	1696	1822	1947	2073	2199	2324	2450	2575	57																												
58	9938	9828	9718	9608	9498	9388	9278	9167	9057	43'8947	37'7961	8089	8217	8345	8473	8601	8729	8856	8984	9112	58																												
59	7523	7411	7299	7187	7075	6963	6851	6739	6627	44'6515	38'4478	4608	4738	4868	4998</																																		

TRAVERSE TABLES.

40°	COSINE.									SINE.									40°		
	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	50'	51'	52'	53'	54'	55'	56'	57'		58'	59'
1	7566	7564	7562	7560	7559	7557	7555	7553	7551	7549	6539	6541	6543	6545	6547	6550	6552	6554	6556	6558	1
2	5132	5128	5125	5121	5117	5113	5109	5106	5102	5098	1'3077	3082	3086	3090	3095	3099	3104	3108	3112	3117	2
3	2698	2693	2687	2681	2676	2670	2664	2658	2653	2'2647	1'9616	9622	9629	9636	9642	9649	9655	9662	9669	9675	3
4	0265	0257	0249	0242	0234	0227	0219	0211	0204	3'0196	2'6154	6163	6172	6181	6190	6198	6207	6216	6225	6234	4
5	7831	7821	7812	7802	7793	7783	7774	7764	7755	3'7745	3'2693	2704	2715	2726	2737	2748	2759	2770	2781	2792	5
6	5397	5385	5374	5363	5351	5340	5328	5317	5305	4'5294	3'9232	9245	9258	9271	9284	9298	9311	9324	9337	9350	6
7	2963	2950	2936	2923	2910	2896	2883	2870	2856	5'2843	4'5770	5786	5801	5816	5832	5847	5863	5878	5893	5909	7
8	0529	0514	0499	0484	0468	0453	0438	0423	0407	6'0392	5'2309	2326	2344	2362	2379	2397	2414	2432	2450	2467	8
9	8095	8078	8061	8044	8027	8010	7993	7975	7958	6'7941	5'8847	8867	8887	8907	8927	8946	8966	8986	9006	9026	9
10	5661	5642	5623	5604	5585	5566	5547	5528	5509	7'5490	6'5386	5408	5430	5452	5474	5496	5518	5540	5562	5584	10
11	3228	3207	3186	3165	3144	3123	3102	3081	3060	8'3039	7'1925	1949	1973	1997	2021	2046	2070	2094	2118	2142	11
12	0794	0771	0748	0725	0702	0680	0657	0634	0611	9'0588	7'8463	8490	8516	8543	8569	8595	8622	8648	8674	8701	12
13	8360	8335	8310	8286	8261	8236	8211	8187	8162	9'8137	8'5002	5031	5059	5088	5116	5145	5173	5202	5231	5259	13
14	5926	5899	5873	5846	5819	5793	5766	5739	5713	10'5686	9'5541	1571	1602	1633	1664	1694	1725	1756	1787	1818	14
15	3492	3464	3435	3407	3378	3349	3321	3292	3264	11'3235	9'8079	8112	8145	8178	8211	8244	8277	8310	8343	8376	15
16	1058	1028	0997	0967	0937	0906	0876	0845	0815	12'0784	10'4618	4653	4688	4723	4759	4794	4829	4864	4899	4934	16
17	8529	8592	8560	8527	8495	8463	8430	8398	8365	12'8333	11'1156	1194	1231	1269	1306	1343	1381	1418	1455	1493	17
18	6191	6156	6122	6088	6054	6019	5985	5951	5916	13'5882	11'7695	7735	7774	7814	7853	7893	7932	7972	8012	8051	18
19	3757	3721	3685	3648	3612	3576	3540	3504	3467	14'3431	12'4234	4275	4317	4359	4401	4443	4484	4526	4568	4610	19
20	1323	1285	1247	1209	1171	1133	1095	1056	1018	15'0980	13'0772	0816	0860	0904	0948	0992	1036	1080	1124	1168	20
21	8889	8849	8809	8769	8729	8689	8649	8609	8569	15'8529	13'7311	7357	7403	7449	7496	7542	7588	7634	7680	7726	21
22	6455	6413	6372	6330	6288	6246	6204	6162	6120	16'6078	14'3849	3898	3946	3995	4043	4091	4140	4188	4236	4285	22
23	4021	3978	3934	3890	3846	3802	3759	3715	3671	17'3627	15'0388	0439	0489	0540	0590	0641	0691	0742	0793	0843	23
24	1588	1542	1496	1451	1405	1359	1313	1268	1222	18'1176	15'6927	6979	7032	7085	7138	7191	7243	7296	7349	7401	24
25	9154	9106	9059	9011	8963	8916	8868	8820	8773	18'8725	16'3465	3520	3575	3630	3685	3740	3795	3850	3905	3960	25
26	6720	6670	6621	6571	6522	6472	6423	6373	6324	19'6274	17'0004	0061	0118	0175	0233	0290	0347	0404	0461	0518	26
27	4286	4235	4183	4132	4080	4029	3978	3926	3875	20'3823	17'6542	6602	6661	6721	6780	6839	6899	6958	7017	7077	27
28	1852	1799	1746	1692	1639	1586	1532	1479	1426	21'1372	18'3081	3143	3204	3266	3327	3389	3451	3512	3574	3635	28
29	9418	9363	9308	9253	9198	9142	9087	9032	8976	21'8921	18'9620	9683	9747	9811	9875	9939	10002	10066	10130	10193	29
30	6984	6927	6870	6813	6756	6699	6642	6585	6527	22'6470	19'6158	6224	6290	6356	6422	6488	6554	6620	6686	6752	30
31	4551	4492	4433	4374	4315	4256	4196	4137	4078	23'4019	20'2697	2765	2833	2901	2970	3038	3106	3174	3242	3310	31
32	2117	2056	1995	1934	1873	1812	1751	1690	1629	24'1568	20'9235	9306	9376	9447	9517	9587	9658	9728	9798	9869	32
33	9683	9620	9557	9494	9432	9369	9306	9243	9180	24'9117	21'5774	5847	5919	5992	6064	6137	6210	6282	6355	6427	33
34	7249	7184	7120	7055	6990	6925	6861	6796	6731	25'6666	22'2313	2388	2462	2537	2612	2687	2761	2836	2911	2985	34
35	4815	4749	4682	4615	4549	4482	4415	4349	4282	26'4215	22'8851	8928	9005	9082	9159	9236	9313	9390	9467	9544	35
36	2381	2313	2244	2176	2107	2039	1970	1901	1833	27'1764	23'5390	5469	5548	5628	5707	5786	5865	5944	6023	6102	36
37	9947	9877	9807	9736	9666	9595	9525	9454	9384	27'9313	24'1929	2010	2091	2173	2254	2335	2417	2498	2579	2661	37
38	7514	7441	7369	7297	7224	7152	7080	7007	6935	28'6862	24'8467	8551	8634	8718	8802	8885	8969	9052	9136	9219	38
39	5080	5006	4931	4857	4783	4709	4634	4560	4486	29'4411	25'5006	5092	5177	5263	5349	5435	5520	5606	5692	5777	39
40	2646	2570	2494	2418	2341	2265	2189	2113	2036	30'1960	26'1544	1632	1720	1808	1896	1984	2072	2160	2248	2336	40
41	0212	0134	0056	9978	9900	9822	9744	9666	9587	30'9509	26'8083	8173	8263	8354	8444	8534	8624	8714	8804	8894	41
42	7778	7698	7618	7538	7458	7378	7298	7218	7138	31'7058	27'4622	4714	4806	4899	4991	5083	5176	5268	5360	5453	42
43	5344	5263	5181	5099	5017	4935	4853	4771	4689	32'4607	28'1160	1255	1349	1444	1539	1633	1728	1822	1917	2011	43
44	2911	2827	2743	2659	2576	2492	2408	2324	2240	33'2156	28'7699	7796	7892	7989	8086	8183	8279	8376	8473	8569	44
45	0477	0391	0305	0220	0134	0048	9963	9877	9791	33'9705	29'4237	4336	4435	4534	4633	4732	4831	4930	5029	5128	45
46	8043	7955	7868	7780	7693	7605	7517	7430	7342	34'7254	30'0776	0877	0978	1080	1181	1282	1383	1484	1585	1686	46
47	5609	5520	5430	5341	5251	5162	5072	4982	4893	35'4803	30'7315	7418	7521	7625	7728	7832	7935	8038	8141	8245	47
48	3175	3084	2992	2901	2810	2718	2627	2535	2444	36'2352	31'3853	3959	4064	4170	4276	4381	4487	4592	4698	4803	48
49	0741	0648	0555	0462	0368	0275	0181	0088	9995	36'9901	32'0392	0500	0607	0715	0823	0931	1038	1146	1254	1361	49
50	8307	8212	8117	8022	7927	7832	7736	7641	7546	37'7450	32'6930	7041	7151	7260	7370	7480	7590	7700	7810	7920	50
51	5874	5777	5679	5582	5485	5388	5291	5194	5096	38'4999	33'3469	3581	3694	3806	3918	4030	4142	4254	4366	4478	51
52	3440	3341	3242	3143	3044	2945	2846	2747	2647	39'2548	34'0008	0122	0237	0351	0465	0580	0694	0808	0922	1037	52
53	1006	0905	0804	0703	0602	0501	0400	0299	0198	40'0097	34'6546	6663	6780	6896	7013	7129	7246	7362	7478	7595	53
54	8572	8469	8367	8264	8161	8058	7955	7852	7749	40'7646	35'3085	3204	3323	3441	3560	3679	3797	3916	4035	4153	54
55	6138	6034	5929	5824	5719	5615	5510	5405	5300	41'5195	35'9623	9745	9866	9986	10107	10228	10349	10470	10591	10712	55
56	3704	3598	3491	3385	3278	3171	3065	2958	2851	42'2744	36'6162	6285	6409	6532	6655	6778	6901	7024	7147	7270	56
57	1270	1162	1054	0945	0836	0728	0619	0511	0402	43'0293	37'2701	2826	2952	3077	3202	3328	3453	3578	3703	3829	57
58	8837	8726	8616	8505	8395	8285	8174	8063	7953	43'7842	37'9239	9367	9495	9622	9750	9877	10005	10132	10259	10387	58
59	6403	6291	6178	6066	5954	5841	5729	5616	5504	44'5391	38'5778	5908	6038	6167	6297	6427	6556	6686	6816	6945	59
60	3969	3855	3741	3626	3512	3398	3283	3169	3055	45'2940	39'2317	2449									

# TRAVERSE TABLES.

41°	COSINE.										SINE.										41°
	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	
1	7547	7545	7543	7541	7539	7538	7536	7534	7532	7530	6561	6563	6565	6567	6569	6572	6574	6576	6578	6580	1
2	5094	5090	5087	5083	5079	5075	5071	5067	5064	5060	1'3121	3126	3130	3134	3139	3143	3148	3152	3156	3161	2
3	2641	2636	2630	2624	2618	2613	2607	2601	2595	2590	1'9682	9688	9695	9702	9708	9715	9721	9728	9734	9741	3
4	0188	0181	0173	0165	0158	0150	0143	0135	0127	0120	2'6242	6251	6260	6269	6277	6286	6295	6304	6313	6321	4
5	7735	7726	7716	7707	7697	7688	7678	7669	7659	7649	3'2803	2814	2825	2836	2847	2858	2869	2880	2891	2902	5
6	5283	5271	5260	5248	5237	5225	5214	5202	5191	5179	3'9364	9377	9390	9403	9416	9429	9443	9456	9469	9482	6
7	2830	2816	2803	2790	2776	2763	2749	2736	2723	2709	4'5924	5939	5955	5970	5986	6001	6016	6032	6047	6062	7
8	0377	0361	0346	0331	0316	0300	0285	0270	0254	0239	5'2485	2502	2520	2537	2555	2572	2590	2608	2625	2643	8
9	7924	7907	7890	7872	7855	7838	7821	7803	7786	7769	5'9045	9065	9085	9105	9124	9144	9164	9183	9203	9223	9
10	5471	5452	5433	5414	5395	5375	5356	5337	5318	5299	6'5606	5628	5650	5672	5694	5716	5738	5759	5781	5803	10
11	3018	2997	2976	2955	2934	2913	2892	2871	2850	2829	7'2166	2191	2215	2239	2263	2287	2311	2335	2359	2384	11
12	0565	0542	0519	0496	0473	0451	0428	0405	0382	0359	7'8727	8753	8780	8806	8832	8859	8885	8911	8938	8964	12
13	8112	8087	8063	8038	8013	7988	7963	7938	7914	7890	8'5288	5316	5345	5373	5402	5430	5458	5487	5516	5544	13
14	5659	5633	5606	5579	5552	5526	5499	5472	5445	5419	9'1848	1879	1910	1940	1971	2002	2033	2063	2094	2125	14
15	3206	3178	3149	3121	3092	3063	3035	3006	2977	2948	9'8409	8442	8475	8508	8541	8573	8606	8639	8672	8705	15
16	0754	0723	0692	0662	0631	0601	0570	0540	0509	0478	10'4969	5005	5040	5075	5110	5145	5180	5215	5250	5285	16
17	8301	8268	8236	8203	8171	8138	8106	8073	8041	8009	11'1530	1567	1605	1642	1679	1717	1754	1791	1828	1866	17
18	5848	5813	5779	5745	5710	5676	5641	5607	5573	5538	11'8091	8130	8170	8209	8249	8288	8328	8367	8406	8446	18
19	3395	3359	3322	3286	3250	3213	3177	3141	3104	3068	12'4651	4693	4735	4776	4818	4860	4901	4943	4985	5026	19
20	0942	0904	0866	0827	0789	0751	0713	0674	0636	0598	13'1212	1256	1300	1343	1387	1431	1475	1519	1563	1607	20
21	8489	8449	8409	8369	8329	8288	8248	8208	8168	8128	13'7772	7818	7865	7911	7957	8003	8049	8095	8141	8187	21
22	6036	5994	5952	5910	5868	5826	5784	5742	5700	5658	14'4333	4381	4430	4478	4526	4574	4623	4671	4719	4767	22
23	3583	3539	3495	3451	3408	3364	3320	3276	3232	3188	15'0894	0944	0995	1045	1095	1146	1196	1247	1297	1347	23
24	1130	1084	1039	0993	0947	0901	0855	0809	0763	0717	15'7454	7507	7560	7612	7665	7717	7770	7823	7875	7928	24
25	8677	8630	8582	8534	8486	8439	8391	8343	8295	8247	16'4015	4070	4125	4179	4234	4289	4344	4399	4453	4508	25
26	6224	6175	6125	6076	6026	5976	5926	5877	5827	5777	17'0575	0632	0689	0747	0804	0861	0918	0975	1032	1088	26
27	3772	3720	3669	3617	3565	3514	3462	3410	3359	3307	17'7136	7195	7254	7314	7373	7432	7491	7550	7610	7669	27
28	1319	1265	1212	1158	1105	1051	0998	0944	0891	0837	18'3697	3758	3819	3881	3942	4004	4065	4126	4188	4249	28
29	8866	8810	8755	8700	8644	8589	8533	8478	8422	8367	19'0257	0321	0384	0448	0512	0575	0639	0702	0766	0829	29
30	6413	6356	6298	6241	6184	6126	6069	6012	5954	5897	19'6818	6884	6949	7015	7081	7147	7213	7278	7344	7410	30
31	3960	3901	3842	3782	3723	3664	3605	3545	3486	3427	20'3378	3446	3514	3582	3650	3718	3786	3854	3922	3990	31
32	1507	1446	1385	1324	1263	1201	1140	1079	1018	20'9957	9939	0009	0079	0150	0220	0290	0360	0430	0500	0570	32
33	9054	8991	8928	8865	8802	8739	8676	8613	8550	21'6487	6499	6572	6646	6717	6789	6861	6934	7006	7078	7151	33
34	6601	6536	6471	6407	6342	6277	6212	6147	6081	21'3061	3135	3209	3284	3358	3433	3508	3582	3657	3731	3806	34
35	4148	4082	4015	3948	3881	3814	3747	3680	3613	22'9621	9697	9774	9851	9928	0005	0081	0158	0235	0311	0387	35
36	1695	1627	1558	1489	1420	1352	1283	1214	1145	22'7106	7181	7260	7340	7420	7500	7580	7660	7740	7820	7900	36
37	9243	9172	9101	9031	8960	8889	8818	8748	8677	22'4242	2823	2904	2985	3067	3148	3229	3310	3391	3472	3553	37
38	6790	6717	6645	6572	6499	6427	6354	6281	6209	22'9302	9386	9469	9553	9636	9719	9803	9886	9969	0052	38	
39	4337	4262	4188	4113	4039	3964	3890	3815	3741	22'5863	5949	6034	6120	6205	6291	6376	6462	6547	6633	6719	39
40	1884	1807	1731	1655	1578	1502	1425	1349	1272	23'2424	2511	2599	2687	2775	2862	2950	3038	3125	3213	3301	40
41	9431	9353	9274	9196	9118	9039	8961	8883	8804	30'8726	8784	8864	8944	9024	9104	9184	9264	9344	9424	9504	41
42	6978	6898	6818	6737	6657	6577	6497	6416	6336	31'6256	6257	6337	6417	6497	6577	6657	6737	6817	6897	6977	42
43	4525	4443	4361	4279	4197	4114	4032	3950	3868	32'3785	3785	3863	3941	4019	4097	4175	4253	4331	4409	4487	43
44	2072	1988	1904	1820	1736	1652	1568	1484	1400	33'1315	1315	1393	1471	1549	1627	1705	1783	1861	1939	2017	44
45	9619	9533	9448	9362	9276	9190	9104	9017	8931	33'8845	8845	8923	9001	9079	9157	9235	9313	9391	9469	9547	45
46	7166	7079	6991	6903	6815	6727	6639	6551	6463	34'6375	6375	6453	6531	6609	6687	6765	6843	6921	6999	7077	46
47	4714	4624	4534	4444	4354	4265	4175	4085	3995	35'3905	3905	3983	4061	4139	4217	4295	4373	4451	4529	4607	47
48	2261	2169	2077	1986	1894	1802	1710	1619	1527	36'1435	1435	1513	1591	1669	1747	1825	1903	1981	2059	2137	48
49	9808	9714	9621	9527	9433	9340	9246	9152	9059	36'8965	8965	9043	9121	9199	9277	9355	9433	9511	9589	9667	49
50	7355	7259	7164	7068	6973	6877	6782	6686	6590	37'6495	6495	6573	6651	6729	6807	6885	6963	7041	7119	7197	50
51	4902	4805	4707	4610	4512	4415	4317	4220	4122	38'4025	4025	4103	4181	4259	4337	4415	4493	4571	4649	4727	51
52	2449	2350	2250	2151	2052	1952	1853	1753	1654	39'1554	1554	1632	1710	1788	1866	1944	2022	2100	2178	2256	52
53	9996	9895	9794	9693	9591	9490	9389	9287	9186	39'9084	9084	9162	9240	9318	9396	9474	9552	9630	9708	9786	53
54	7543	7440	7337	7234	7131	7027	6924	6821	6718	40'6614	6614	6692	6770	6848	6926	7004	7082	7160	7238	7316	54
55	5090	4985	4880	4775	4670	4565	4460	4355	4250	41'4144	4144	4222	4300	4378	4456	4534	4612	4690	4768	4846	55
56	2637	2530	2424	2317	2210	2103	1996	1888	1781	42'1674	1674	1752	1830	1908	1986	2064	2142	2220	2298	2376	56
57	0184	0076	9967	9858	9749	9640	9531	9422	9313	42'9204	9204	9282	9360	9438	9516	9594	9672	9750	9828	9906	57
58	7732	7621	7510	7399	7289	7178	7067	6956	6845	43'6734	6734	6812	6890	6968	7046	7124	7202	7280	7358	7436	58
59	5279	5166	5053	4941	4828	4715	4602	4490	4377	44'4264	4264	4342	4420	4498	4576	4654	4732	4810	4888	4966	59
60	2826	2711	2597	2482	2367	2253	2138	2023	1908	45'1794	1794	1872	1950	2028	2106	2184	2262	2340	2418		

TRAVERSE TABLES.

Table with columns for degrees (41° to 48°) and minutes (10' to 19'). It contains two main sections: COSINE (left) and SINE (right). Each section has a grid of numerical values for each degree-minute combination.

TRAVERSE TABLES.

Table with columns for angles (41° to 48°) and rows for cosine and sine values. The table is divided into two main sections: COSINE and SINE, each with sub-columns for minutes (20' to 29').

TRAVERSE TABLES.

41°		COSINE.										SINE.										41°	
		30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'		
1	7490	7488	7486	7484	7482	7480	7478	7476	7474	7472	6626	6628	6631	6633	6635	6637	6639	6641	6644	6646	1		
2	4979	4975	4971	4968	4964	4960	4956	4952	4948	1'4944	1'3252	3257	3261	3265	3270	3274	3279	3283	3287	3292	2		
3	2469	2463	2457	2451	2446	2440	2434	2428	2422	2'2417	1'9879	9885	9892	9898	9905	9911	9918	9924	9931	9937	3		
4	9958	9951	9943	9935	9927	9920	9912	9904	9896	2'9889	2'6505	6514	6522	6531	6540	6548	6557	6566	6574	6583	4		
5	7448	7438	7429	7419	7409	7400	7390	7380	7371	3'7361	3'3131	3142	3153	3164	3175	3185	3196	3207	3218	3229	5		
6	4937	4926	4914	4903	4891	4879	4868	4856	4845	4'4833	3'9757	9770	9783	9796	9809	9823	9836	9849	9862	9875	6		
7	2427	2413	2400	2386	2373	2359	2346	2332	2319	5'2305	4'6383	6399	6414	6429	6444	6460	6475	6490	6505	6520	7		
8	9916	9901	9886	9870	9855	9839	9824	9808	9793	5'9777	5'3010	3027	3044	3062	3079	3114	3131	3149	3166	8			
9	7406	7389	7371	7354	7337	7319	7302	7284	7267	6'7250	5'9636	9655	9675	9695	9714	9734	9753	9773	9793	9812	9		
10	4896	4876	4857	4838	4818	4799	4780	4760	4741	7'4722	6'6262	6284	6306	6327	6349	6371	6393	6414	6436	6458	10		
11	2385	2364	2343	2321	2300	2279	2258	2237	2215	8'2194	7'2888	2912	2936	2960	2984	3008	3032	3056	3080	3104	11		
12	9875	9852	9828	9805	9782	9759	9736	9713	9689	8'9666	7'9514	9541	9567	9593	9619	9645	9671	9697	9723	9749	12		
13	7364	7339	7314	7289	7264	7239	7214	7189	7164	9'7138	8'6141	6169	6197	6226	6254	6282	6310	6339	6367	6395	13		
14	4854	4827	4800	4773	4746	4719	4692	4665	4638	10'4611	9'2767	2797	2828	2858	2889	2919	2950	2980	3011	3041	14		
15	2343	2314	2286	2257	2228	2199	2170	2141	2112	11'2083	9'9393	9426	9458	9491	9524	9556	9589	9622	9654	9687	15		
16	9833	9802	9771	9740	9709	9679	9648	9617	9586	11'9555	10'6019	6054	6089	6124	6159	6193	6228	6263	6298	6333	16		
17	7322	7290	7257	7224	7191	7159	7126	7093	7060	12'7027	11'2645	2682	2719	2756	2793	2830	2867	2904	2941	2978	17		
18	4812	4777	4743	4708	4673	4638	4604	4569	4534	13'4499	11'9272	9311	9350	9389	9428	9468	9507	9546	9585	9624	18		
19	2302	2265	2228	2192	2155	2118	2082	2045	2008	14'1971	12'5898	5939	5981	6022	6063	6105	6146	6187	6229	6270	19		
20	9791	9753	9714	9675	9637	9598	9560	9521	9482	14'9444	13'2524	2568	2611	2655	2698	2742	2785	2829	2872	2916	20		
21	7281	7240	7200	7159	7119	7078	7038	6997	6956	15'6916	13'9150	9196	9242	9287	9333	9379	9425	9470	9516	9561	21		
22	4770	4728	4685	4643	4601	4558	4516	4473	4431	16'4388	14'5776	5824	5872	5920	5968	6016	6064	6112	6159	6207	22		
23	2260	2215	2171	2127	2082	2038	1994	1949	1905	17'1860	15'2403	2453	2503	2553	2603	2653	2703	2753	2803	2853	23		
24	9749	9703	9657	9611	9564	9518	9472	9425	9379	17'9379	15'9029	9081	9133	9186	9238	9290	9342	9394	9447	9499	24		
25	7239	7191	7143	7094	7046	6998	6950	6901	6853	18'6805	16'5655	5709	5764	5818	5873	5927	5982	6036	6090	6145	25		
26	4728	4678	4628	4578	4528	4478	4428	4377	4327	19'4277	17'2281	2338	2394	2451	2508	2564	2621	2677	2734	2790	26		
27	2218	2166	2114	2062	2010	1958	1905	1853	1801	20'1749	17'8907	8966	9025	9084	9143	9201	9260	9319	9378	9436	27		
28	9708	9654	9600	9546	9492	9438	9383	9329	9275	20'9221	18'5534	5595	5656	5717	5777	5838	5899	5960	6021	6082	28		
29	7197	7141	7085	7029	6973	6917	6861	6805	6749	21'6693	19'2160	2223	2286	2349	2412	2476	2539	2602	2665	2728	29		
30	4687	4629	4571	4513	4455	4397	4339	4281	4224	22'4166	19'8786	8851	8917	8982	9047	9113	9178	9243	9308	9374	30		
31	2176	2116	2057	1997	1937	1877	1817	1758	1698	23'1638	20'5412	5480	5547	5615	5682	5750	5817	5885	5952	6019	31		
32	9666	9604	9542	9481	9419	9357	9295	9234	9172	23'9110	21'2038	2108	2178	2247	2317	2387	2456	2526	2596	2665	32		
33	7155	7092	7028	6964	6901	6837	6773	6710	6646	24'6582	21'8665	8737	8808	8880	8952	9024	9096	9167	9239	9311	33		
34	4645	4579	4514	4448	4383	4317	4251	4186	4120	25'4054	22'5291	5365	5439	5513	5587	5661	5735	5809	5883	5957	34		
35	2134	2067	2000	1932	1864	1797	1729	1662	1594	26'1526	23'1917	1993	2069	2146	2222	2298	2374	2450	2526	2602	35		
36	9624	9555	9485	9416	9346	9277	9207	9138	9068	26'8999	23'8543	8622	8700	8778	8857	8935	9013	9092	9170	9248	36		
37	7114	7042	6971	6900	6828	6757	6685	6614	6542	27'6471	24'5169	5250	5331	5411	5492	5572	5653	5733	5814	5894	37		
38	4603	4530	4457	4383	4310	4237	4163	4090	4016	28'3943	25'1796	1878	1961	2044	2127	2209	2292	2375	2457	2540	38		
39	2093	2018	1942	1867	1792	1717	1641	1566	1491	29'1415	25'8422	8507	8592	8677	8761	8846	8931	9016	9101	9186	39		
40	9582	9505	9428	9351	9274	9196	9119	9042	8965	29'8887	26'5048	5135	5222	5309	5396	5483	5570	5657	5744	5831	40		
41	7072	6993	6914	6835	6756	6676	6597	6518	6439	30'6360	27'1674	1764	1853	1942	2031	2121	2210	2299	2388	2477	41		
42	4561	4480	4399	4318	4237	4156	4075	3994	3913	31'3832	27'8300	8392	8483	8575	8666	8758	8849	8940	9032	9123	42		
43	2051	1968	1885	1802	1719	1636	1553	1470	1387	32'1304	28'4927	5020	5114	5208	5301	5395	5488	5582	5675	5769	43		
44	9541	9456	9371	9286	9201	9116	9031	8946	8861	32'8776	29'1553	1649	1745	1840	1936	2032	2128	2223	2319	2415	44		
45	7030	6943	6857	6770	6683	6596	6509	6422	6335	33'6248	29'8179	8277	8375	8473	8571	8669	8767	8865	8963	9061	45		
46	4520	4431	4342	4254	4165	4076	3987	3898	3809	34'3720	30'4805	4905	5006	5106	5206	5306	5406	5506	5606	5706	46		
47	2009	1919	1828	1737	1647	1556	1465	1374	1283	35'1193	31'1431	1534	1636	1738	1841	1943	2045	2148	2250	2352	47		
48	9499	9406	9314	9221	9128	9036	8943	8850	8758	35'8665	31'8058	8162	8267	8371	8476	8580	8685	8789	8893	8998	48		
49	6988	6894	6799	6705	6610	6516	6422	6328	6232	36'6137	32'4684	4791	4897	5004	5111	5217	5324	5430	5537	5643	49		
50	4478	4381	4285	4189	4092	3996	3899	3802	3706	37'3609	33'1310	1419	1528	1637	1746	1854	1963	2072	2181	2289	50		
51	1967	1869	1771	1672	1574	1476	1377	1278	1180	38'1081	33'7936	8047	8158	8269	8380	8491	8602	8713	8824	8935	51		
52	9457	9357	9256	9156	9056	8955	8855	8755	8654	38'8554	34'5462	4676	4789	4902	5015	5129	5242	5355	5468	5581	52		
53	6947	6844	6742	6640	6538	6435	6333	6231	6128	39'6026	35'1189	1304	1420	1535	1650	1766	1881	1996	2111	2227	53		
54	4436	4332	4228	4124	4019	3915	3811	3707	3602	40'3498	35'7815	7932	8050	8168	8285	8403	8520	8638	8755	8872	54		
55	1926	1820	1714	1607	1501	1395	1289	1183	1076	41'0970	36'4441	4561	4681	4800	4920	5040	5159	5279	5399	5518	55		
56	9415	9307	9199	9091	8983	8875	8767	8659	8551	41'8442	37'1067	1189	1311	1433	1555	1677	1799	1920	2042	2164	56		
57	6905	6795	6685	6575	6465	6355	6245	6135	6025	42'5914	37'7693	7818	7942	8066	8190	8314	8438	8562	8686	8810	57		
58	4394	4282	4171	4059	3947	3835	3723	3611	3499	43'3387	38'4320	4446	4572	4699	4825	4951	5077	5203	5329	5456	58		
59	1884	1770	1656	1543	1429	1315	1201	1087	973	44'0859	39'0946	1074	1203	1331	1460	1588	1716	1845	1973	2101	59		
60	9373	9258	9142	9026	8911																		

TRAVERSE TABLES.

Table with columns for degrees (41° to 48°), COSINE, and SINE. It contains numerical values for each degree and minute combination.

TRAVERSE TABLES.

41° COSINE. SINE. 41°



TRAVERSE TABLES.

42°	COSINE.										SINE.										42°
	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	
1	7431	7430	7428	7426	7424	7422	7420	7418	7416	7414	6691	6693	6696	6698	6700	6702	6704	6706	6709	6711	1
2	4863	4859	4855	4851	4847	4843	4840	4836	4832	1'4828	1'3383	3387	3391	3396	3400	3404	3409	3413	3417	3421	2
3	2294	2289	2283	2277	2271	2265	2259	2253	2248	2'2242	2'0074	0080	0087	0093	0100	0106	0113	0119	0126	0132	3
4	9726	9718	9710	9702	9695	9687	9679	9671	9663	2'9656	2'6765	6774	6783	6791	6800	6808	6817	6826	6834	6843	4
5	7157	7148	7138	7128	7118	7109	7099	7089	7079	3'7070	3'3457	3467	3478	3489	3500	3511	3521	3532	3543	3554	5
6	4589	4577	4565	4554	4542	4530	4519	4507	4495	4'4483	4'0148	0161	0174	0187	0200	0213	0226	0239	0251	0264	6
7	2020	2007	1993	1979	1966	1952	1938	1925	1911	5'1897	4'6839	6854	6869	6885	6900	6915	6930	6945	6960	6975	7
8	9452	9436	9420	9405	9389	9374	9358	9342	9327	5'9311	5'5350	3548	3565	3582	3600	3617	3634	3651	3669	3686	8
9	6883	6866	6848	6830	6813	6795	6778	6760	6743	6'6725	6'0222	0241	0261	0280	0300	0319	0338	0358	0377	0397	9
10	4314	4295	4276	4256	4237	4217	4198	4178	4159	7'4139	6'6913	6935	6956	6978	6999	7021	7043	7064	7086	7107	10
11	1746	1725	1703	1682	1660	1639	1617	1596	1574	8'1553	7'3604	3628	3652	3676	3699	3723	3747	3771	3794	3818	11
12	9177	9154	9131	9107	9084	9060	9037	9014	8990	8'8967	8'0296	0322	0348	0373	0399	0425	0451	0477	0503	0529	12
13	6609	6584	6558	6533	6508	6482	6457	6432	6406	9'6381	8'6987	7015	7043	7071	7099	7127	7155	7184	7212	7240	13
14	4040	4013	3986	3958	3931	3904	3877	3849	3822	10'3795	9'3678	3709	3739	3769	3799	3830	3860	3890	3920	3950	14
15	1472	1443	1413	1384	1355	1326	1296	1267	1238	11'1209	10'0370	0402	0434	0467	0499	0532	0564	0596	0629	0661	15
16	8903	8872	8841	8810	8779	8747	8716	8685	8654	11'8622	10'7061	7095	7130	7165	7199	7234	7268	7303	7337	7372	16
17	6335	6302	6268	6235	6202	6169	6136	6103	6070	12'6036	11'3752	3789	3826	3862	3899	3936	3973	4009	4046	4083	17
18	3766	3731	3696	3661	3626	3591	3556	3521	3485	13'3450	12'0444	0482	0521	0560	0599	0638	0677	0716	0754	0793	18
19	1198	1161	1124	1087	1050	1012	0975	0938	0901	14'0864	12'7135	7176	7217	7258	7299	7340	7381	7422	7463	7504	19
20	8629	8590	8551	8512	8473	8434	8395	8356	8317	14'8278	13'3826	3869	3913	3956	3999	4042	4085	4128	4172	4215	20
21	6060	6020	5979	5938	5897	5856	5815	5774	5733	15'5692	14'0517	0563	0608	0654	0699	0744	0790	0835	0880	0926	21
22	3492	3449	3406	3363	3320	3278	3235	3192	3149	16'3106	14'7209	7256	7304	7351	7399	7446	7494	7541	7589	7636	22
23	0923	0879	0834	0789	0744	0699	0654	0610	0565	17'0520	15'3900	3950	3999	4049	4099	4148	4198	4248	4297	4347	23
24	8355	8308	8261	8215	8168	8121	8074	8027	7981	17'7934	16'0591	0643	0695	0747	0799	0851	0902	0954	1006	1058	24
25	5786	5738	5689	5640	5591	5543	5494	5445	5396	18'5348	16'7283	7337	7391	7445	7499	7553	7607	7661	7715	7768	25
26	3218	3167	3116	3066	3015	2964	2914	2863	2812	19'2762	17'3974	4030	4086	4143	4199	4255	4311	4367	4423	4479	26
27	0649	0597	0544	0491	0439	0386	0333	0281	0228	20'0175	18'0665	0724	0782	0840	0899	0957	1015	1073	1132	1190	27
28	8081	8026	7972	7917	7862	7808	7753	7699	7644	20'7589	18'7357	7417	7478	7538	7599	7659	7719	7780	7840	7901	28
29	5512	5456	5399	5343	5286	5230	5173	5116	5060	21'5003	19'4048	4111	4173	4236	4298	4361	4424	4486	4549	4611	29
30	2943	2885	2827	2768	2710	2651	2593	2534	2476	22'2417	20'0739	0804	0869	0934	0998	1063	1128	1193	1257	1322	30
31	0375	0315	0254	0194	0133	0073	0012	9952	9892	22'9831	20'7430	7498	7564	7631	7698	7765	7832	7899	7966	8033	31
32	7806	7744	7682	7619	7557	7495	7432	7370	7307	23'7245	21'4122	4191	4260	4329	4398	4467	4537	4606	4675	4744	32
33	5238	5174	5109	5045	4981	4916	4852	4788	4723	24'4659	22'0813	0884	0956	1027	1098	1170	1241	1312	1383	1454	33
34	2669	2603	2537	2471	2404	2338	2272	2205	2139	25'2073	22'7504	7578	7651	7725	7798	7872	7946	8018	8092	8165	34
35	0101	0033	9964	9896	9828	9760	9692	9623	9555	25'9487	23'4196	4271	4347	4423	4498	4574	4649	4725	4800	4876	35
36	7532	7462	7392	7322	7252	7181	7111	7041	6971	26'6901	24'0887	0965	1043	1120	1198	1276	1354	1431	1509	1587	36
37	4964	4892	4819	4747	4675	4603	4531	4459	4387	27'4314	24'7578	7658	7738	7818	7898	7978	8058	8138	8218	8297	37
38	2395	2321	2247	2173	2099	2025	1951	1877	1803	28'1728	25'4270	4352	4434	4516	4598	4680	4762	4844	4926	5008	38
39	9826	9751	9675	9599	9523	9447	9371	9295	9218	28'9142	26'0961	1045	1129	1214	1298	1382	1466	1551	1635	1719	39
40	7258	7180	7102	7024	6946	6868	6790	6712	6634	29'6552	26'7652	7739	7825	7912	7998	8084	8171	8257	8343	8430	40
41	4689	4610	4530	4450	4370	4290	4210	4130	4050	30'3970	27'4344	4432	4521	4609	4698	4786	4875	4963	5052	5140	41
42	2121	2039	1957	1875	1794	1712	1630	1548	1466	31'1384	28'1035	1126	1216	1307	1398	1489	1579	1670	1760	1851	42
43	9552	9469	9385	9301	9217	9133	9050	8966	8882	31'8798	28'7726	7819	7912	8005	8098	8191	8283	8376	8469	8562	43
44	6984	6898	6812	6727	6641	6555	6469	6384	6298	32'6212	29'4417	4513	4608	4703	4798	4893	4988	5083	5178	5273	44
45	4415	4328	4240	4152	4065	3977	3889	3801	3714	33'3626	30'1109	1206	1303	1401	1498	1595	1692	1789	1886	1983	45
46	1847	1757	1667	1578	1488	1399	1309	1219	1129	34'1040	30'7800	7900	7999	8098	8198	8297	8396	8496	8595	8694	46
47	9278	9187	9095	9003	8912	8820	8729	8637	8545	34'8454	31'4491	4593	4695	4796	4898	4999	5101	5202	5303	5405	47
48	6710	6616	6523	6429	6336	6242	6148	6055	5961	35'5867	32'1183	1286	1390	1494	1598	1701	1805	1908	2012	2115	48
49	4141	4046	3950	3855	3759	3664	3568	3473	3378	36'3281	32'7874	7980	8086	8192	8297	8403	8509	8615	8721	8826	49
50	1572	1475	1378	1280	1183	1085	988	890	793	37'0695	33'4565	4673	4781	4889	4997	5105	5213	5321	5429	5537	50
51	9004	8905	8805	8706	8607	8507	8408	8308	8209	37'8109	34'1257	1367	1477	1587	1697	1808	1918	2028	2138	2248	51
52	6435	6334	6233	6132	6030	5929	5827	5726	5625	38'5523	34'7948	8060	8173	8285	8397	8510	8622	8734	8846	8958	52
53	3867	3764	3660	3557	3454	3351	3247	3144	3040	39'2937	35'4639	4754	4868	4983	5097	5212	5326	5440	5555	5669	53
54	1298	1193	1088	0983	0878	0772	0667	0562	0456	40'0351	36'1331	1447	1564	1681	1797	1914	2030	2147	2263	2380	54
55	8730	8623	8515	8408	8301	8194	8087	7979	7872	40'7765	36'8022	8141	8260	8378	8497	8616	8735	8853	8972	9091	55
56	6161	6052	5943	5834	5725	5616	5506	5397	5288	41'5179	37'4713	8834	4955	5076	5197	5318	5439	5560	5681	5801	56
57	3593	3482	3371	3260	3149	3037	2926	2815	2704	42'2593	38'1404	1528	1651	1774	1897	2020	2143	2266	2389	2512	57
58	1024	0911	0798	0685	0572	0459	0346	0233	0120	43'0006	38'8096	8221	8346	8472	8597	8722	8847	8973	9098	9223	58
59	8455	8341	8226	8111	7996	7881	7766	7651	7536	43'7420	39'4787	4915	5042	5170	5297	5424	5552	5679	5806	5934	59
60	5887	5770	5653	5536	5419	5302	5185														

TRAVERSE TABLES.

42°	COSINE.										SINE.										42°
	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	
1	7412	7410	7408	7406	7404	7402	7400	7398	7396	'7394	'6713	6715	6717	6719	6722	6724	6726	6728	6730	6732	1
2	4824	4820	4816	4812	4808	4804	4800	4797	4793	1'4789	1'3426	3430	3434	3439	3443	3447	3452	3456	3460	3465	2
3	2236	2230	2224	2218	2212	2207	2201	2195	2189	2'2183	2'0139	0145	0152	0158	0165	0171	0177	0184	0190	0197	3
4	9648	9640	9632	9624	9617	9609	9601	9593	9585	2'9577	2'6852	6860	6869	6877	6886	6895	6903	6912	6921	6929	4
5	7060	7050	7040	7030	7021	7011	7001	6991	6982	3'6972	3'3564	3575	3586	3597	3608	3618	3629	3640	3651	3661	5
6	4472	4460	4448	4437	4425	4413	4401	4390	4378	4'4366	4'0277	0290	0303	0316	0329	0342	0355	0368	0381	0394	6
7	1884	1870	1856	1843	1829	1815	1802	1788	1774	5'1760	4'6990	7005	7020	7036	7051	7066	7081	7096	7111	7126	7
8	9296	9280	9264	9249	9233	9217	9202	9186	9170	5'9155	5'3703	3720	3738	3755	3772	3789	3807	3824	3841	3858	8
9	6708	6690	6672	6655	6637	6620	6602	6584	6567	6'6549	6'0416	0435	0455	0474	0494	0513	0532	0552	0571	0590	9
10	4120	4100	4080	4061	4041	4022	4002	3983	3963	7'3944	6'7129	7151	7172	7194	7215	7237	7258	7280	7301	7323	10
11	1531	1510	1489	1467	1446	1424	1402	1381	1359	8'1338	7'3842	3866	3889	3913	3937	3960	3984	4008	4031	4055	11
12	8943	8920	8897	8873	8850	8826	8803	8779	8756	8'8732	8'0555	0581	0606	0632	0658	0684	0710	0736	0762	0787	12
13	6355	6330	6305	6279	6254	6228	6203	6177	6152	9'6127	8'7268	7296	7324	7352	7380	7408	7436	7464	7492	7520	13
14	3767	3740	3713	3685	3658	3631	3603	3576	3548	10'3521	9'3981	4011	4041	4071	4101	4131	4161	4192	4222	4252	14
15	1179	1150	1121	1091	1062	1033	1003	974	945	11'0915	10'0693	0726	0758	0790	0823	0855	0887	0920	0952	0984	15
16	8591	8560	8529	8497	8466	8435	8404	8372	8341	11'8310	10'7406	7441	7475	7510	7544	7579	7613	7648	7682	7716	16
17	6003	5970	5937	5904	5870	5837	5804	5771	5737	12'5704	11'4119	4156	4193	4229	4266	4302	4339	4376	4412	4449	17
18	3415	3380	3345	3310	3274	3239	3204	3169	3134	13'3098	12'0832	0871	0910	0948	0987	1026	1065	1104	1142	1181	18
19	1027	0790	0753	0717	0679	0641	0604	0567	0530	14'0493	12'7545	7586	7627	7668	7709	7750	7791	7831	7872	7913	19
20	8239	8200	8161	8122	8083	8044	8005	7965	7926	14'7887	13'4258	4301	4344	4387	4430	4473	4516	4559	4603	4646	20
21	5651	5610	5569	5528	5487	5446	5405	5364	5323	15'5281	14'0971	1016	1061	1107	1152	1197	1242	1287	1333	1378	21
22	3063	3020	2977	2934	2891	2848	2805	2762	2719	16'2676	14'7684	7731	7779	7826	7873	7921	7968	8015	8063	8110	22
23	0475	0430	0385	0340	0295	0250	0205	0160	0115	17'0070	15'4397	4446	4496	4545	4595	4644	4694	4743	4793	4842	23
24	7887	7840	7793	7746	7699	7652	7605	7558	7511	17'7464	16'1109	1161	1213	1265	1316	1368	1420	1471	1523	1575	24
25	5299	5250	5201	5152	5103	5055	5006	4957	4908	18'4859	16'7822	7876	7930	7984	8038	8092	8146	8199	8253	8307	25
26	2711	2660	2609	2558	2508	2457	2406	2355	2304	19'2253	17'4535	4591	4647	4703	4759	4815	4871	4927	4983	5039	26
27	0123	0070	0017	9964	9912	9859	9806	9753	9700	19'9648	18'1248	1306	1365	1423	1481	1539	1597	1655	1713	1771	27
28	7535	7480	7425	7371	7316	7261	7206	7152	7097	20'7042	18'7961	8021	8082	8142	8202	8263	8323	8383	8444	8504	28
29	4947	4890	4833	4777	4720	4663	4607	4550	4493	21'4436	19'4674	4736	4799	4861	4924	4986	5049	5111	5174	5236	29
30	2359	2300	2241	2183	2124	2065	2007	1948	1889	22'1831	20'1387	1452	1516	1581	1645	1710	1775	1839	1904	1968	30
31	9771	9710	9649	9589	9528	9468	9407	9346	9286	22'9225	20'8100	8167	8233	8300	8367	8434	8500	8567	8634	8701	31
32	7182	7120	7057	6995	6932	6870	6807	6745	6682	23'6619	21'4813	4882	4951	5020	5088	5157	5226	5295	5364	5433	32
33	4594	4530	4466	4401	4337	4272	4207	4143	4078	24'4014	22'1526	1597	1668	1739	1810	1881	1952	2023	2094	2165	33
34	2006	1940	1874	1807	1741	1674	1608	1541	1475	25'1408	22'8238	8312	8385	8458	8532	8605	8678	8751	8824	8897	34
35	9418	9350	9282	9213	9145	9076	9008	8939	8871	25'8802	23'4951	5027	5102	5178	5253	5328	5404	5479	5554	5630	35
36	6830	6760	6690	6619	6549	6479	6408	6338	6267	26'6197	24'1664	1742	1819	1897	1975	2052	2130	2207	2285	2362	36
37	4242	4170	4098	4025	3953	3881	3808	3736	3664	27'3591	24'8377	8457	8537	8616	8696	8776	8855	8935	9015	9094	37
38	1654	1580	1506	1431	1357	1283	1209	1134	1060	28'0985	25'5090	5172	5254	5336	5418	5499	5581	5663	5745	5826	38
39	9066	8990	8914	8838	8761	8685	8609	8532	8456	28'8380	26'1803	1887	1971	2055	2139	2223	2307	2391	2475	2559	39
40	6478	6400	6322	6244	6165	6087	6009	5931	5852	29'5774	26'8516	8602	8688	8774	8861	8947	9033	9119	9205	9291	40
41	3890	3810	3730	3650	3570	3490	3409	3329	3249	30'3168	27'5229	5317	5405	5494	5582	5670	5759	5847	5935	6023	41
42	1302	1220	1138	1056	974	892	809	727	645	31'0563	28'1942	2032	2123	2213	2304	2394	2484	2575	2665	2756	42
43	8714	8630	8546	8462	8378	8294	8210	8126	8041	31'7957	28'8654	8747	8840	8933	9025	9118	9210	9303	9395	9488	43
44	6126	6040	5954	5868	5782	5696	5610	5524	5438	32'5352	29'5367	5462	5557	5652	5747	5841	5936	6031	6126	6221	44
45	3538	3450	3362	3274	3186	3098	3010	2922	2834	33'2746	30'2080	2177	2274	2371	2468	2565	2662	2759	2856	2952	45
46	0950	0860	0770	0680	0590	0500	0410	0320	0230	34'0140	30'8793	8892	8991	9091	9190	9289	9388	9487	9586	9685	46
47	8362	8270	8178	8086	7994	7903	7811	7719	7627	34'7535	31'5506	5607	5709	5810	5911	6012	6114	6215	6316	6417	47
48	5774	5680	5586	5492	5399	5305	5211	5117	5023	35'4929	32'2219	2322	2426	2529	2633	2736	2839	2943	3046	3149	48
49	3186	3090	2994	2899	2803	2707	2611	2515	2419	36'2323	32'8932	9037	9143	9249	9354	9460	9565	9671	9776	9882	49
50	0598	0500	0402	0305	0207	0109	0011	9913	9816	36'9718	33'5645	5753	5860	5968	6076	6183	6291	6399	6506	6614	50
51	8010	7910	7810	7711	7611	7511	7411	7312	7212	37'7112	34'2358	2468	2578	2687	2797	2907	3017	3127	3236	3346	51
52	5422	5320	5218	5117	5015	4913	4812	4710	4608	38'4506	34'9071	9183	9295	9407	9519	9631	9743	9855	9967	0078	52
53	2834	2730	2626	2523	2419	2316	2212	2108	2004	39'1901	35'5783	5898	6012	6126	6240	6354	6469	6583	6697	6811	53
54	0245	0140	0034	9929	9823	9718	9612	9506	9401	39'9295	36'2496	2613	2729	2845	2962	3078	3194	3311	3427	3543	54
55	7657	7550	7443	7335	7228	7120	7012	6905	6797	40'6689	36'9209	9328	9446	9565	9683	9802	9920	0039	0157	0275	55
56	5069	4960	4851	4741	4632	4522	4413	4303	4193	41'4084	37'5922	6043	6164	6284	6405	6525	6646	6766	6887	7007	56
57	2481	2370	2259	2147	2036	1924	1813	1701	1590	42'1478	38'2635	2758	2881	3004	3126	3249	3372	3494	3617	3740	57
58	9893	9780	9667	9553	9439	9326	9213	9100	8986	42'8872	38'9348	9473	9598	9723	9848	9973	0098	0222	0347	0472	58
59	7305	7190	7075	6959	6844	6729	6613	6498	6382	43'6267	39'6061	6188	6315	6442	6569	6696	6823	6950	7077	7204	59
60	4717	4600	4483	4366	4248	4131	4014	3896	3779	44'3661	40'2774	2903	3032	31							

TRAVERSE TABLES.

42°	COSINE.										SINE.										42°
	20'	21'	22'	23'	24'	25'	26'	27'	28'	29'	20'	21'	22'	23'	24'	25'	26'	27'	28'	29'	
1	7392	7390	7388	7387	7385	7383	7381	7379	7377	7375	6734	6737	6739	6741	6743	6745	6747	6749	6752	6754	1
2	4785	4781	4777	4773	4769	4765	4761	4757	4753	1'4749	1'3469	3473	3477	3482	3486	3490	3495	3499	3503	3508	2
3	2177	2171	2165	2161	2154	2148	2142	2136	2130	2'2124	2'0203	0210	0216	0223	0229	0236	0242	0248	0255	0261	3
4	9570	9562	9554	9546	9538	9530	9523	9515	9507	2'9499	2'6939	6946	6955	6964	6972	6981	6989	6998	7006	7015	4
5	6962	6952	6942	6933	6923	6913	6903	6893	6884	3'6874	3'3672	3683	3694	3704	3715	3726	3737	3747	3758	3769	5
6	4354	4343	4331	4319	4307	4296	4284	4272	4260	4'4248	4'0407	0419	0432	0445	0458	0471	0484	0497	0510	0523	6
7	1747	1733	1719	1706	1692	1678	1664	1651	1637	5'1623	4'7141	7156	7171	7186	7201	7216	7231	7246	7261	7276	7
8	9139	9123	9108	9092	9076	9061	9045	9029	9014	5'8998	5'3875	3893	3910	3927	3944	3961	3979	3996	4013	4030	8
9	6532	6514	6496	6479	6461	6443	6426	6408	6390	6'6373	6'0610	0629	0649	0668	0687	0707	0726	0745	0765	0784	9
10	3924	3904	3885	3865	3846	3826	3806	3787	3767	7'3747	6'7344	7366	7387	7409	7430	7452	7473	7495	7516	7538	10
11	1316	1295	1273	1252	1230	1209	1187	1165	1144	8'1122	7'4079	4102	4126	4150	4173	4197	4221	4244	4268	4291	11
12	8709	8685	8662	8638	8615	8591	8568	8544	8520	8'8497	8'0813	0839	0865	0891	0916	0942	0968	0994	1019	1045	12
13	6101	6076	6050	6025	5999	5974	5948	5923	5897	9'5872	8'7548	7576	7603	7631	7659	7687	7715	7743	7771	7799	13
14	3494	3466	3439	3411	3384	3356	3329	3301	3274	10'3246	9'4282	4312	4342	4372	4402	4432	4462	4493	4523	4553	14
15	0886	0857	0827	0798	0768	0739	0709	0680	0651	11'0621	10'1016	1049	1081	1113	1145	1178	1210	1242	1274	1306	15
16	8278	8247	8216	8184	8153	8121	8090	8059	8027	11'7996	10'7751	7785	7820	7854	7888	7923	7957	7991	8026	8060	16
17	5671	5637	5604	5571	5537	5504	5471	5437	5404	12'5371	11'4485	4522	4558	4595	4631	4668	4704	4741	4777	4814	17
18	3063	3028	2993	2957	2922	2887	2851	2816	2781	13'2745	12'1220	1258	1297	1336	1374	1413	1452	1490	1529	1568	18
19	0455	0418	0381	0344	0307	0269	0232	0195	0157	14'0120	12'7954	7995	8036	8077	8117	8158	8199	8240	8281	8321	19
20	7848	7809	7770	7730	7691	7652	7613	7573	7534	14'7495	13'4689	4732	4775	4818	4860	4903	4946	4989	5032	5075	20
21	5240	5199	5158	5117	5076	5034	4993	4952	4911	15'4869	14'1423	1468	1513	1558	1604	1649	1694	1739	1784	1829	21
22	2633	2590	2546	2503	2460	2417	2374	2331	2287	16'2244	14'8157	8205	8252	8299	8347	8394	8441	8488	8535	8583	22
23	0025	9980	9935	9890	9845	9800	9754	9709	9664	16'9619	15'4892	4941	4991	5040	5090	5139	5188	5238	5287	5336	23
24	7417	7370	7323	7276	7229	7182	7135	7088	7041	17'6994	16'1626	1678	1729	1781	1833	1884	1936	1987	2039	2090	24
25	4810	4761	4712	4663	4614	4565	4516	4467	4418	18'4368	16'8361	8414	8468	8522	8576	8629	8683	8737	8790	8844	25
26	2202	2151	2100	2049	1998	1947	1896	1845	1794	19'1743	17'5095	5151	5207	5263	5319	5374	5430	5486	5542	5598	26
27	9595	9542	9489	9436	9383	9330	9277	9224	9171	19'9118	18'1830	1888	1946	2004	2062	2120	2178	2236	2294	2351	27
28	6987	6932	6877	6822	6767	6713	6658	6603	6548	20'6493	18'8564	8624	8684	8745	8805	8865	8925	8985	9045	9105	28
29	4379	4323	4266	4209	4152	4095	4038	3981	3924	21'3867	19'5298	5361	5423	5485	5548	5610	5672	5735	5797	5859	29
30	1772	1713	1654	1595	1537	1478	1419	1360	1301	22'1242	20'2033	2097	2162	2226	2291	2355	2420	2484	2548	2613	30
31	9164	9103	9043	8982	8921	8860	8799	8739	8678	22'8617	20'8767	8834	8901	8967	9034	9100	9167	9233	9300	9366	31
32	6557	6494	6431	6368	6306	6243	6180	6117	6054	23'5992	21'5502	5570	5639	5708	5777	5846	5914	5983	6052	6120	32
33	3949	3884	3820	3755	3690	3626	3561	3496	3431	24'3366	22'2236	2307	2378	2449	2520	2591	2662	2732	2803	2874	33
34	1341	1275	1208	1142	1075	1008	0941	0875	0808	25'0741	22'8971	9044	9117	9190	9263	9336	9409	9482	9555	9628	34
35	8734	8665	8597	8528	8459	8391	8322	8253	8185	25'8116	23'5705	5780	5855	5931	6006	6081	6156	6231	6306	6381	35
36	6126	6056	5985	5915	5844	5773	5703	5632	5561	26'5491	24'2439	2517	2594	2672	2749	2826	2903	2981	3058	3135	36
37	3519	3446	3374	3301	3228	3156	3083	3011	2938	27'2865	24'9174	9253	9333	9412	9492	9571	9651	9730	9810	9889	37
38	0911	0837	0762	0688	0613	0538	0464	0389	0315	28'0240	25'5908	5990	6072	6153	6235	6317	6398	6480	6561	6643	38
39	8303	8227	8151	8074	7998	7921	7845	7768	7691	28'7615	26'2643	2727	2810	2894	2978	3062	3145	3229	3313	3397	39
40	5696	5617	5539	5461	5382	5304	5225	5147	5068	29'4990	26'9377	9463	9549	9635	9721	9807	9893	9979	10064	10150	40
41	3088	3008	2927	2847	2767	2686	2606	2525	2445	30'2364	27'6112	6200	6288	6376	6464	6552	6640	6728	6816	6904	41
42	0481	0398	0316	0234	0151	0069	9986	9904	9822	30'9739	28'2846	2936	3027	3117	3207	3297	3387	3478	3568	3658	42
43	7873	7789	7704	7620	7536	7451	7367	7283	7198	31'7114	28'9580	9673	9765	9858	9950	10042	10135	10227	10319	10412	43
44	5265	5179	5093	5007	4920	4834	4748	4661	4575	32'4488	29'6315	6409	6504	6599	6693	6788	6882	6977	7071	7165	44
45	2658	2570	2481	2393	2305	2217	2128	2040	1952	33'1863	30'3049	3146	3243	3339	3436	3533	3629	3726	3823	3919	45
46	0050	9960	9870	9780	9689	9599	9509	9419	9328	33'9238	30'9784	9883	9981	10080	10179	10278	10377	10475	10574	10673	46
47	7443	7350	7258	7166	7074	6982	6890	6797	6705	34'6613	31'6518	6619	6720	6821	6922	7023	7124	7225	7326	7427	47
48	4835	4741	4647	4553	4459	4364	4270	4176	4082	35'3987	32'3252	3356	3459	3562	3665	3768	3871	3974	4077	4180	48
49	2227	2131	2035	1939	1843	1747	1651	1555	1458	36'1362	32'9987	1092	1198	1303	1408	1513	1619	1724	1829	1934	49
50	9620	9522	9424	9326	9228	9130	9031	8933	8835	36'8737	33'6721	6829	6936	7044	7151	7259	7366	7473	7581	7688	50
51	7012	6912	6812	6712	6612	6512	6412	6312	6212	37'6112	34'3456	3565	3675	3785	3894	4004	4113	4223	4332	4442	51
52	4404	4303	4201	4099	3997	3895	3793	3691	3589	38'3486	35'0190	0302	0414	0526	0637	0749	0861	0972	1084	1195	52
53	1797	1693	1589	1485	1381	1277	1173	1069	0965	39'0861	35'6925	7039	7153	7266	7380	7494	7608	7722	7835	7949	53
54	9189	9083	8978	8872	8766	8660	8554	8448	8342	39'8236	36'3659	3775	3891	4007	4123	4239	4355	4471	4587	4703	54
55	6582	6474	6366	6258	6150	6043	5935	5827	5719	40'5611	37'0393	0512	0630	0748	0866	0984	1103	1221	1339	1457	55
56	3974	3864	3755	3645	3535	3425	3315	3205	3095	41'2985	37'7128	7248	7369	7489	7609	7730	7850	7970	8090	8210	56
57	1366	1255	1143	1031	0920	0808	0696	0584	0472	42'0360	38'3862	3985	4107	4230	4352	4475	4597	4720	4842	4964	57
58	8759	8645	8532	8418	8304	8190	8076	7963	7849	42'7735	39'0597	0721	0846	0971	1095	1220	1345	1469	1593	1718	58
59	6151	6036	5920	5804	5689	5573	5457	5341	5225	43'5110	39'7331	7458	7585	7712	7838	7965	8092	8218	8345	8472	59
60	3544	3426	3309</																		

TRAVERSE TABLES.

42°	COSINE.										SINE.										42°
	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	
1	7373	7371	7369	7367	7365	7363	7361	7359	7357	7355	6756	6758	6760	6762	6764	6767	6769	6771	6773	6775	1
2	4746	4742	4738	4734	4730	4726	4722	4718	4714	4710	1'3512	3516	3520	3525	3529	3533	3538	3542	3546	3550	2
3	2118	2112	2107	2101	2095	2089	2083	2077	2071	2'2065	2'0268	0274	0281	0287	0293	0300	0306	0313	0319	0326	3
4	9491	9483	9475	9468	9460	9452	9444	9436	9428	2'9420	2'7024	7032	7041	7049	7058	7066	7075	7084	7092	7101	4
5	6864	6854	6844	6834	6825	6815	6805	6795	6785	3'6775	3'3780	3790	3801	3812	3822	3833	3844	3855	3865	3876	5
6	4237	4225	4213	4201	4189	4178	4166	4154	4142	4'4130	4'0535	0548	0561	0574	0587	0600	0613	0625	0638	0651	6
7	1609	1596	1582	1568	1554	1541	1527	1513	1499	5'1485	4'7291	7306	7321	7336	7351	7366	7381	7396	7411	7426	7
8	8982	8966	8951	8935	8919	8904	8888	8872	8856	5'8840	5'4047	4064	4082	4099	4116	4133	4150	4167	4184	4201	8
9	6355	6337	6320	6302	6284	6266	6249	6231	6213	6'6196	6'0803	0822	0842	0861	0880	0900	0919	0938	0957	0977	9
10	3728	3708	3688	3669	3649	3629	3610	3590	3570	7'3551	6'7559	7580	7602	7623	7645	7666	7688	7709	7730	7752	10
11	1101	1079	1057	1036	1014	992	971	949	927	8'0906	7'4315	4339	4362	4386	4409	4433	4456	4480	4503	4527	11
12	8473	8450	8426	8403	8379	8355	8332	8308	8284	8'8261	8'1071	1097	1122	1148	1174	1199	1225	1251	1276	1302	12
13	5846	5821	5795	5769	5744	5718	5693	5667	5641	9'5616	8'7827	7855	7882	7910	7938	7966	7994	8022	8050	8077	13
14	3219	3191	3164	3136	3109	3081	3054	3026	2998	10'2971	9'4583	4613	4643	4673	4703	4733	4763	4793	4823	4853	14
15	0592	0562	0533	0503	0474	0444	0415	0385	0355	11'0326	10'1339	1371	1403	1435	1467	1499	1531	1564	1596	1628	15
16	7964	7933	7901	7870	7839	7807	7776	7744	7713	11'7681	10'8094	8129	8163	8197	8232	8266	8300	8334	8369	8403	16
17	5337	5304	5270	5237	5203	5170	5137	5103	5070	12'5036	11'4850	4887	4923	4960	4996	5033	5069	5105	5142	5178	17
18	2710	2675	2639	2604	2568	2533	2497	2462	2427	13'2391	12'1606	1645	1683	1722	1761	1799	1838	1876	1915	1953	18
19	0083	0045	0008	9971	9933	9896	9858	9821	9784	13'9746	12'8362	8403	8444	8484	8525	8566	8606	8647	8688	8728	19
20	7455	7416	7377	7338	7298	7259	7219	7180	7141	14'7101	13'5118	5161	5204	5247	5290	5332	5375	5418	5461	5504	20
21	4828	4787	4746	4704	4663	4622	4580	4539	4498	15'4456	14'1874	1919	1964	2009	2054	2099	2144	2189	2234	2279	21
22	2201	2158	2115	2071	2028	1985	1941	1898	1855	16'1811	14'8630	8677	8724	8771	8818	8866	8913	8960	9007	9054	22
23	9574	9529	9483	9438	9393	9348	9302	9257	9212	16'9166	15'5386	5435	5484	5534	5583	5632	5681	5731	5780	5829	23
24	6947	6899	6852	6805	6758	6711	6663	6616	6569	17'6521	16'2142	2193	2245	2296	2347	2399	2450	2502	2553	2604	24
25	4319	4270	4221	4172	4123	4074	4024	3975	3926	18'3877	16'8898	8951	9005	9058	9112	9165	9219	9273	9326	9380	25
26	1692	1641	1590	1539	1488	1436	1385	1334	1283	19'1232	17'5653	5709	5765	5821	5876	5932	5988	6043	6099	6155	26
27	9065	9012	8959	8906	8853	8799	8746	8693	8640	19'8587	18'2409	2467	2525	2583	2641	2699	2757	2814	2872	2930	27
28	6438	6383	6328	6273	6217	6162	6107	6052	5997	20'5942	18'9165	9225	9285	9345	9405	9465	9525	9585	9645	9705	28
29	3810	3753	3696	3639	3582	3525	3468	3411	3354	21'3297	19'5921	5983	6046	6108	6170	6232	6294	6356	6418	6480	29
30	1183	1124	1065	1006	947	888	829	770	711	22'0652	20'2677	2741	2806	2870	2934	2999	3063	3127	3191	3255	30
31	8556	8495	8434	8373	8312	8251	8190	8129	8068	22'8007	20'9433	9499	9566	9632	9699	9765	9832	9898	9964	10031	31
32	5929	5866	5803	5740	5677	5614	5551	5488	5425	23'5362	21'6189	6257	6326	6395	6463	6532	6600	6669	6737	6806	32
33	3302	3237	3172	3107	3042	2977	2912	2847	2782	24'2717	22'2945	3016	3086	3157	3228	3298	3369	3440	3510	3581	33
34	0674	0607	0541	0474	0407	0340	0273	0206	0139	25'0072	22'9701	9774	9846	9919	9992	10065	10138	10211	10283	10356	34
35	8047	7978	7909	7841	7772	7703	7634	7565	7496	25'7427	23'6457	6532	6607	6682	6757	6832	6907	6982	7056	7131	35
36	5420	5349	5278	5208	5137	5066	4995	4924	4853	26'4782	24'3212	3290	3367	3444	3521	3598	3675	3752	3829	3907	36
37	2793	2720	2647	2574	2502	2429	2356	2283	2210	27'2137	24'9968	0488	0127	0206	0286	0365	0444	0523	0603	0682	37
38	0165	0091	0016	9941	9867	9792	9717	9642	9567	27'9492	25'6724	6806	6887	6969	7050	7131	7213	7294	7376	7457	38
39	7538	7462	7385	7308	7231	7155	7078	7001	6924	28'6847	26'3480	3564	3647	3731	3815	3898	3982	4065	4149	4232	39
40	4911	4832	4754	4675	4596	4518	4439	4360	4281	29'4202	27'0236	0322	0408	0493	0579	0665	0750	0836	0922	1007	40
41	2284	2203	2123	2042	1961	1881	1800	1719	1638	30'1558	27'6992	7080	7168	7256	7344	7431	7519	7607	7695	7782	41
42	9656	9574	9491	9409	9326	9243	9161	9078	8995	30'8913	28'3748	3838	3928	4016	4108	4198	4288	4378	4468	4558	42
43	7029	6945	6860	6776	6691	6606	6522	6437	6352	31'6268	29'0504	0596	0688	0780	0872	0965	1057	1149	1241	1333	43
44	4402	4316	4229	4143	4056	3969	3883	3796	3709	32'3623	29'7260	7354	7448	7543	7637	7731	7825	7920	8014	8108	44
45	1775	1686	1598	1509	1421	1332	1244	1155	1066	33'0978	30'4016	4112	4209	4305	4401	4498	4594	4691	4787	4883	45
46	9148	9057	8967	8876	8786	8695	8605	8514	8423	33'8333	31'0771	0870	0969	1067	1166	1264	1363	1461	1560	1658	46
47	6520	6428	6336	6243	6151	6058	5966	5873	5781	34'5688	31'7527	7628	7729	7830	7930	8031	8132	8232	8333	8434	47
48	3893	3799	3704	3610	3516	3421	3327	3232	3138	35'3043	32'4283	4386	4489	4592	4695	4798	4900	5003	5106	5209	48
49	1266	1170	1073	0977	0880	0784	0688	0591	0495	36'0398	33'1039	1144	1249	1354	1459	1564	1669	1774	1879	1984	49
50	8639	8540	8442	8344	8245	8147	8049	7950	7852	36'7753	33'7795	7902	8010	8117	8224	8331	8438	8545	8652	8759	50
51	6011	5911	5811	5711	5610	5510	5410	5309	5209	37'5108	34'4551	4660	4770	4879	4988	5098	5207	5316	5425	5534	51
52	3384	3282	3180	3078	2975	2873	2770	2668	2566	38'2463	35'1307	1418	1530	1641	1753	1864	1976	2087	2198	2309	52
53	0757	0653	0549	0444	0340	0236	0131	0027	9923	38'9818	35'8063	8176	8290	8404	8517	8631	8744	8858	8971	9085	53
54	8130	8024	7917	7811	7705	7599	7492	7386	7280	39'7173	36'4819	4934	5050	5166	5282	5397	5513	5629	5744	5860	54
55	5503	5394	5286	5178	5070	4962	4853	4745	4637	40'4528	37'1575	1693	1810	1928	2046	2164	2282	2400	2517	2635	55
56	2875	2765	2655	2545	2435	2325	2214	2104	1994	41'1883	37'8331	8451	8571	8691	8811	8931	9051	9170	9290	9410	56
57	0248	0136	0024	9912	9800	9688	9575	9463	9351	41'9238	38'5086	5209	5331	5453	5575	5697	5819	5941	6063	6185	57
58	7621	7507	7393	7279	7165	7051	6936	6822	6708	42'6594	39'1842	1967	2091	2215	2340	2464	2588	2712	2836	2960	58
59	4994	4878	4762	4646	4530	4413	4297	4181	4065	43'3949	39'8598	8725	8851	8978	9104	9230	9357	9483	9609	9736	59
60	2366	2248	2131	2013	1894																

TRAVERSE TABLES.

42°	COSINE.										SINE.										42°
	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	
1	7353	7351	7349	7347	7345	7343	7341	7339	7337	7335	6777	6779	6782	6784	6786	6788	6790	6792	6794	6797	1
2	4706	4702	4698	4694	4690	4686	4683	4679	4675	4671	13555	3559	3563	3567	3572	3576	3580	3585	3589	3593	2
3	2059	2053	2047	2042	2036	2030	2024	2018	2012	2006	20332	0338	0345	0351	0358	0364	0370	0377	0383	0390	3
4	9412	9404	9397	9389	9381	9373	9365	9357	9349	29341	27109	7118	7126	7135	7143	7152	7161	7169	7178	7186	4
5	6765	6756	6746	6736	6726	6716	6706	6696	6686	36677	33887	3897	3908	3919	3929	3940	3951	3961	3972	3983	5
6	4119	4107	4095	4083	4071	4059	4048	4036	4024	44012	40664	0677	0690	0702	0715	0728	0741	0754	0766	0779	6
7	1472	1458	1444	1430	1416	1403	1389	1375	1361	51347	47441	7456	7471	7486	7501	7516	7531	7546	7561	7576	7
8	8825	8809	8793	8777	8762	8746	8730	8714	8698	58683	54219	4236	4253	4270	4287	4304	4321	4338	4355	4372	8
9	6178	6160	6142	6125	6107	6089	6071	6053	6036	66018	60996	1015	1034	1054	1073	1092	1111	1131	1150	1169	9
10	3531	3511	3491	3472	3452	3432	3413	3393	3373	73353	67773	7795	7816	7837	7859	7880	7901	7923	7944	7965	10
11	0884	0862	0841	0819	0797	0775	0754	0732	0710	80689	74551	4574	4598	4621	4645	4668	4692	4715	4739	4762	11
12	8237	8213	8190	8166	8142	8119	8095	8071	8048	88024	81328	1354	1379	1405	1430	1456	1482	1507	1533	1559	12
13	5590	5565	5539	5513	5488	5462	5436	5411	5385	95359	88105	8133	8161	8189	8216	8244	8272	8300	8327	8355	13
14	2943	2916	2888	2860	2833	2805	2778	2750	2722	102695	94882	4912	4942	4972	5002	5032	5062	5092	5122	5152	14
15	0296	0267	0237	0208	0178	0148	0118	0089	0059	110030	101660	1692	1724	1756	1788	1820	1852	1884	1916	1948	15
16	7649	7618	7586	7555	7523	7492	7460	7428	7397	117365	108437	8471	8506	8540	8574	8608	8642	8676	8711	8745	16
17	5003	4969	4935	4902	4868	4835	4801	4768	4734	124700	115214	5251	5287	5323	5360	5396	5432	5469	5505	5541	17
18	2356	2320	2285	2249	2214	2178	2143	2107	2071	132036	121992	2030	2069	2107	2146	2184	2223	2261	2299	2338	18
19	9709	9671	9634	9596	9559	9521	9484	9446	9409	139371	128769	8810	8850	8891	8932	8972	9013	9053	9094	9134	19
20	7062	7022	6983	6943	6904	6865	6825	6786	6746	146706	135546	5589	5632	5675	5717	5760	5803	5846	5888	5931	20
21	4415	4373	4332	4291	4249	4208	4166	4125	4083	154042	142324	2369	2414	2458	2503	2548	2593	2638	2683	2727	21
22	1768	1725	1681	1638	1594	1551	1508	1464	1421	161377	149101	9148	9195	9242	9289	9336	9383	9430	9477	9524	22
23	9121	9076	9030	8985	8940	8894	8849	8803	8758	168712	155878	5928	5977	6026	6075	6124	6173	6222	6271	6321	23
24	6474	6427	6380	6332	6285	6237	6190	6143	6095	176048	162656	2707	2758	2810	2861	2912	2963	3015	3066	3117	24
25	3827	3778	3729	3679	3630	3581	3531	3482	3432	183383	169433	9486	9540	9593	9647	9700	9754	9807	9860	9914	25
26	1180	1129	1078	1026	9755	9244	8733	8222	7711	190718	176210	6266	6322	6377	6433	6488	6544	6599	6655	6710	26
27	8533	8480	8427	8374	8320	8267	8214	8160	8107	198054	182988	3045	3103	3161	3219	3276	3334	3392	3449	3507	27
28	5887	5831	5776	5721	5666	5610	5555	5500	5444	205389	189765	9825	9885	9945	1004	1064	1124	1184	1244	1303	28
29	3240	3182	3125	3068	3011	2954	2896	2839	2782	212724	196542	6604	6666	6728	6790	6852	6914	6976	7038	7100	29
30	0593	0534	0474	0415	0356	0297	0238	0179	0119	220060	203320	3384	3448	3512	3576	3640	3704	3768	3832	3896	30
31	7946	7885	7824	7762	7701	7640	7579	7518	7456	227395	210097	0163	0230	0296	0362	0428	0494	0561	0627	0693	31
32	5299	5236	5173	5110	5046	4983	4920	4857	4794	234730	216874	6943	7011	7079	7148	7216	7285	7353	7421	7490	32
33	2652	2587	2522	2457	2392	2326	2261	2196	2131	242066	223652	3722	3793	3863	3934	4004	4075	4145	4216	4286	33
34	0005	9938	9871	9804	9737	9670	9603	9535	9468	249401	230429	0502	0574	0647	0720	0792	0865	0937	1010	1083	34
35	7358	7289	7220	7151	7082	7013	6944	6875	6805	256736	237206	7281	7356	7431	7505	7580	7655	7730	7804	7879	35
36	4711	4640	4569	4498	4427	4356	4285	4214	4143	264072	243984	4061	4137	4214	4291	4368	4445	4522	4599	4676	36
37	2064	1991	1918	1845	1772	1699	1626	1553	1480	271407	250761	0840	0919	0998	1077	1156	1235	1314	1393	1472	37
38	9417	9342	9268	9193	9118	9043	8968	8892	8817	278742	257538	7619	7701	7782	7863	7944	8025	8107	8188	8269	38
39	6771	6694	6617	6540	6463	6386	6309	6232	6155	286078	264315	4399	4482	4566	4649	4732	4816	4899	4982	5065	39
40	4124	4045	3966	3887	3808	3729	3650	3571	3492	293413	271093	1178	1264	1349	1435	1520	1606	1691	1777	1862	40
41	1477	1396	1315	1234	1153	1072	0991	0910	0829	300784	277870	7958	8045	8133	8221	8308	8396	8483	8571	8658	41
42	8830	8747	8664	8581	8498	8415	8333	8250	8167	308048	284647	4737	4827	4917	5007	5096	5186	5276	5365	5455	42
43	6183	6098	6013	5928	5844	5759	5674	5589	5504	315419	291425	1517	1609	1701	1792	1884	1976	2068	2160	2252	43
44	3536	3449	3362	3276	3189	3102	3015	2928	2841	322754	298202	8296	8390	8484	8578	8672	8766	8860	8954	9048	44
45	0889	0800	0712	0623	0534	0445	0356	0267	0178	330089	304979	5076	5172	5268	5364	5460	5556	5652	5749	5845	45
46	8242	8151	8061	7970	7879	7788	7698	7607	7516	337425	311757	1855	1953	2052	2150	2248	2347	2445	2543	2641	46
47	5595	5503	5410	5317	5224	5132	5039	4946	4853	344760	318534	8635	8735	8835	8936	9036	9137	9237	9337	9438	47
48	2948	2854	2759	2664	2570	2475	2380	2285	2190	352095	325311	5414	5517	5619	5722	5824	5927	6029	6132	6234	48
49	0301	0205	0108	0011	9915	9818	9721	9624	9528	359431	332089	2193	2298	2403	2508	2612	2717	2822	2926	3031	49
50	7655	7556	7457	7359	7260	7161	7063	6964	6865	366766	338866	8973	9080	9187	9294	9400	9507	9614	9721	9827	50
51	5008	4907	4806	4706	4605	4504	4404	4303	4202	374101	345643	5752	5861	5970	6079	6188	6297	6406	6515	6624	51
52	2361	2258	2156	2053	1950	1848	1745	1642	1540	381437	352421	2532	2643	2754	2865	2976	3087	3198	3309	3420	52
53	9714	9609	9505	9400	9296	9191	9086	8982	8877	388772	359198	9311	9425	9538	9651	9764	9878	9991	1104	1217	53
54	7067	6960	6854	6747	6641	6534	6428	6321	6214	396107	365975	6091	6206	6322	6437	6552	6668	6783	6898	7014	54
55	4420	4311	4203	4095	3986	3877	3769	3660	3551	403443	372753	2870	2988	3105	3223	3340	3458	3575	3693	3810	55
56	1773	1663	1552	1442	1331	1221	1110	0999	0889	410778	379530	9650	9769	9889	10009	10128	10248	10368	10487	10607	56
57	9126	9014	8901	8789	8676	8564	8451	8339	8226	418113	386307	6429	6551	6673	6795	6916	7038	7160	7282	7403	57
58	6479	6365	6250	6136	6022	5907	5793	5678	5563	425449	393085	3209	3333	3457	3581	3704	3828	3952	4076	4200	58
59	3832	3716	3600	3483	3367	3250	3134	3017	2901	432784	399862	9988	1114	1240	1366	1492	1618	1744	1870	1996	59
60	1185	1067	0949	0830	0712	0594	0475	0357	0238	440119	406639	6768	6896	7024	7						

TRAVERSE TABLES.

42°	COSINE.										SINE.										42°
	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	
1	7333	7331	7329	7327	7325	7323	7321	7319	7318	7316	6799	6801	6803	6805	6807	6809	6811	6814	6816	6818	1
2	4667	4663	4659	4655	4651	4647	4643	4639	4635	4631	13597	3602	3606	3610	3614	3619	3623	3627	3631	3636	2
3	2000	1994	1988	1982	1976	1970	1964	1958	1953	21947	20396	0402	0409	0415	0422	0428	0434	0441	0447	0454	3
4	9333	9325	9318	9310	9302	9294	9286	9278	9270	29262	27195	7203	7212	7220	7229	7237	7246	7254	7263	7271	4
5	6667	6657	6647	6637	6627	6617	6607	6597	6588	36578	33993	4004	4015	4025	4036	4047	4057	4068	4079	4089	5
6	4000	3988	3976	3964	3953	3941	3929	3917	3905	43893	40792	0805	0818	0830	0843	0856	0869	0882	0894	0907	6
7	1333	1320	1306	1292	1278	1264	1250	1236	1223	51209	47591	7606	7621	7636	7650	7665	7680	7695	7710	7725	7
8	8667	8651	8635	8619	8603	8588	8572	8556	8540	58524	54389	4407	4424	4441	4458	4475	4492	4509	4526	4543	8
9	6000	5982	5964	5947	5929	5911	5893	5875	5858	65840	61188	1207	1227	1246	1265	1284	1303	1322	1342	1361	9
10	3333	3314	3294	3274	3254	3234	3215	3195	3175	73155	67987	8008	8029	8051	8072	8093	8115	8136	8157	8179	10
11	0667	0645	0623	0601	0580	0558	0536	0514	0493	80471	74785	4809	4832	4856	4879	4903	4926	4950	4973	4996	11
12	8000	7976	7953	7929	7905	7881	7858	7834	7810	87786	81584	1601	1635	1661	1687	1712	1738	1763	1789	1814	12
13	5333	5308	5282	5256	5231	5205	5179	5153	5128	95102	88383	8411	8438	8466	8494	8521	8549	8577	8604	8632	13
14	2667	2639	2611	2584	2556	2528	2501	2473	2445	102417	95182	5211	5241	5271	5301	5331	5361	5390	5420	5450	14
15	0000	9971	9941	9911	9881	9852	9822	9792	9763	109733	101980	2012	2044	2076	2108	2140	2172	2204	2236	2268	15
16	7334	7302	7270	7239	7207	7175	7143	7112	7080	117048	108779	8813	8847	8881	8915	8949	8984	9018	9052	9086	16
17	4667	4633	4600	4566	4532	4499	4465	4431	4398	124364	115578	5614	5650	5686	5723	5759	5795	5831	5867	5904	17
18	2000	1965	1929	1893	1858	1822	1786	1751	1715	131679	122376	2415	2453	2491	2530	2568	2606	2645	2683	2721	18
19	9334	9296	9258	9221	9183	9146	9108	9070	9033	138995	129175	9215	9256	9296	9337	9377	9418	9458	9499	9539	19
20	6667	6627	6588	6548	6509	6469	6429	6390	6350	146310	135974	6016	6059	6102	6144	6187	6229	6272	6315	6357	20
21	4000	3959	3917	3876	3834	3792	3751	3709	3668	153626	142772	2817	2862	2907	2951	2996	3041	3086	3130	3175	21
22	1334	1290	1247	1203	1159	1116	1072	1029	9858	160941	149571	9618	9665	9712	9759	9805	9852	9899	9946	9993	22
23	8667	8621	8576	8530	8485	8439	8394	8348	8303	168257	156370	6419	6468	6517	6566	6615	6664	6713	6762	6811	23
24	6000	5953	5905	5858	5810	5763	5715	5668	5620	175573	163168	3220	3271	3322	3373	3424	3475	3526	3577	3629	24
25	3334	3284	3235	3185	3136	3086	3037	2987	2938	182888	169967	0020	0074	0127	0180	0233	0287	0340	0393	0446	25
26	0667	0616	0564	0513	0461	0410	0358	0307	0255	190204	176766	6821	6877	6932	6987	7043	7098	7154	7209	7264	26
27	8000	7947	7893	7840	7787	7733	7680	7626	7573	197519	183564	3622	3680	3737	3795	3852	3910	3967	4025	4082	27
28	5334	5278	5223	5167	5112	5057	5001	4946	4890	204835	190363	0423	0482	0542	0602	0661	0721	0781	0840	0900	28
29	2667	2610	2552	2495	2437	2380	2323	2265	2208	212150	197162	7224	7285	7347	7409	7471	7533	7594	7656	7718	29
30	0000	9941	9882	9822	9763	9703	9644	9585	9525	219466	203960	4024	4088	4152	4216	4280	4344	4408	4472	4536	30
31	7334	7272	7211	7150	7088	7027	6965	6904	6843	226781	210759	0825	0891	0957	1023	1090	1156	1222	1288	1354	31
32	4667	4604	4540	4477	4414	4350	4287	4224	4160	234097	217558	7626	7694	7762	7831	7899	7967	8035	8103	8171	32
33	2000	1935	1870	1804	1739	1674	1608	1543	1478	241412	224356	4427	4497	4568	4638	4708	4778	4849	4919	4989	33
34	9334	9266	9199	9132	9065	8997	8930	8863	8795	248728	231155	1228	1300	1373	1445	1518	1590	1662	1735	1807	34
35	6667	6598	6529	6459	6390	6321	6251	6182	6113	256043	237954	8028	8103	8178	8252	8327	8401	8476	8550	8625	35
36	4000	3929	3858	3787	3715	3644	3573	3501	3430	263359	244753	4829	4906	4983	5060	5136	5213	5290	5366	5443	36
37	1334	1261	1187	1114	1041	0968	0894	0821	0748	270674	251551	1630	1709	1788	1867	1946	2024	2103	2182	2261	37
38	8667	8592	8517	8442	8366	8291	8216	8140	8065	277990	265850	8431	8512	8593	8674	8755	8836	8917	8998	9079	38
39	6000	5923	5846	5769	5692	5615	5537	5460	5383	285305	273149	5232	5315	5398	5481	5564	5647	5730	5813	5896	39
40	3334	3255	3176	3096	3017	2938	2859	2779	2700	292621	271947	2033	2118	2203	2288	2374	2459	2544	2629	2714	40
41	0667	0586	0505	0424	0343	0261	0180	0099	0018	299936	278746	8833	8921	9008	9096	9183	9270	9358	9445	9532	41
42	8000	7917	7834	7751	7668	7585	7502	7418	7335	307252	285545	5634	5724	5813	5903	5992	6082	6171	6261	6350	42
43	5334	5249	5164	5079	4993	4908	4823	4738	4653	314567	292343	2435	2527	2618	2710	2802	2893	2985	3076	3168	43
44	2667	2580	2493	2406	2319	2232	2145	2057	1970	321883	299142	9236	9330	9423	9517	9611	9705	9799	9892	9984	44
45	0001	9912	9822	9733	9644	9555	9466	9377	9288	329198	305941	6037	6133	6229	6324	6420	6516	6612	6708	6804	45
46	7334	7243	7152	7061	6970	6879	6787	6696	6605	336514	312739	2837	2936	3034	3132	3230	3328	3426	3523	3621	46
47	4667	4574	4481	4388	4295	4202	4109	4016	3923	343829	319538	9638	9738	9839	9939	0039	0139	0239	0339	0439	47
48	2001	1906	1811	1716	1621	1526	1430	1335	1240	351145	326337	6439	6541	6644	6746	6848	6951	7053	7155	7257	48
49	9334	9237	9140	9043	8946	8849	8752	8655	8558	358461	333135	3240	3344	3449	3553	3658	3762	3866	3971	4075	49
50	6667	6568	6469	6370	6271	6172	6073	5974	5875	365776	339934	0041	0147	0254	0360	0467	0573	0680	0786	0893	50
51	4001	3900	3799	3698	3597	3496	3395	3294	3193	373092	346733	6841	6950	7059	7168	7276	7385	7494	7602	7711	51
52	1334	1231	1128	1025	0922	0819	0716	0613	0510	380407	353531	3642	3753	3864	3975	4086	4196	4307	4418	4529	52
53	8667	8562	8458	8353	8248	8143	8038	7933	7828	387723	360330	0443	0556	0669	0782	0895	1008	1121	1234	1346	53
54	6001	5894	5787	5680	5573	5466	5359	5252	5145	395038	367129	7244	7359	7474	7589	7704	7819	7934	8049	8164	54
55	3334	3225	3116	3007	2899	2790	2681	2572	2463	402354	373927	4045	4162	4279	4396	4514	4631	4748	4865	4982	55
56	0667	0557	0446	0335	0224	0113	0002	9891	9780	409669	380726	0846	0965	1084	1204	1323	1442	1562	1681	1800	56
57	8001	7888	7775	7662	7549	7437	7324	7211	7098	416985	387525	7646	7768	7889	8011	8132	8254	8375	8496	8618	57
58	5334	5219	5105	4990	4875	4760	4645	4530	4415	424300	394323	4447	4571	4695	4818	4942	5065	5189	5312	5436	58
59	2667	2551	2434	2317	2200	2083	1967	1850	1733	431616	401122	1248	1374	150							

TRAVERSE TABLES.

Table with columns for angles (43° to 46°) and rows for cosine and sine values. The table is divided into two main sections: Cosine (left) and Sine (right). Each section has a header row for the angle and a grid of numerical values for each minute of the angle. The cosine section is labeled 'COSINE.' and the sine section is labeled 'SINE.'. The angles are marked at 43°, 46°, and 46°.

# TRAVERSE TABLES.

43°	COSINE.										SINE.										43°
	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	
	1	7294	7292	7290	7288	7286	7284	7282	7280	7278	7276	*6841	6843	6845	6848	6850	6852	6854	6856	6858	
2	4587	4583	4579	4575	4571	4567	4563	4559	4555	1'4551	1'3682	3687	3691	3695	3700	3704	3708	3712	3716	3721	2
3	1881	1875	1869	1863	1857	1851	1845	1839	1833	2'1827	2'0524	0530	0536	0543	0549	0555	0562	0568	0575	0581	3
4	9175	9167	9159	9151	9143	9135	9127	9119	9111	2'9103	2'7365	7373	7382	7390	7399	7407	7416	7424	7433	7441	4
5	6468	6458	6448	6438	6429	6419	6409	6399	6389	3'6379	3'4206	4217	4227	4238	4249	4259	4270	4280	4291	4302	5
6	3762	3750	3738	3726	3714	3702	3690	3678	3666	4'3654	4'1047	1060	1073	1086	1098	1111	1124	1136	1149	1162	6
7	1056	1042	1028	1014	1000	0986	0972	0958	0944	5'0930	4'7889	7903	7918	7933	7948	7963	7978	7992	8007	8022	7
8	8349	8333	8317	8302	8286	8270	8254	8238	8222	5'8206	5'4730	4747	4764	4781	4798	4815	4832	4849	4865	4882	8
9	5643	5625	5607	5589	5571	5553	5535	5517	5500	6'5482	6'1571	1590	1609	1628	1647	1666	1686	1705	1724	1743	9
10	2937	2917	2897	2877	2857	2837	2817	2797	2777	7'2757	6'8412	8434	8455	8476	8497	8518	8539	8561	8582	8603	10
11	0230	0208	0187	0165	0143	0121	0099	0077	0055	8'0033	7'5254	5277	5300	5324	5347	5370	5393	5417	5440	5463	11
12	7524	7500	7476	7452	7428	7405	7381	7357	7333	8'7309	8'2095	2120	2146	2171	2197	2222	2247	2273	2298	2324	12
13	4818	4792	4766	4740	4714	4688	4662	4636	4610	9'4585	8'9336	8964	8991	9019	9046	9074	9101	9129	9156	9184	13
14	2111	2083	2056	2028	2000	1972	1944	1916	1888	10'1860	9'5777	5807	5837	5866	5896	5926	5955	5985	6015	6044	14
15	9405	9375	9345	9315	9286	9256	9226	9196	9166	10'9136	10'2618	2650	2682	2714	2746	2777	2809	2841	2873	2905	15
16	6699	6667	6635	6603	6571	6539	6507	6476	6444	11'6412	10'9460	9494	9528	9561	9595	9629	9663	9697	9731	9765	16
17	3992	3959	3925	3891	3857	3823	3789	3755	3721	12'3678	11'6301	6337	6373	6409	6445	6481	6517	6553	6589	6625	17
18	1286	1250	1214	1179	1143	1107	1071	1035	9999	13'0963	12'3142	3180	3218	3257	3295	3333	3371	3409	3447	3485	18
19	8580	8542	8504	8466	8428	8390	8353	8315	8277	13'8239	12'9983	0024	0064	0104	0145	0185	0225	0265	0305	0346	19
20	5873	5834	5794	5754	5714	5674	5634	5594	5555	14'5515	13'6825	6867	6909	6952	6995	7037	7079	7121	7164	7206	20
21	3167	3125	3083	3042	3000	2958	2916	2874	2832	15'2790	14'3666	3710	3755	3799	3844	3888	3933	3977	4022	4066	21
22	0461	0417	0373	0329	0285	0242	0198	0154	0110	16'0066	15'0507	0554	0600	0647	0694	0740	0787	0833	0880	0927	22
23	7754	7709	7663	7617	7571	7525	7479	7433	7388	16'7342	15'7348	7397	7446	7495	7545	7592	7641	7690	7738	7787	23
24	5048	5000	4952	4905	4857	4809	4761	4713	4665	17'4618	16'4189	4240	4291	4342	4393	4444	4495	4546	4596	4647	24
25	2342	2292	2242	2192	2143	2093	2043	1993	1943	18'1893	17'1031	1084	1137	1190	1243	1296	1349	1402	1455	1508	25
26	9635	9584	9532	9480	9428	9376	9325	9273	9221	18'9169	17'7872	7927	7982	8037	8092	8148	8203	8258	8313	8368	26
27	6929	6875	6822	6768	6714	6660	6606	6552	6499	19'6445	18'4713	4770	4828	4885	4942	4999	5057	5114	5171	5228	27
28	4223	4167	4111	4055	4000	3944	3888	3832	3776	20'3720	19'1554	1614	1673	1733	1792	1851	1911	1970	2029	2088	28
29	1516	1459	1401	1343	1285	1228	1170	1112	1054	21'0996	19'8396	8457	8519	8580	8642	8703	8764	8826	8887	8949	29
30	8810	8750	8691	8631	8571	8511	8451	8392	8332	21'8272	20'5237	5301	5364	5428	5491	5555	5618	5682	5746	5809	30
31	6104	6042	5980	5919	5857	5795	5733	5671	5610	22'5548	21'2078	2144	2210	2275	2341	2407	2472	2538	2604	2669	31
32	3397	3334	3270	3206	3142	3079	3015	2951	2887	23'2823	21'8919	8987	9055	9123	9191	9259	9326	9394	9462	9530	32
33	0691	0625	0560	0494	0428	0362	0297	0231	0165	24'0099	22'5761	5831	5901	5971	6040	6110	6180	6250	6320	6390	33
34	7985	7917	7849	7782	7714	7646	7578	7511	7443	24'7375	23'2602	2674	2746	2818	2890	2962	3034	3106	3178	3250	34
35	5278	5209	5139	5069	5000	4930	4860	4790	4720	25'4651	23'9443	9517	9591	9666	9740	9814	9888	9962	0036	0111	35
36	2572	2500	2429	2357	2285	2214	2142	2070	1998	26'1926	24'6284	6361	6437	6513	6590	6666	6742	6818	6895	6971	36
37	9866	9792	9718	9645	9571	9497	9423	9350	9276	26'9202	25'3125	3204	3282	3361	3439	3518	3596	3674	3753	3831	37
38	7159	7084	7008	6932	6857	6781	6705	6629	6554	27'6478	25'9967	0047	0128	0208	0289	0370	0450	0531	0611	0691	38
39	4453	4375	4298	4220	4142	4065	3987	3909	3831	28'3754	26'6808	6891	6973	7056	7139	7221	7304	7387	7469	7552	39
40	1747	1667	1587	1508	1428	1348	1269	1189	1109	29'1029	27'3649	3734	3819	3904	3988	4073	4158	4243	4327	4412	40
41	9040	8959	8877	8795	8714	8632	8550	8469	8387	29'8305	28'0490	0577	0664	0751	0838	0925	1012	1099	1186	1272	41
42	6334	6250	6167	6083	6000	5916	5832	5748	5665	30'5581	28'7332	7471	7510	7599	7688	7777	7866	7955	8044	8133	42
43	3628	3542	3456	3371	3285	3200	3114	3028	2942	31'2856	29'4173	4264	4355	4446	4538	4629	4720	4811	4902	4993	43
44	0921	0834	0746	0659	0571	0483	0396	0308	0220	32'0132	30'1014	1107	1201	1294	1387	1481	1574	1667	1760	1853	44
45	8215	8125	8036	7946	7857	7767	7677	7587	7498	32'7408	30'7855	7951	8046	8142	8237	8332	8428	8523	8618	8714	45
46	5509	5417	5326	5234	5142	5051	4959	4867	4775	33'4684	31'4697	4794	4892	4989	5087	5184	5282	5379	5476	5574	46
47	2802	2709	2615	2522	2428	2334	2241	2147	2053	34'1959	32'1538	1637	1737	1837	1936	2036	2136	2235	2335	2434	47
48	0096	0000	9905	9809	9714	9618	9522	9427	9331	34'9235	32'8379	8481	8583	8684	8786	8888	8990	9091	9193	9294	48
49	7390	7292	7195	7097	6999	6902	6804	6706	6609	35'6511	33'5220	5324	5428	5532	5636	5740	5843	5947	6051	6155	49
50	4683	4584	4484	4385	4285	4186	4086	3986	3886	36'3787	34'2061	2168	2274	2380	2486	2592	2697	2803	2909	3015	50
51	1977	1876	1774	1675	1575	1469	1368	1266	1164	37'1062	34'8903	9011	9119	9227	9335	9443	9551	9659	9767	9875	51
52	9271	9167	9064	8960	8857	8753	8649	8546	8442	37'8338	35'5744	5854	5964	6075	6185	6295	6405	6515	6626	6736	52
53	6564	6459	6353	6248	6142	6037	5931	5825	5720	38'5614	36'2585	2698	2810	2922	3035	3147	3259	3371	3484	3596	53
54	3858	3751	3643	3536	3428	3320	3213	3105	2997	39'2890	36'9426	9541	9655	9770	9884	9999	0113	0228	0342	0456	54
55	1152	1042	0933	0823	0714	0604	0494	0385	0275	40'0165	37'6268	6384	6501	6618	6734	6851	6967	7084	7200	7317	55
56	8445	8334	8222	8111	7999	7888	7776	7664	7553	40'7441	38'3109	3228	3346	3465	3584	3702	3821	3940	4058	4177	56
57	5739	5626	5512	5399	5285	5171	5058	4944	4830	41'4717	38'9950	0701	0192	0313	0434	0554	0675	0796	0916	1037	57
58	3033	2917	2802	2686	2571	2455	2340	2224	2108	42'1992	39'6791	6914	7037	7160	7283	7406	7529	7652	7775	7897	58
59	0326	0209	0091	9974	9856	9739	9621	9504	9386	42'9268	40'3633	3758	3883	4008	4133	4258	4383	4508	4633	4758	59
60	7620	7501	7381	7262	7142	7023	6903	6783	6664	43'6544	41'0474	0601	07								



TRAVERSE TABLES.

Table with columns for angles (43°, 46°) and trigonometric functions (COSINE, SINE). The table is organized into two main sections, one for 43° and one for 46°. Each section contains two columns of data: COSINE and SINE. The rows represent angles from 1' to 100' in 1-degree increments. The values are listed in a grid format, with some rows containing multiple values for each angle. The table is bordered by a double-line frame.

TRAVERSE TABLES.

Table with columns for degrees (43°, 46°), cosine, and sine values. The table is organized into sections for Cosine and Sine at both 43° and 46°. Each section contains rows of numerical values corresponding to minutes and seconds of the degree.

## TRAVERSE TABLES.

43°	COSINE.									SINE.									43°		
	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	40'	41'	42'	43'	44'	45'	46'	47'	48'	49'	
1	7234	7232	7230	7228	7226	7224	7222	7220	7218	'7216	6905	6907	6909	6911	6913	6915	6917	6919	6921	6924	1
2	4467	4463	4459	4455	4451	4447	4443	4439	4435	1'4431	3809	3813	3818	3822	3826	3830	3834	3839	3843	3847	2
3	1701	1695	1689	1683	1677	1671	1665	1659	1653	2'1647	2'0714	0720	0726	0733	0739	0745	0752	0758	0764	0771	3
4	8935	8927	8919	8911	8903	8895	8887	8879	8870	2'8862	2'7618	7627	7635	7644	7652	7661	7669	7677	7686	7694	4
5	6168	6159	6148	6138	6128	6118	6108	6098	6088	3'6078	3'4523	4534	4544	4555	4565	4576	4586	4597	4607	4618	5
6	3402	3390	3378	3366	3354	3342	3330	3318	3306	4'3294	4'1428	1440	1453	1466	1478	1491	1503	1516	1529	1541	6
7	0636	0622	0608	0594	0580	0565	0551	0537	0523	5'0509	4'8332	8347	8362	8376	8391	8406	8421	8435	8450	8465	7
8	7870	7853	7837	7821	7805	7789	7773	7757	7741	5'7725	5'5237	5254	5271	5287	5304	5321	5338	5355	5371	5388	8
9	5103	5085	5067	5049	5031	5013	4995	4977	4958	6'4940	6'2142	2160	2179	2198	2217	2236	2255	2274	2293	2312	9
10	2337	2317	2297	2277	2257	2236	2216	2196	2176	7'2156	6'9046	9067	9088	9109	9130	9151	9172	9193	9214	9235	10
11	9571	9548	9526	9504	9482	9460	9438	9416	9394	7'9371	7'5951	5974	5997	6020	6043	6066	6090	6113	6136	6159	11
12	6804	6780	6756	6732	6708	6684	6660	6635	6611	8'6587	8'2855	2881	2906	2931	2956	2982	3007	3032	3057	3082	12
13	4038	4012	3986	3960	3933	3907	3881	3855	3829	9'3803	8'9760	9787	9815	9842	9869	9897	9924	9951	9979	1006	13
14	1272	1244	1215	1187	1159	1131	1103	1075	1046	10'1018	9'6665	6694	6724	6753	6782	6812	6841	6871	6900	6929	14
15	8505	8475	8445	8415	8385	8355	8324	8294	8264	10'8234	10'3569	3601	3632	3664	3695	3727	3758	3790	3821	3853	15
16	5739	5707	5675	5643	5610	5578	5546	5514	5482	11'5449	11'0474	0508	0541	0575	0608	0642	0676	0709	0743	0776	16
17	2973	2939	2904	2870	2836	2802	2768	2733	2699	12'2665	11'7378	7414	7450	7486	7521	7557	7593	7629	7664	7700	17
18	0206	0170	0134	0098	0062	0026	9989	9953	9917	12'9881	12'4283	4321	4359	4397	4435	4472	4510	4548	4586	4624	18
19	7440	7402	7364	7326	7287	7249	7211	7173	7134	13'7096	13'1188	1228	1268	1308	1348	1387	1427	1467	1507	1547	19
20	4674	4634	4593	4553	4513	4473	4433	4392	4352	14'4312	13'8092	8134	8176	8219	8261	8303	8345	8387	8429	8471	20
21	1907	1865	1823	1781	1739	1696	1654	1612	1570	15'1527	14'4997	5041	5085	5129	5174	5218	5262	5306	5350	5394	21
22	9141	9097	9053	9009	8964	8920	8876	8832	8787	15'8743	15'1902	1948	1994	2040	2087	2133	2179	2225	2272	2318	22
23	6375	6329	6282	6236	6190	6144	6097	6051	6005	16'5959	15'8806	8855	8903	8951	9000	9048	9096	9145	9193	9241	23
24	3609	3560	3512	3464	3416	3367	3319	3271	3222	17'3174	16'5711	5761	5812	5862	5913	5963	6014	6064	6114	6165	24
25	0842	0792	0742	0692	0641	0591	0541	0490	0440	18'0390	17'2615	2668	2721	2773	2826	2878	2931	2983	3036	3088	25
26	8076	8024	7971	7919	7867	7815	7762	7710	7658	18'7605	17'9520	9575	9629	9684	9739	9793	9848	9903	9957	1002	26
27	5310	5255	5201	5147	5093	5038	4984	4930	4875	19'4821	18'6425	6481	6538	6595	6652	6709	6765	6822	6879	6935	27
28	2543	2487	2431	2375	2318	2262	2206	2149	2093	20'2036	19'3329	3388	3447	3506	3565	3624	3682	3741	3800	3859	28
29	9777	9719	9660	9602	9544	9486	9427	9369	9310	20'9252	20'0234	0295	0356	0417	0478	0539	0600	0661	0722	0782	29
30	7011	6950	6890	6830	6770	6709	6649	6588	6528	21'6468	20'7139	7202	7265	7328	7391	7454	7517	7580	7643	7706	30
31	4244	4182	4120	4057	3995	3933	3870	3808	3746	22'3683	21'4043	4108	4174	4239	4304	4369	4434	4499	4564	4629	31
32	1478	1414	1349	1285	1221	1156	1092	1028	9663	23'0889	22'0948	1015	1082	1150	1217	1284	1351	1419	1486	1553	32
33	8712	8645	8579	8513	8446	8380	8314	8247	8181	23'8114	22'7852	7922	7991	8061	8130	8199	8269	8338	8407	8477	33
34	5945	5877	5809	5740	5672	5604	5535	5467	5398	24'5330	23'4757	4829	4900	4972	5043	5114	5186	5257	5329	5400	34
35	3179	3109	3038	2968	2898	2827	2757	2687	2616	25'2546	24'1662	1735	1809	1882	1956	2030	2103	2177	2250	2324	35
36	0413	0341	0268	0196	0123	0051	9979	9906	9834	25'9761	24'8566	8642	8718	8793	8869	8945	9020	9096	9172	9247	36
37	7647	7572	7498	7423	7349	7275	7200	7126	7051	26'6977	25'5471	5549	5626	5704	5782	5860	5938	6015	6093	6171	37
38	4880	4804	4727	4651	4575	4498	4422	4345	4269	27'4192	26'2375	2455	2535	2615	2695	2775	2855	2935	3014	3094	38
39	2114	2036	1957	1879	1800	1722	1643	1565	1486	28'1408	26'9280	9362	9444	9526	9608	9690	9772	9854	9936	10018	39
40	9348	9267	9187	9106	9026	8946	8865	8785	8704	28'8624	27'6185	6269	6353	6437	6521	6605	6689	6773	6857	6941	40
41	6581	6499	6417	6334	6252	6169	6087	6004	5922	29'5839	28'3089	3176	3262	3348	3434	3520	3607	3693	3779	3865	41
42	3815	3731	3646	3562	3477	3393	3308	3224	3139	30'3055	28'9994	1082	1171	1259	1347	1436	1524	1612	1700	1788	42
43	1049	0962	0876	0789	0703	0617	0530	0443	0357	31'0270	29'6899	6989	7079	7170	7260	7351	7441	7531	7622	7712	43
44	8282	8194	8106	8017	7929	7840	7752	7663	7574	31'7486	30'3803	3896	3988	4081	4173	4266	4358	4451	4543	4635	44
45	5516	5426	5335	5245	5154	5064	4973	4883	4792	32'4702	31'0708	0802	0897	0992	1086	1181	1275	1370	1464	1559	45
46	2750	2657	2565	2472	2380	2287	2195	2102	2010	33'1917	31'7612	7709	7806	7903	7999	8096	8193	8289	8386	8482	46
47	9983	9889	9795	9700	9606	9511	9417	9322	9227	33'9133	32'4517	4616	4715	4814	4912	5011	5110	5209	5307	5406	47
48	7217	7121	7024	6928	6831	6735	6638	6542	6445	34'6348	33'1422	1523	1624	1724	1825	1926	2027	2128	2229	2329	48
49	4451	4352	4254	4155	4057	3958	3860	3761	3662	35'3564	33'8326	8429	8532	8635	8738	8841	8944	9047	9150	9253	49
50	1685	1584	1484	1383	1283	1182	1081	0981	0880	36'0779	34'5231	5336	5441	5546	5651	5757	5862	5967	6072	6177	50
51	8918	8816	8713	8611	8508	8406	8303	8200	8098	36'7995	35'2135	2243	2350	2457	2564	2672	2779	2886	2993	3100	51
52	6152	6047	5943	5838	5734	5629	5525	5420	5315	37'5211	35'9040	9149	9259	9368	9478	9587	9696	9805	9914	1004	52
53	3386	3279	3173	3066	2960	2853	2746	2640	2533	38'2426	36'5945	6056	6168	6279	6391	6502	6613	6725	6836	6947	53
54	0619	0511	0402	0294	0185	0077	9968	9859	9751	38'9642	37'2849	2963	3076	3190	3304	3417	3531	3644	3757	3871	54
55	7853	7742	7632	7521	7411	7300	7190	7079	6968	39'6857	37'9754	9870	9985	1001	0217	0332	0448	0563	0679	0794	55
56	5087	4974	4862	4749	4636	4524	4411	4298	4186	40'4073	38'6659	6776	6894	7012	7130	7247	7365	7483	7600	7718	56
57	2320	2206	2091	1977	1862	1747	1633	1518	1403	41'1289	39'3563	3683	3803	3923	4043	4162	4282	4402	4522	4641	57
58	9554	9437	9321	9204	9088	8971	8854	8738	8621	41'8504	40'0468	0590	0712	0834	0956	1078	1199	1321	1443	1565	58
59	6788	6669	6551	6432	6313	6195	6076	5957	5839	4											

TRAVERSE TABLES.

Table with columns for degrees (43° to 46°) and minutes (1' to 10'), and rows for Cosine and Sine values. The table is organized into four quadrants: Cosine (43°-46°) and Sine (46°-43°).

# TRAVERSE TABLES.

44°	COSINE.									SINE.									44°		
	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	0'	1'	2'	3'	4'	5'	6'	7'	8'	9'	
1	7193	7191	7189	7187	7185	7183	7181	7179	7177	7175	6947	6949	6951	6953	6955	6957	6959	6961	6963	6965	1
2	4387	4383	4379	4375	4371	4367	4363	4358	4354	1'4350	1'3893	3897	3902	3906	3910	3914	3918	3922	3927	3931	2
3	1580	1574	1568	1562	1556	1550	1544	1538	1532	2'1526	2'0840	0846	0852	0859	0865	0871	0877	0884	0890	0896	3
4	8774	8766	8757	8749	8741	8733	8725	8717	8709	2'8701	2'7786	7795	7803	7811	7820	7828	7837	7846	7853	7862	4
5	5967	5957	5947	5937	5927	5916	5906	5896	5886	3'5876	3'4733	4743	4754	4764	4775	4785	4796	4806	4817	4827	5
6	3160	3148	3136	3124	3112	3100	3088	3075	3063	4'3051	4'1680	1692	1705	1717	1730	1742	1755	1767	1780	1792	6
7	0354	0340	0325	0311	0297	0283	0269	0255	0240	5'0226	4'8626	8641	8655	8670	8685	8699	8714	8729	8743	8758	7
8	7547	7531	7515	7499	7482	7466	7450	7434	7418	5'7401	5'5573	5589	5606	5623	5640	5656	5673	5690	5706	5723	8
9	4741	4722	4704	4686	4668	4650	4631	4613	4595	6'4577	6'2519	2538	2557	2576	2595	2613	2632	2651	2670	2689	9
10	1934	1914	1894	1873	1853	1833	1813	1792	1772	7'1752	6'9466	9487	9508	9529	9550	9571	9591	9612	9633	9654	10
11	9127	9105	9083	9061	9038	9016	8994	8972	8949	7'8927	7'6412	6435	6458	6481	6504	6527	6550	6573	6596	6619	11
12	6321	6297	6272	6248	6224	6199	6175	6151	6127	8'6102	8'3359	3384	3409	3434	3459	3484	3510	3535	3560	3585	12
13	3514	3488	3462	3435	3409	3383	3356	3330	3304	9'3277	9'0306	0333	0360	0387	0414	0442	0469	0496	0523	0550	13
14	0708	0679	0651	0623	0594	0566	0538	0509	0481	10'0453	9'7252	7281	7311	7340	7369	7399	7428	7457	7486	7515	14
15	7901	7871	7840	7810	7780	7749	7719	7689	7658	10'7628	10'4199	4230	4262	4293	4324	4356	4387	4418	4450	4481	15
16	5094	5062	5030	4997	4965	4933	4901	4868	4835	11'4808	11'1145	1179	1212	1246	1279	1313	1346	1379	1413	1446	16
17	2288	2253	2219	2185	2150	2116	2081	2047	2013	12'1973	11'8092	8127	8163	8199	8234	8270	8305	8341	8376	8412	17
18	9481	9445	9408	9372	9336	9299	9263	9226	9190	12'9153	12'5039	5076	5114	5151	5189	5227	5264	5302	5339	5377	18
19	6675	6636	6598	6559	6521	6482	6444	6406	6367	13'1985	12'8025	2065	2104	2144	2184	2223	2263	2303	2343	2384	19
20	3868	3828	3787	3747	3706	3666	3625	3585	3544	14'3504	13'9932	9974	9015	9057	9099	9141	9183	9224	9266	9308	20
21	1061	1019	0976	0934	0892	0849	0807	0764	0721	15'0679	14'5878	5922	5966	6010	6054	6098	6142	6186	6229	6273	21
22	8255	8210	8166	8121	8077	8032	7987	7943	7899	15'7854	15'2825	2871	2917	2963	3009	3055	3101	3147	3193	3239	22
23	5448	5402	5355	5309	5262	5216	5169	5122	5076	16'5029	15'9771	9820	9868	9916	9964	10'012	0108	0156	0204	0252	23
24	2642	2593	2545	2496	2447	2399	2350	2302	2253	17'2204	16'6718	6768	6818	6869	6919	6969	7019	7069	7119	7169	24
25	9835	9784	9735	9683	9633	9582	9532	9481	9430	17'9380	17'3665	3717	3769	3821	3874	3926	3978	4030	4083	4135	25
26	7028	6976	6923	6871	6818	6765	6713	6660	6608	18'6555	18'0611	0666	0720	0774	0829	0883	0937	0992	1046	1100	26
27	4222	4167	4113	4058	4003	3949	3894	3839	3785	19'3730	18'7558	7614	7671	7727	7784	7840	7896	7953	8009	8066	27
28	1415	1359	1302	1245	1189	1132	1075	1019	0962	20'0905	19'4504	4563	4621	4680	4739	4797	4856	4914	4973	5031	28
29	8609	8550	8491	8433	8374	8315	8257	8198	8139	20'8080	20'1451	1512	1572	1633	1694	1754	1815	1875	1936	1996	29
30	5802	5741	5681	5620	5559	5499	5438	5377	5316	21'5256	20'8398	8460	8523	8586	8648	8711	8774	8837	8899	8962	30
31	2995	2933	2870	2807	2745	2682	2619	2556	2494	22'2431	21'5344	5409	5474	5539	5603	5668	5733	5798	5862	5927	31
32	0189	0124	0059	9995	9930	9865	9800	9736	9671	22'9606	22'2291	2358	2425	2491	2558	2625	2692	2759	2826	2893	32
33	7382	7315	7249	7182	7115	7048	6982	6915	6848	23'6781	22'9237	9306	9375	9444	9513	9582	9651	9720	9789	9858	33
34	4576	4507	4438	4369	4301	4232	4163	4094	4025	24'3956	23'6184	6255	6326	6397	6468	6539	6610	6681	6752	6823	34
35	1769	1698	1627	1557	1486	1415	1344	1273	1202	25'1132	24'3130	3204	3277	3350	3423	3496	3569	3643	3716	3789	35
36	8962	8890	8817	8744	8671	8598	8525	8453	8380	25'8307	25'0077	0152	0228	0303	0378	0453	0529	0604	0679	0754	36
37	6156	6081	6006	5931	5856	5782	5707	5632	5557	26'5482	25'7024	7101	7178	7256	7333	7410	7488	7565	7642	7720	37
38	3349	3272	3195	3119	3042	2965	2888	2811	2734	27'2657	26'3970	4050	4129	4209	4288	4367	4447	4526	4604	4683	38
39	0543	0464	0385	0306	0227	0148	0069	9990	9911	27'9832	27'0917	0998	1080	1161	1243	1325	1406	1487	1569	1650	39
40	7736	7655	7574	7493	7412	7331	7251	7170	7089	28'7007	27'7863	7947	8031	8114	8198	8282	8365	8449	8532	8616	40
41	4929	4846	4764	4681	4598	4515	4432	4349	4266	29'4183	28'4810	4896	4981	5067	5153	5239	5324	5410	5496	5581	41
42	2123	2038	1953	1868	1783	1698	1613	1528	1443	30'1358	29'1757	1844	1932	2020	2108	2196	2283	2371	2459	2546	42
43	9316	9229	9142	9055	8968	8881	8794	8707	8620	30'8533	29'8793	8793	8883	8973	9063	9153	9243	9332	9422	9512	43
44	6510	6421	6332	6243	6154	6065	5976	5886	5797	31'5708	30'5650	5742	5834	5926	6018	6110	6202	6294	6386	6477	44
45	3703	3612	3521	3430	3339	3248	3157	3066	2975	32'2883	31'2596	2690	2785	2879	2973	3067	3161	3255	3349	3443	45
46	0896	0803	0710	0617	0524	0431	0338	0245	0152	33'0059	31'9543	9639	9735	9831	9928	10'024	0120	0216	0312	0408	46
47	8090	7995	7900	7805	7710	7614	7519	7424	7329	33'7234	32'6489	6588	6686	6784	6883	6981	7079	7177	7275	7373	47
48	5283	5186	5089	4992	4895	4798	4701	4603	4506	34'4409	33'3436	3536	3637	3737	3838	3938	4038	4138	4239	4339	48
49	2477	2377	2278	2179	2080	1981	1882	1783	1683	35'1584	34'0383	0485	0588	0690	0793	0895	0997	1100	1202	1304	49
50	9670	9569	9468	9367	9266	9164	9063	8962	8861	35'8759	34'7329	7434	7538	7643	7747	7852	7956	8061	8165	8270	50
51	6863	6760	6657	6554	6451	6348	6244	6141	6038	36'5935	35'4276	4382	4489	4596	4702	4809	4916	5022	5129	5235	51
52	4056	3952	3846	3741	3636	3531	3426	3320	3215	37'3110	36'1122	1331	1440	1549	1657	1766	1875	1983	2092	2200	52
53	1250	1143	1036	0929	0821	0714	0607	0500	0392	38'0285	36'8129	8280	8391	8501	8612	8723	8834	8945	9055	9166	53
54	8443	8334	8225	8116	8007	7897	7788	7679	7570	38'7460	37'5116	5229	5341	5454	5567	5680	5793	5906	6018	6131	54
55	5637	5526	5415	5303	5192	5081	4969	4858	4747	39'4635	38'2062	2177	2292	2407	2522	2637	2752	2867	2982	3097	55
56	2830	2717	2604	2491	2377	2264	2151	2037	1924	40'1810	38'9009	9126	92								

TRAVERSE TABLES.

44°		COSINE.										SINE.										44°	
	10'	11'	12'	13'	14'	15'	16'	17'	18'	19'		10'	11'	12'	13'	14'	15'	16'	17'	18'	19'		
1	7173	7171	7169	7167	7165	7163	7161	7159	7157	7155		6967	6970	6972	6974	6976	6978	6980	6982	6984	6986		1
2	4346	4342	4338	4334	4330	4326	4322	4318	4314	4310		13935	3939	3943	3947	3952	3956	3960	3964	3968	3972		2
3	1519	1513	1507	1501	1495	1489	1483	1477	1471	2'1465		2'0902	0909	0915	0921	0927	0934	0940	0946	0952	0959		3
4	8693	8685	8676	8668	8660	8652	8644	8636	8628	2'8620		2'7870	7878	7887	7895	7903	7912	7920	7928	7937	7945		4
5	5866	5856	5846	5835	5825	5815	5805	5795	5785	3'5774		3'4837	4848	4858	4869	4879	4890	4900	4910	4921	4931		5
6	3039	3027	3015	3002	2990	2978	2966	2954	2942	4'2929		4'1805	1817	1830	1842	1855	1867	1880	1892	1905	1917		6
7	0212	0198	0184	0170	0155	0141	0127	0113	0098	5'0084		4'8772	8787	8802	8816	8831	8845	8860	8874	8889	8904		7
8	7385	7369	7353	7337	7320	7304	7288	7272	7255	5'7239		5'5740	5757	5773	5790	5807	5823	5840	5857	5873	5890		8
9	4558	4540	4522	4504	4485	4467	4449	4431	4412	6'4394		6'2707	2726	2745	2764	2782	2801	2820	2839	2857	2876		9
10	1732	1711	1691	1671	1650	1630	1610	1590	1569	7'1549		6'9675	9696	9717	9737	9758	9779	9800	9821	9842	9862		10
11	8905	8882	8860	8838	8816	8793	8771	8749	8726	7'8704		7'6642	6665	6688	6711	6734	6757	6780	6803	6826	6849		11
12	6078	6054	6029	6005	5981	5956	5932	5908	5883	8'5859		8'3610	3635	3660	3685	3710	3735	3760	3785	3810	3835		12
13	3251	3225	3198	3172	3146	3119	3093	3066	3040	9'3014		9'0577	0604	0631	0659	0686	0713	0740	0767	0794	0821		13
14	0424	0396	0367	0339	0311	0282	0254	0225	0197	10'0169		9'7545	7574	7603	7632	7661	7691	7720	7749	7778	7807		14
15	7597	7567	7537	7506	7476	7445	7415	7384	7354	10'7323		10'4512	4543	4575	4606	4637	4669	4700	4731	4762	4794		15
16	4771	4738	4706	4673	4641	4608	4576	4543	4511	11'4478		11'1480	1513	1546	1580	1613	1646	1680	1713	1746	1780		16
17	1944	1909	1875	1840	1806	1771	1737	1702	1668	12'1637		11'8447	8483	8518	8554	8589	8624	8660	8695	8731	8766		17
18	9117	9080	9044	9007	8971	8934	8898	8861	8825	12'8788		12'5415	5452	5490	5527	5565	5602	5640	5677	5715	5752		18
19	6290	6252	6213	6174	6136	6097	6059	6020	5982	13'5943		13'2382	2422	2461	2501	2541	2580	2620	2659	2699	2738		19
20	3463	3423	3382	3341	3301	3260	3220	3179	3139	14'3098		13'9350	9391	9433	9475	9516	9558	9600	9641	9683	9725		20
21	0636	0594	0551	0509	0466	0423	0381	0338	0295	15'0253		14'6317	6361	6405	6448	6492	6536	6580	6623	6667	6711		21
22	7810	7765	7720	7676	7631	7586	7542	7497	7452	15'7408		15'3285	3330	3376	3422	3468	3514	3560	3606	3651	3697		22
23	4983	4936	4889	4843	4796	4749	4703	4656	4609	16'4563		16'0252	0300	0348	0396	0444	0492	0540	0588	0636	0683		23
24	2156	2107	2059	2010	1961	1912	1864	1815	1766	17'1717		16'7219	7270	7320	7370	7420	7470	7520	7570	7620	7670		24
25	9329	9278	9228	9177	9126	9075	9025	8974	8923	17'8872		17'4187	4239	4291	4343	4396	4448	4500	4552	4604	4656		25
26	6502	6449	6397	6344	6291	6238	6186	6133	6080	18'6027		18'1154	1209	1263	1317	1371	1426	1480	1534	1588	1642		26
27	3675	3621	3566	3511	3456	3402	3347	3292	3237	19'3182		18'8122	8178	8235	8291	8347	8403	8460	8516	8572	8628		27
28	0849	0792	0735	0678	0621	0565	0508	0451	0394	20'0337		19'5089	5148	5206	5265	5323	5381	5440	5498	5556	5615		28
29	2982	2936	2889	2842	2795	2748	2701	2654	2607	20'7492		20'2057	2117	2178	2238	2299	2359	2420	2480	2540	2601		29
30	5195	5134	5073	5012	4951	4891	4830	4769	4708	21'4647		20'9024	9087	9150	9212	9275	9337	9400	9462	9525	9587		30
31	2368	2305	2242	2179	2117	2054	1991	1928	1865	22'1802		21'5992	6057	6121	6186	6250	6315	6380	6444	6509	6573		31
32	9541	9476	9411	9346	9282	9217	9152	9087	9022	22'8957		22'2959	3026	3093	3160	3226	3293	3360	3426	3493	3559		32
33	6714	6647	6580	6514	6447	6380	6313	6246	6179	23'6112		22'9927	9996	0064	0133	0202	0271	0340	0409	0477	0546		33
34	3887	3819	3750	3681	3612	3543	3474	3405	3336	24'3266		23'6894	6965	7036	7107	7178	7249	7320	7390	7461	7532		34
35	1061	0990	0919	0848	0777	0706	0635	0564	0492	25'0421		24'3862	3935	4008	4081	4154	4227	4300	4372	4445	4518		35
36	8234	8161	8088	8015	7942	7869	7796	7723	7649	25'7576		25'0829	0904	0979	1054	1130	1205	1280	1355	1430	1504		36
37	5407	5332	5257	5182	5107	5032	4957	4881	4806	26'4731		25'7797	7874	7951	8028	8105	8182	8260	8337	8414	8491		37
38	2580	2503	2426	2349	2272	2195	2118	2040	1963	27'1886		26'4764	4843	4923	5002	5081	5160	5240	5319	5398	5477		38
39	9753	9674	9595	9516	9437	9358	9279	9199	9120	27'9041		27'1732	1813	1894	1976	2057	2138	2220	2301	2382	2463		39
40	6926	6845	6764	6683	6602	6521	6440	6358	6277	28'6196		27'8699	8783	8866	8949	9033	9116	9200	9283	9366	9449		40
41	4100	4016	3933	3850	3767	3684	3601	3517	3434	29'3351		28'5667	5752	5838	5923	6009	6094	6180	6265	6350	6436		41
42	1273	1188	1102	1017	0932	0847	0762	0676	0591	30'0506		29'2634	2722	2809	2897	2984	3072	3159	3247	3334	3422		42
43	8446	8359	8272	8184	8097	8010	7923	7835	7748	30'7660		29'9602	9691	9781	9871	9960	0050	0139	0229	0319	0408		43
44	5619	5530	5441	5351	5262	5173	5084	4994	4905	31'4815		30'6569	6661	6753	6844	6936	7028	7119	7211	7303	7394		44
45	2792	2701	2610	2519	2427	2336	2245	2153	2062	32'1970		31'3537	3630	3724	3818	3912	4006	4099	4193	4287	4381		45
46	9965	9872	9779	9686	9592	9499	9405	9312	9219	32'9125		32'0504	0600	0696	0792	0888	0984	1079	1175	1271	1367		46
47	7139	7043	6948	6853	6757	6662	6566	6471	6376	33'6280		32'7472	7570	7668	7766	7864	7962	8059	8157	8255	8353		47
48	4312	4214	4117	4020	3922	3825	3727	3630	3532	34'3435		33'4439	4539	4639	4739	4839	4939	5039	5139	5239	5339		48
49	1485	1386	1286	1187	1087	0988	0888	0789	0689	35'0590		34'1406	1509	1611	1713	1815	1917	2019	2121	2223	2325		49
50	8658	8557	8455	8354	8252	8151	8049	7948	7846	35'7745		34'8374	8478	8583	8687	8791	8895	8999	9104	9208	9312		50
51	5831	5728	5624	5521	5417	5314	5210	5107	5003	36'4900		35'5341	5448	5554	5661	5767	5873	5979	6086	6192	6298		51
52	3004	2899	2794	2688	2583	2477	2371	2266	2160	37'2055		36'2309	2417	2526	2634	2743	2851	2959	3068	3176	3284		52
53	0178	0070	9963	9855	9748	9640	9532	9425	9317	37'9209		36'9276	9387	9498	9608	9719	9829	9939	0050	0160	0270		53
54	7351	7241	7132	7022	6913	6803	6693	6584	6474	38'6364		37'6244	6357	6469	6582	6694	6807	6919	7032	7144	7257		54
55	4524	4412	4301	4189	4078	3966	3854	3743	3631	39'3519		38'3211	3326	3441	3555	3670	3785	3899	4014	4128	4243		55
56	1697	1584	1470	1356	1243	1129	1015	0902	0788	40'0674		39'0179	0296	0412	0529	0646	0763	0879	0996	1113	1229		56
57	8870	8755	8639	8523	8408	8292	8176	8061	7945	40'7829		39'7146	7265	7384	7503	7622	7741	7859	7978				

TRAVERSE TABLES.

44° COSINE. SINE. 44°. Table containing trigonometric values for angles 44 degrees to 45 degrees. Columns are labeled with minutes and seconds of the angle, and rows correspond to degrees. Values are provided for cosine and sine functions. The table is split into two halves: the left half shows cosine values and the right half shows sine values, both for angles from 44° to 45°.

TRAVERSE TABLES.

44°		COSINE.										SINE.										44°
		30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	
1	7133	7130	7128	7126	7124	7122	7120	7118	7116	7114	7009	7011	7013	7015	7017	7019	7022	7024	7026	7028	1	
2	4265	4261	4257	4253	4249	4245	4241	4236	4232	4228	14018	4022	4026	4031	4035	4039	4043	4047	4051	4055	2	
3	1398	1391	1385	1379	1373	1367	1361	1355	1349	21342	21027	1034	1040	1046	1052	1058	1065	1071	1077	1083	3	
4	8530	8522	8514	8506	8497	8489	8481	8473	8465	28457	28036	8045	8053	8061	8070	8078	8086	8094	8103	8111	4	
5	5663	5652	5642	5632	5622	5612	5601	5591	5581	35571	35045	5056	5065	5077	5087	5097	5108	5118	5128	5139	5	
6	2795	2783	2771	2758	2746	2734	2722	2709	2697	42685	42055	2067	2079	2092	2104	2117	2129	2142	2154	2166	6	
7	9928	9913	9899	9885	9870	9856	9842	9828	9813	49799	49064	9078	9093	9107	9122	9136	9151	9165	9180	9194	7	
8	7060	7044	7027	7011	6995	6978	6962	6946	6929	56913	56073	6089	6106	6123	6139	6156	6172	6189	6205	6222	8	
9	4193	4174	4156	4137	4119	4101	4082	4064	4046	64027	63082	3101	3119	3138	3156	3175	3194	3212	3231	3250	9	
10	1325	1305	1284	1264	1243	1223	1203	1182	1162	71141	70091	0112	0132	0153	0174	0195	0215	0236	0257	0277	10	
11	8458	8435	8413	8390	8368	8345	8323	8300	8278	78255	77100	7123	7146	7168	7191	7214	7237	7260	7282	7305	11	
12	5590	5566	5541	5517	5492	5468	5443	5419	5394	85370	84109	4134	4159	4184	4209	4234	4258	4283	4308	4333	12	
13	2723	2696	2670	2643	2616	2590	2563	2537	2510	92484	91118	1145	1172	1199	1226	1253	1280	1307	1334	1361	13	
14	9855	9827	9798	9769	9741	9712	9684	9655	9626	99598	98127	8156	8185	8214	8243	8272	8301	8330	8359	8388	14	
15	6988	6957	6926	6896	6865	6835	6804	6773	6743	106712	105136	5168	5199	5230	5261	5292	5323	5354	5385	5416	15	
16	4120	4087	4055	4022	3990	3957	3924	3891	3859	113826	112145	2179	2212	2245	2278	2311	2344	2378	2411	2444	16	
17	1253	1218	1183	1149	1114	1079	1044	1010	9755	120940	119155	9190	9225	9260	9296	9331	9366	9401	9436	9472	17	
18	8385	8348	8312	8275	8238	8201	8165	8128	8091	128054	126164	6201	6238	6276	6313	6350	6388	6425	6462	6499	18	
19	5518	5479	5440	5401	5363	5324	5285	5246	5207	135168	133173	3212	3252	3291	3330	3370	3409	3448	3488	3527	19	
20	2650	2609	2569	2528	2487	2446	2405	2364	2323	142283	140182	0223	0265	0306	0348	0389	0431	0472	0513	0555	20	
21	9783	9740	9697	9654	9611	9568	9525	9483	9440	149397	147191	7235	7278	7322	7365	7409	7452	7496	7539	7583	21	
22	6915	6870	6825	6780	6736	6691	6646	6601	6556	156511	154200	4246	4291	4337	4383	4428	4474	4519	4565	4610	22	
23	4048	4001	3954	3907	3860	3813	3766	3719	3672	163625	161209	1257	1305	1352	1400	1448	1495	1543	1590	1638	23	
24	1180	1131	1082	1033	984	935	886	837	788	170739	168218	8268	8318	8368	8417	8467	8517	8566	8616	8666	24	
25	8313	8262	8211	8160	8109	8058	8007	7955	7904	177853	175227	5279	5331	5383	5435	5486	5538	5590	5642	5694	25	
26	5445	5392	5339	5286	5233	5180	5127	5074	5021	184967	182236	2290	2344	2398	2452	2506	2560	2614	2667	2721	26	
27	2578	2523	2468	2412	2357	2302	2247	2192	2137	192082	189246	9302	9358	9413	9469	9525	9581	9637	9693	9749	27	
28	9710	9653	9596	9539	9482	9424	9367	9310	9253	199196	196255	6313	6371	6429	6487	6545	6603	6661	6719	6777	28	
29	6843	6783	6724	6665	6606	6547	6488	6428	6369	206310	203264	3324	3384	3444	3504	3564	3624	3684	3744	3804	29	
30	3975	3914	3853	3792	3731	3670	3608	3547	3485	213424	210273	0335	0397	0459	0522	0584	0646	0708	0770	0832	30	
31	1108	1044	0981	0918	0855	0791	0728	0665	0601	220538	217282	7346	7410	7475	7539	7603	7667	7732	7796	7860	31	
32	8240	8175	8110	8044	7979	7914	7848	7783	7718	227652	224291	4357	4424	4490	4556	4623	4689	4755	4822	4888	32	
33	5373	5305	5238	5171	5103	5036	4969	4901	4834	234766	231300	1369	1437	1505	1574	1642	1711	1779	1847	1915	33	
34	2505	2436	2366	2297	2228	2158	2089	2019	1950	241880	238309	8380	8450	8521	8591	8662	8732	8802	8873	8943	34	
35	9638	9566	9495	9423	9352	9281	9209	9138	9066	248995	245318	5391	5463	5536	5609	5681	5754	5826	5899	5971	35	
36	6770	6697	6623	6550	6476	6403	6329	6256	6182	256109	252327	2402	2477	2551	2626	2701	2775	2850	2924	2999	36	
37	3903	3827	3752	3676	3601	3525	3450	3374	3298	263223	259336	9413	9490	9567	9643	9720	9797	9873	9950	10026	37	
38	1035	0958	0880	0803	0725	0648	0570	0492	0415	270337	266346	6424	6503	6582	6661	6739	6818	6897	6976	7054	38	
39	8168	8088	8009	7929	7849	7770	7690	7611	7531	277451	273355	3436	3516	3597	3678	3759	3840	3920	4001	4082	39	
40	5300	5219	5137	5055	4974	4892	4810	4729	4647	284565	280364	0447	0530	0613	0695	0778	0861	0944	1027	1110	40	
41	2433	2349	2265	2182	2098	2014	1931	1847	1763	291679	287373	7458	7543	7628	7713	7798	7883	7968	8053	8137	41	
42	9565	9480	9394	9308	9222	9137	9051	8965	8879	298793	294382	4469	4556	4643	4730	4817	4904	4991	5078	5165	42	
43	6698	6610	6522	6435	6347	6259	6171	6083	5995	305908	301391	1480	1569	1659	1748	1837	1926	2015	2104	2193	43	
44	3830	3740	3651	3561	3471	3381	3291	3202	3112	313022	308400	8491	8583	8674	8765	8856	8947	9038	9130	9221	44	
45	0963	0871	0779	0687	0595	0504	0412	0320	0228	320136	315409	5503	5596	5689	5782	5876	5969	6062	6155	6248	45	
46	8095	8001	7908	7814	7720	7626	7532	7438	7344	327250	322418	2514	2609	2704	2800	2895	2990	3086	3181	3276	46	
47	5228	5132	5036	4940	4844	4748	4652	4556	4460	334364	329427	9525	9622	9720	9817	9915	10012	10109	10207	10304	47	
48	2360	2262	2164	2066	1969	1871	1772	1674	1576	341478	336436	6536	6636	6735	6835	6934	7033	7133	7232	7332	48	
49	9493	9393	9293	9193	9093	8993	8893	8793	8693	348592	343446	3547	3649	3750	3852	3953	4055	4156	4258	4359	49	
50	6625	6523	6421	6319	6217	6115	6013	5911	5809	355707	350455	0558	0662	0766	0869	0973	1077	1180	1284	1387	50	
51	3758	3654	3550	3446	3342	3237	3133	3029	2925	362821	357464	7570	7675	7781	7887	7992	8098	8204	8309	8415	51	
52	0890	0784	0678	0572	0466	0360	0254	0147	0041	369935	364473	4581	4689	4796	4904	5012	5120	5227	5335	5443	52	
53	8023	7915	7807	7698	7590	7482	7374	7266	7157	377049	371482	1592	1702	1812	1922	2031	2141	2251	2361	2470	53	
54	5155	5045	4935	4825	4715	4604	4494	4384	4273	384163	378491	8603	8715	8827	8939	9051	9163	9274	9386	9498	54	
55	2288	2176	2063	1951	1839	1727	1614	1502	1390	391277	385500	5614	5728	5842	5956	6070	6184	6298	6412	6526	55	
56	9420	9306	9192	9078	8963	8849	8735	8620	8506	398391	392509	2625	2741	2858	2974	3090	3206	3322	3438	3553	56	
57	6553	6437	6320	6204	6088	5971	5855	5738	5622	405505	399518	9637	9755	9873	9991	1009	1027	1045	1063	1081	57	
58	3685	3567	3449	3330	3212	3094	2975	2857	2738	412620	406527	6648	6768	6888	7008	7129	7249	7369	7489	7609	58	
59	0818	0697	0577	0457	0336	0216	0095	0975	9854	419734	413536	3659	3781									



TRAVERSE TABLES.

Table with columns for Cosine and Sine values, degrees from 44 to 45, and minutes from 0 to 60. The table is organized into two main sections: Cosine (left) and Sine (right), with degree markers at the corners.

TRAVERSE TABLES.

44°													SINE.													44°
COSINE.													SINE.													44°
50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	60'	50'	51'	52'	53'	54'	55'	56'	57'	58'	59'	60'	1				
1	7092	7090	7088	7085	7083	7081	7079	7077	7075	7073		7071	7050	7053	7055	7057	7059	7061	7063	7065	7067	7069	7071	1		
2	4183	4179	4175	4171	4167	4163	4159	4154	4150	4146		4142	1'4101	4105	4109	4113	4117	4122	4126	4130	4134	4138	4142	2		
3	1275	1269	1263	1256	1250	1244	1238	1232	1226	1219		1213	2'1151	1158	1164	1170	1176	1182	1189	1195	1201	1207	1213	3		
4	8366	8358	8350	8342	8334	8325	8317	8309	8301	8292		8284	2'8202	8210	8218	8227	8235	8243	8251	8260	8268	8276	8284	4		
5	5458	5448	5438	5427	5417	5407	5396	5386	5376	5366		5355	3'5252	5263	5273	5283	5294	5304	5314	5324	5335	5345	5355	5		
6	2550	2537	2525	2513	2500	2488	2476	2463	2451	2439		2426	4'2303	2315	2328	2340	2352	2365	2377	2389	2402	2414	2426	6		
7	9641	9627	9613	9598	9584	9569	9555	9541	9526	9512		9497	4'9353	9368	9382	9397	9411	9425	9440	9454	9469	9483	9497	7		
8	6733	6716	6700	6684	6667	6651	6634	6618	6601	6585		6569	5'6404	6420	6437	6453	6470	6486	6503	6519	6536	6552	6569	8		
9	3824	3806	3788	3769	3751	3732	3714	3695	3677	3658		3640	6'3454	3473	3491	3510	3528	3547	3566	3584	3603	3621	3640	9		
10	9216	9196	9175	9155	9134	9113	9093	9072	9052	9031		9011	7'0505	0525	0546	0567	0587	0608	0628	0649	0670	0690	0711	10		
11	8008	7985	7963	7940	7917	7895	7872	7850	7827	7804		7782	7'7555	7578	7601	7623	7646	7669	7691	7714	7736	7759	7782	11		
12	5099	5075	5050	5025	5001	4976	4951	4927	4902	4877		4853	8'4606	4630	4655	4680	4705	4729	4754	4779	4803	4828	4853	12		
13	2191	2164	2138	2111	2084	2057	2031	2004	1977	1951		9'1924	9'1656	1683	1710	1737	1763	1790	1817	1844	1870	1897	1924	13		
14	9282	9254	9225	9196	9168	9139	9110	9081	9053	9024		9'8995	9'8707	8735	8764	8793	8822	8851	8880	8909	8937	8966	8995	14		
15	6374	6343	6313	6282	6251	6220	6189	6159	6128	6097		10'6066	10'5757	5788	5819	5850	5881	5912	5943	5973	6004	6035	6066	15		
16	3466	3433	3400	3367	3334	3302	3269	3236	3203	3170		11'3137	11'2808	2841	2874	2906	2939	2972	3005	3038	3071	3104	3137	16		
17	1557	1522	1488	1453	1418	1383	1348	1313	1278	1243		12'0208	11'9858	9893	9928	9963	9998	1003	1008	1013	1018	1023	1028	17		
18	7649	7612	7575	7538	7501	7464	7427	7390	7353	7316		12'7279	12'6908	6946	6983	7020	7057	7094	7131	7168	7205	7242	7279	18		
19	4741	4702	4663	4624	4585	4546	4507	4467	4428	4389		13'4350	13'3959	3998	4037	4076	4116	4155	4194	4233	4272	4311	4350	19		
20	1832	1791	1750	1709	1668	1627	1586	1545	1504	1462		14'1421	14'1009	1051	1092	1133	1174	1216	1257	1298	1339	1380	1421	20		
21	8924	8881	8838	8794	8751	8708	8665	8622	8579	8536		14'8492	14'8060	8103	8146	8190	8233	8276	8320	8363	8406	8449	8492	21		
22	6015	5970	5925	5880	5835	5790	5744	5699	5654	5609		15'5563	15'5110	5156	5201	5246	5292	5337	5382	5428	5473	5518	5563	22		
23	3107	3060	3013	2965	2918	2871	2824	2776	2729	2682		16'2635	16'2161	2208	2256	2303	2350	2398	2445	2493	2540	2587	2635	23		
24	0199	0149	0100	0051	0002	9952	9903	9854	9804	9755		16'9706	16'9211	9261	9310	9360	9409	9459	9508	9557	9607	9656	9706	24		
25	7290	7239	7188	7136	7085	7034	6982	6931	6880	6828		17'6777	17'6262	6313	6365	6416	6468	6519	6571	6622	6674	6725	6777	25		
26	4382	4328	4275	4222	4168	4115	4062	4008	3955	3901		18'3848	18'3312	3366	3419	3473	3527	3581	3634	3687	3741	3794	3848	26		
27	1473	1418	1363	1307	1252	1196	1141	1085	1030	974		19'0919	19'0363	0418	0474	0530	0585	0641	0697	0752	0808	0863	0919	27		
28	8565	8508	8450	8393	8335	8278	8220	8163	8105	8047		19'7990	19'7413	7471	7529	7586	7644	7702	7759	7817	7875	7932	7990	28		
29	5657	5597	5538	5478	5419	5359	5299	5240	5180	5121		20'5061	20'4464	4523	4583	4643	4703	4763	4822	4882	4942	5001	5061	29		
30	2748	2687	2625	2564	2502	2440	2379	2317	2255	2194		21'2132	21'1514	1576	1638	1700	1761	1823	1885	1947	2009	2071	2132	30		
31	9840	9776	9713	9649	9585	9522	9458	9394	9331	9267		21'9203	21'8565	8628	8692	8756	8820	8884	8948	9012	9076	9139	9203	31		
32	6931	6866	6800	6734	6669	6603	6537	6472	6406	6340		22'6274	22'5615	5681	5747	5813	5879	5945	6011	6077	6142	6208	6274	32		
33	4023	3955	3888	3820	3752	3684	3617	3549	3481	3413		23'3345	23'2665	2734	2802	2870	2938	3006	3074	3142	3209	3277	3345	33		
34	1115	1045	9975	0905	0836	0766	0696	0626	0556	0486		24'0416	23'9716	9786	9856	9926	9996	1006	1036	1066	1096	1126	1156	34		
35	8206	8134	8063	7991	7919	7847	7775	7703	7631	7559		24'7487	24'6766	6839	6911	6983	7055	7127	7199	7271	7343	7415	7487	35		
36	5298	5224	5150	5076	5002	4928	4854	4780	4706	4632		25'4558	25'3817	3891	3965	4040	4114	4188	4262	4336	4410	4484	4558	36		
37	2389	2314	2238	2162	2086	2010	1934	1858	1782	1706		26'1630	26'0867	0944	1020	1096	1172	1249	1325	1401	1477	1553	1630	37		
38	9481	9403	9325	9247	9169	9091	9013	8935	8857	8779		26'8701	26'7918	7996	8075	8153	8231	8309	8388	8466	8544	8622	8701	38		
39	6573	6493	6413	6333	6253	6172	6092	6012	5932	5852		27'5772	27'4968	4968	5129	5201	5290	5379	5458	5537	5616	5695	5772	39		
40	3664	3582	3500	3418	3336	3254	3172	3089	3007	2925		28'2843	28'2019	2101	2184	2266	2349	2431	2513	2596	2678	2760	2843	40		
41	0756	0672	0588	0503	0419	0335	0251	0167	0082	9998		28'9914	28'9069	9154	9238	9323	9407	9492	9576	9661	9745	9829	9914	41		
42	7847	7761	7675	7589	7503	7416	7330	7244	7158	7071		29'6985	29'6129	6206	6293	6380	6466	6553	6639	6726	6812	6898	6985	42		
43	4939	4851	4765	4674	4586	4498	4410	4324	4233	4144		30'4056	30'3170	3259	3348	3436	3525	3613	3702	3790	3879	3967	4056	43		
44	2031	1940	1850	1760	1670	1579	1489	1398	1308	1217		31'1127	31'0221	0311	0402	0493	0584	0674	0765	0855	0946	1036	1127	44		
45	9122	9030	8938	8845	8753	8661	8568	8476	8383	8291		31'7271	31'7271	7364	7457	7549	7642	7735	7828	7920	8013	8105	8198	45		
46	6214	6120	6025	5931	5836	5742	5647	5553	5458	5364		32'5269	32'4322	4416	4511	4606	4701	4796	4890	4985	5080	5175	5269	46		
47	3306	3209	3113	3016	2920	2823	2727	2630	2533	2437		33'2340	33'1372	1469	1566	1663	1760	1856	1953	2050	2147	2244	2340	47		
48	0397	0299	0200	0102	0003	9905	9806	9707	9609	9510		33'9411	33'8423	8522	8621	8719	8818	8917	9016	9115	9214	9313	9411	48		
49	7489	7388	7288	7187	7087	6986	6885	6785	6684	6583		34'6482	34'5473	5574	5574	5776	5776	5978	6079	6180	6281	6382	6482	49		
50	4580	4478	4375	4273	4170	4067	3965	3862	3759	3656		35'3533	35'2523	2627	2730	2833	2936	3039	3142	3245	3348	3451	3553	50		
51	1672	1567	1463	1358	1253	1149	1044	0939	0834	0729		36'0624	35'9574	9679	9784	9889	9995	1010	0205	0310	0415	0520	0624	51		
52	8764	8657	8550	8443	8337	8230	8123	8016	7909	7802		36'7696	36'6624	6732	6839	6946	7053	7160	7267	7374	7482	7590	7696	52		
53	5855	5746	5638	5529	5420	5311	5202	5094	4985	4876		37'4767	37'3675	3784	3893	4003	4112	4221	4330	4439	4549	4658	4767	53		
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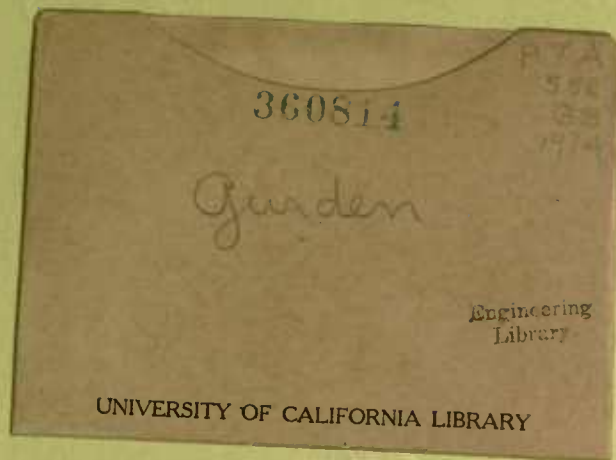
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