

六位三角函数表

中国工业出版社

六位三角函数表

三角函数值由 0° 至 90° 每隔 $10''$ 一列

Cotg 及 Cosec 由 $0^\circ 0'$ 至 $1^\circ 20'$ 每隔 $1'$ 一列

中国工业出版社

本表备有三角函数的自然值，在应用计算机进行计算时极为方便。表中除有每隔 $10''$ 一列之三角函数值外，并有每 $1''$ 一列之 $\cotg$ 及 cosec 的三角函数值和 $w'' \cdot \cotg w$ 、 $w'' \cdot \operatorname{cosec} w$ 之辅助表。

六位三角函数表

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毛主席語錄

領導我們事業的核心力量是中國共產黨。

指導我們思想的理論基礎是馬克思列寧主義。

政治工作是一切經濟工作的生命綫。在社會經濟制度發生根本變革的時期，尤其是這樣。

階級鬥爭、生產鬥爭和科學實驗，是建設社會主義強大國家的三項偉大革命運動，是使共產黨人免除官僚主義、避免修正主義和教條主義，永遠立于不敗之地的確實保證，是使無產階級能夠和廣大勞動群眾聯合起來，實行民主專政的可靠保證。

我們應該謙虛，謹慎，戒驕，戒躁，全心全意地為中國人民服務，……

抓革命、促生產、促工作、促戰備。

團結起來，爭取更大的勝利。

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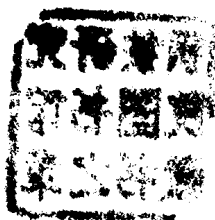


表 1

$\cotg$ 及 cosec 之三角函数值，每隔 $1'$ 一列

cotg 0°

	0'	1'	2'	3'	4'	5'	6'	7'	
0"	∞	3438	1719	1145.9	859.4	687.5	573.0	491.1	60"
1	206265	3381	1705	1139.6	855.9	685.3	571.4	489.9	59
2	103132	3327	1691	1133.3	852.3	683.0	569.8	488.8	58
3	68755	3274	1677	1127.1	848.8	680.7	568.2	487.6	57
4	51566	3223	1663	1121.0	845.3	678.5	566.7	486.5	56
5	41253	3173	1650	1114.9	841.9	676.3	565.1	485.3	55
6	34377	3125	1637	1109.0	838.5	674.1	563.6	484.2	54
7	29466	3079	1624	1103.0	835.1	671.9	562.0	483.1	53
8	25783	3033	1611	1097.2	831.7	669.7	560.5	481.9	52
9	22918	2989	1599	1091.3	828.4	667.5	559.0	480.8	51
10	20626	2947	1587	1085.6	825.1	665.4	557.5	479.7	50
11	18751	2905	1575	1079.9	821.8	663.2	556.0	478.6	49
12	17189	2865	1563	1074.3	818.5	661.1	554.5	477.5	48
13	15867	2826	1551	1068.7	815.3	659.0	553.0	476.4	47
14	14733	2787	1539	1063.2	812.1	656.9	551.5	475.3	46
15	13751	2750	1528	1057.8	808.9	654.8	550.0	474.2	45
16	12892	2714	1517	1052.4	805.7	652.7	548.6	473.1	44
17	12133	2679	1506	1047.0	802.6	650.7	547.1	472.0	43
18	11459	2644	1495	1041.7	799.5	648.6	545.7	470.9	42
19	10856	2611	1484	1036.5	796.4	646.6	544.2	469.9	41
20	10313	2578	1473	1031.3	793.3	644.6	542.8	468.8	40
21	9822	2546	1463	1026.2	790.3	642.6	541.4	467.7	39
22	9376	2515	1453	1021.1	787.3	640.6	540.0	466.7	38
23	8968	2485	1442	1016.1	784.3	638.6	538.5	465.6	37
24	8594	2456	1432	1011.1	781.3	636.6	537.1	464.6	36
25	8251	2427	1423	1006.2	778.4	634.7	535.8	463.5	35
26	7933	2398	1413	1001.3	775.4	632.7	534.4	462.5	34
27	7639	2371	1403	996.4	772.5	630.8	533.0	461.4	33
28	7367	2344	1394	991.7	769.6	628.9	531.6	460.4	32
29	7113	2318	1384	986.9	766.8	626.9	530.2	459.4	31
30	6875	2292	1375	982.2	763.9	625.0	528.9	458.4	30
31	6654	2267	1366	977.6	761.1	623.2	527.5	457.3	29
32	6446	2242	1357	972.9	758.3	621.3	526.2	456.3	28
33	6250	2218	1348	968.4	755.5	619.4	524.8	455.3	27
34	6067	2194	1339	963.9	752.8	617.6	523.5	454.3	26
35	5893	2171	1331	959.4	750.1	615.7	522.2	453.3	25
36	5730	2149	1322	954.9	747.3	613.9	520.9	452.3	24
37	5575	2126	1314	950.5	744.6	612.1	519.6	451.3	23
38	5428	2105	1305	946.2	742.0	610.3	518.3	450.4	22
39	5289	2083	1297	941.8	739.3	608.5	517.0	449.4	21
40	5157	2063	1289	937.6	736.7	606.7	515.7	448.4	20
41	5031	2042	1281	933.3	734.0	604.9	514.4	447.4	19
42	4911	2022	1273	929.1	731.4	603.1	513.1	446.5	18
43	4797	2003	1265	925.0	728.9	601.4	511.8	445.5	17
44	4688	1983	1258	920.8	726.3	599.6	510.6	444.5	16
45	4584	1964	1250	916.7	723.7	597.9	509.3	443.6	15
46	4484	1946	1243	912.7	721.2	596.1	508.0	442.6	14
47	4389	1928	1235	908.7	718.7	594.4	506.8	441.7	13
48	4297	1910	1228	904.7	716.2	592.7	505.6	440.7	12
49	4209	1892	1221	900.7	713.7	591.0	504.3	439.8	11
50	4125	1875	1213	896.8	711.3	589.3	503.1	438.9	10
51	4044	1858	1206	892.9	708.8	587.6	501.9	437.9	9
52	3967	1842	1199	889.1	706.4	586.0	500.6	437.0	8
53	3892	1825	1192	885.3	704.0	584.3	499.4	436.1	7
54	3820	1809	1185	881.5	701.6	582.7	498.2	435.2	6
55	3750	1794	1179	877.7	699.2	581.0	497.0	434.2	5
56	3683	1778	1172	874.0	696.8	579.4	495.8	433.3	4
57	3619	1763	1165	870.3	694.5	577.8	494.6	432.4	3
58	3556	1748	1159	866.7	692.2	576.2	493.5	431.5	2
59	3496	1733	1152	863.0	689.8	574.6	492.3	430.6	1
60	3438	1719	1146	859.4	687.5	573.0	491.1	429.7	0
	59'	58'	57'	56'	55'	54'	53'	52'	

11

1	1.1
2	2.2
3	3.3
4	4.4
5	5.5
6	6.6
7	7.7
8	8.8
9	9.9

17

1	1.7
2	3.4
3	5.1
4	6.8
5	8.5
6	10.2
7	11.9
8	13.6
9	15.3

22

1	2.2
2	4.4
3	6.6
4	8.8
5	11.0
6	13.2
7	15.4
8	17.6
9	19.8

26

1	2.6
2	5.2
3	7.8
4	10.4
5	13.0
6	15.6
7	18.2
8	20.8
9	23.4

30

1	3.0
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3	9.0
4	12.0
5	15.0
6	18.0
7	21.0
8	24.0
9	27.0

40

1	4.0
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6	24.0
7	28.0
8	32.0
9	36.0

50

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2	10.0
3	15.0
4	20.0
5	25.0
6	30.0
7	35.0
8	40.0
9	45.0

60

1	6.0
2	12.0
3	18.0
4	24.0
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6	36.0
7	42.0
8	48.0
9	54.0

1	1.4
2	2.8
3	4.2
4	5.6
5	7.0
6	8.4
7	9.8
8	11.2
9	12.6

1	2.0
2	4.0
3	6.0
4	8.0
5	10.0
6	12.0
7	14.0
8	16.0
9	18.0

1	2.4
2	4.8
3	7.2
4	9.6
5	12.0
6	14.4
7	16.8
8	19.2
9	21.6

1	2.8
2	5.6
3	8.4
4	11.2
5	14.0
6	16.8
7	19.6
8	22.4
9	25.2

1	3.5
2	7.0
3	10.5
4	14.0
5	17.5
6	21.0
7	24.5
8	28.0
9	31.5

1	4.5
2	9.0
3	13.5
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6	27.0
7	31.5
8	36.0
9	40.5

1	5.5
2	11.0
3	16.5
4	22.0
5	27.5
6	33.0
7	38.5
8	44.0
9	49.5

1	6.3
2	12.6
3	18.9
4	25.2
5	31.5
6	37.8
7	44.1
8	50.4
9	56.7

	0'	1'	2'	3'	4'	5'	6'	7'	60"
14	∞	3438	1719	1145.9	859.4	687.5	573.0	491.1	
1	206265	3381	1705	1139.6	855.9	685.3	571.4	489.9	59
2	103132	3327	1691	1133.3	852.3	683.0	569.8	488.8	58
3	68755	3274	1677	1127.1	848.8	680.7	568.2	487.6	57
4	51566	3223	1663	1121.0	845.3	678.5	566.7	486.5	56
5	41253	3173	1650	1114.9	841.9	676.3	565.1	485.3	55
6	34377	3125	1637	1109.0	838.5	674.1	563.6	484.2	54
7	29466	3079	1624	1103.0	835.1	671.9	562.0	483.1	53
8	25783	3033	1611	1097.2	831.7	669.7	560.5	481.9	52
9	22918	2989	1599	1091.3	828.4	667.5	559.0	480.8	51
20	20626	2947	1587	1085.6	825.1	665.4	557.5	479.7	50
11	18751	2905	1575	1079.9	821.8	663.2	556.0	478.6	49
12	17189	2865	1563	1074.3	818.5	661.1	554.5	477.5	48
13	15867	2826	1551	1068.7	815.3	659.0	553.0	476.4	47
14	14733	2787	1539	1063.2	812.1	656.9	551.5	475.3	46
15	13751	2750	1528	1057.8	808.9	654.8	550.0	474.2	45
16	12892	2714	1517	1052.4	805.7	652.7	548.6	473.1	44
17	12133	2679	1506	1047.0	802.6	650.7	547.1	472.0	43
18	11459	2644	1495	1041.7	799.5	648.6	545.7	470.9	42
19	10856	2611	1484	1036.5	796.4	646.6	544.2	469.9	41
20	10313	2578	1473	1031.3	793.3	644.6	542.8	468.8	40
21	9822	2546	1463	1026.2	790.3	642.6	541.4	467.7	39
22	9376	2515	1453	1021.1	787.3	640.6	540.0	466.7	38
23	8968	2485	1442	1016.1	784.3	638.6	538.6	465.6	37
24	8594	2456	1432	1011.1	781.3	636.6	537.1	464.6	36
25	8251	2427	1423	1006.2	778.4	634.7	535.8	463.5	35
26	7933	2398	1413	1001.3	775.4	632.7	534.4	462.5	34
27	7639	2371	1403	996.4	772.5	630.8	533.0	461.4	33
28	7367	2344	1394	991.7	769.6	628.9	531.6	460.4	32
29	7113	2318	1384	986.9	766.8	626.9	530.2	459.4	31
30	6875	2292	1375	982.2	763.9	625.0	528.9	458.4	30
31	6654	2267	1366	977.6	761.1	623.2	527.5	457.4	29
32	6446	2242	1357	972.9	758.3	621.3	526.2	456.3	28
33	6250	2218	1348	968.4	755.5	619.4	524.8	455.3	27
34	6067	2194	1339	963.9	752.8	617.6	523.5	454.3	26
35	5893	2171	1331	959.4	750.1	615.7	522.2	453.3	25
36	5730	2149	1322	954.9	747.3	613.9	520.9	452.3	24
37	5575	2126	1314	950.5	744.6	612.1	519.6	451.3	23
38	5428	2105	1305	946.2	742.0	610.3	518.3	450.4	22
39	5289	2083	1297	941.8	739.3	608.5	517.0	449.4	21
40	5157	2063	1289	937.6	736.7	606.7	515.7	448.4	20
41	5031	2042	1281	933.3	734.0	604.9	514.4	447.4	19
42	4911	2022	1273	929.1	731.4	603.1	513.1	446.5	18
43	4797	2003	1265	925.0	728.9	601.4	511.8	445.5	17
44	4688	1983	1258	920.8	726.3	599.6	510.6	444.5	16
45	4584	1964	1250	916.7	723.7	597.9	509.3	443.6	15
46	4484	1946	1243	912.7	721.2	596.1	508.0	442.6	14
47	4389	1928	1235	908.7	718.7	594.4	506.8	441.7	13
48	4297	1910	1228	904.7	716.2	592.7	505.6	440.7	12
49	4209	1892	1221	900.7	713.7	591.0	504.3	439.8	11
50	4125	1875	1213	896.8	711.3	589.3	503.1	438.9	10
51	4044	1858	1206	892.9	708.8	587.6	501.9	437.9	9
52	3967	1842	1199	889.1	706.4	586.0	500.6	437.0	8
53	3892	1825	1192	885.3	704.0	584.3	499.4	436.1	7
54	3820	1809	1185	881.5	701.6	582.7	498.2	435.2	6
55	3750	1794	1179	877.7	699.2	581.0	497.0	434.2	5
56	3683	1778	1172	874.0	696.8	579.4	495.8	433.3	4
57	3619	1763	1165	870.3	694.5	577.8	494.6	432.4	3
58	3556	1748	1159	866.7	692.2	576.2	493.5	431.5	2
59	3496	1733	1152	863.0	689.8	574.6	492.3	430.6	1
60	3438	1719	1146	859.4	687.5	573.0	491.1	429.7	0
	59'	58'	57'	56'	55'	54'	53'	52'	

cotg 0°

	8'	9'	10'	11'	12'	13'	14'	15'	
0"	429.72	381.97	343.77	312.52	286.48	264.44	245.55	229.18	60"
1	428.82	381.26	343.20	312.05	286.08	264.10	245.26	228.93	59
2	427.93	380.56	342.63	311.58	285.68	263.76	244.97	228.67	58
3	427.05	379.86	342.06	311.11	285.29	263.43	244.68	228.42	57
4	426.17	379.16	341.50	310.64	284.89	263.09	244.39	228.17	56
5	425.29	378.47	340.93	310.17	284.50	262.76	244.10	227.92	55
6	424.41	377.77	340.37	309.71	284.11	262.42	243.81	227.66	54
7	423.54	377.08	339.81	309.24	283.72	262.09	243.52	227.41	53
8	422.67	376.39	339.25	308.78	283.33	261.76	243.24	227.16	52
9	421.81	375.71	338.69	308.32	282.94	261.42	242.95	226.91	51
10	420.95	375.03	338.14	307.86	282.55	261.09	242.66	226.66	50
11	420.09	374.35	337.58	307.40	282.17	260.76	242.38	226.41	49
12	419.24	373.67	337.03	306.94	281.78	260.43	242.09	226.17	48
13	418.39	372.99	336.48	306.48	281.40	260.11	241.81	225.92	47
14	417.54	372.32	335.94	306.03	281.01	259.78	241.53	225.67	46
15	416.70	371.65	335.39	305.58	280.63	259.45	241.24	225.42	45
16	415.86	370.98	334.84	305.12	280.25	259.13	240.96	225.18	44
17	415.02	370.31	334.30	304.67	279.87	258.80	240.68	224.93	43
18	414.19	369.65	333.76	304.22	279.49	258.48	240.40	224.69	42
19	413.36	368.99	333.22	303.78	279.11	258.15	240.12	224.44	41
20	412.53	368.33	332.68	303.33	278.74	257.83	239.84	224.20	40
21	411.71	367.67	332.15	302.88	278.36	257.51	239.56	223.96	39
22	410.89	367.02	331.61	302.44	277.98	257.19	239.28	223.71	38
23	410.07	366.37	331.08	302.00	277.61	256.87	239.01	223.47	37
24	409.25	365.72	330.55	301.56	277.24	256.55	238.73	223.23	36
25	408.44	365.07	330.02	301.12	276.86	256.23	238.46	222.99	35
26	407.64	364.42	329.50	300.68	276.49	255.91	238.18	222.75	34
27	406.83	363.78	328.97	300.24	276.12	255.59	237.90	222.51	33
28	406.03	363.14	328.45	299.80	275.75	255.28	237.63	222.27	32
29	405.23	362.50	327.92	299.37	275.39	254.96	237.36	222.03	31
30	404.44	361.87	327.40	298.93	275.02	254.65	237.08	221.79	30
31	403.65	361.23	326.88	298.50	274.65	254.33	236.81	221.55	29
32	402.86	360.60	326.37	298.07	274.29	254.02	236.54	221.31	28
33	402.07	359.97	325.85	297.64	273.92	253.71	236.27	221.08	27
34	401.29	359.35	325.34	297.21	273.56	253.40	236.00	220.84	26
35	400.51	358.72	324.83	296.78	273.20	253.08	235.73	220.60	25
36	399.74	358.10	324.31	296.36	272.84	252.77	235.46	220.37	24
37	398.96	357.48	323.81	295.93	272.48	252.46	235.19	220.13	23
38	398.19	356.86	323.30	295.51	272.12	252.16	234.92	219.90	22
39	397.43	356.24	322.79	295.08	271.76	251.85	234.66	219.66	21
40	396.66	355.63	322.29	294.66	271.40	251.54	234.39	219.43	20
41	395.90	355.02	321.78	294.24	271.04	251.23	234.12	219.20	19
42	395.14	354.41	321.28	293.82	270.69	250.93	233.86	218.96	18
43	394.39	353.80	320.78	293.41	270.33	250.62	233.59	218.73	17
44	393.63	353.19	320.29	292.99	269.98	250.32	233.33	218.50	16
45	392.88	352.59	319.79	292.57	269.63	250.02	233.07	218.27	15
46	392.14	351.99	319.29	292.16	269.27	249.71	232.80	218.04	14
47	391.39	351.39	318.80	291.75	268.92	249.41	232.54	217.81	13
48	390.65	350.79	318.31	291.33	268.57	249.11	232.28	217.58	12
49	389.91	350.19	317.82	290.92	268.22	248.81	232.02	217.35	11
50	389.18	349.60	317.33	290.51	267.88	248.51	231.76	217.12	10
51	388.45	349.01	316.84	290.10	267.53	248.21	231.50	216.89	9
52	387.71	348.42	316.36	289.70	267.18	247.91	231.24	216.66	8
53	386.99	347.83	315.87	289.29	266.84	247.62	230.98	216.44	7
54	386.26	347.25	315.39	288.89	266.49	247.32	230.72	216.21	6
55	385.54	346.66	314.91	288.48	266.15	247.02	230.46	215.98	5
56	384.82	346.08	314.43	288.08	265.80	246.73	230.20	215.76	4
57	384.10	345.50	313.95	287.68	265.46	246.43	229.95	215.53	3
58	383.39	344.92	313.47	287.28	265.12	246.14	229.69	215.31	2
59	382.68	344.35	313.00	286.88	264.78	245.84	229.44	215.08	1
60	381.97	343.77	312.52	286.48	264.44	245.55	229.18	214.86	0
	51'	50'	49'	48'	47'	46'	45'	44'	

22	2.2
1	2.2
2	4.4
3	6.6
4	8.8
5	11.0
6	13.2
7	15.4
8	17.6
9	19.8

27	2.7
1	2.7
2	5.4
3	8.1
4	10.8
5	13.5
6	16.2
7	18.9
8	21.6
9	24.3

35	3.5
1	3.5
2	7.0
3	10.5
4	14.0
5	17.5
6	21.0
7	24.5
8	28.0
9	31.5

45	4.5
1	4.5
2	9.0
3	13.5
4	18.0
5	22.5
6	27.0
7	31.5
8	36.0
9	40.5

55	5.5
1	5.5
2	11.0
3	16.5
4	22.0
5	27.5
6	33.0
7	38.5
8	44.0
9	49.5

65	6.5
1	6.5
2	13.0
3	19.5
4	26.0
5	32.5
6	39.0
7	45.5
8	52.0
9	58.5

75	7.5
1	7.5
2	15.0
3	22.5
4	30.0
5	37.5
6	45.0
7	52.5
8	60.0
9	67.5

85	8.5
1	8.5
2	17.0
3	25.5
4	34.0
5	42.5
6	51.0
7	59.5
8	68.0
9	76.5

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1	2.4
2	4.8
3	7.2
4	9.6
5	12.0
6	14.4
7	16.8
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9	21.6

1	3.0
2	6.0
3	9.0
4	12.0
5	15.0
6	18.0
7	21.0
8	24.0
9	27.0

1	4.0
2	8.0
3	12.0
4	16.0
5	20.0
6	24.0
7	28.0
8	32.0
9	36.0

1	5.0
2	10.0
3	15.0
4	20.0
5	25.0
6	30.0
7	35.0
8	40.0
9	45.0

1	6.0
2	12.0
3	18.0
4	24.0
5	30.0
6	36.0
7	42.0
8	48.0
9	54.0

1	7.0
2	14.0
3	21.0
4	28.0
5	35.0
6	42.0
7	49.0
8	56.0
9	63.0

1	8.0
2	16.0
3	24.0
4	32.0
5	40.0
6	48.0
7	56.0
8	64.0
9	72.0

1	9.0
2	18.0
3	27.0
4	36.0
5	45.0
6	54.0
7	63.0
8	72.0
9	81.0

	8'	9'	10'	11'	12'	13'	14'	15'	60"
0"	429.72	381.97	343.78	312.52	286.48	264.44	245.55	229.18	205.91
1	428.83	381.27	343.20	312.05	286.08	264.10	245.26	228.93	205.59
2	427.94	380.56	342.63	311.58	285.69	263.77	244.97	228.68	205.27
3	427.05	379.86	342.06	311.11	285.29	263.43	244.68	228.42	204.95
4	426.17	379.16	341.50	310.64	284.90	263.09	244.39	228.17	204.63
5	425.29	378.47	340.93	310.17	284.50	262.76	244.10	227.92	204.31
6	424.41	377.77	340.37	309.71	284.11	262.42	243.81	227.67	203.99
7	423.54	377.08	339.81	309.24	283.72	262.09	243.52	227.42	203.67
8	422.67	376.40	339.25	308.78	283.33	261.76	243.24	227.16	203.35
9	421.81	375.71	338.69	308.32	282.94	261.43	242.95	226.91	203.03
10	420.95	375.03	338.14	307.86	282.56	261.10	242.67	226.67	202.71
11	420.09	374.35	337.59	307.40	282.17	260.77	242.38	226.42	202.39
12	419.24	373.67	337.03	306.94	281.78	260.44	242.10	226.17	202.07
13	418.39	372.99	336.48	306.49	281.40	260.11	241.81	225.92	201.75
14	417.54	372.32	335.94	306.03	281.02	259.78	241.53	225.67	201.43
15	416.70	371.65	335.39	305.58	280.63	259.45	241.25	225.43	201.11
16	415.86	370.98	334.85	305.13	280.25	259.13	240.96	225.18	200.79
17	415.02	370.31	334.30	304.68	279.87	258.80	240.68	224.94	200.47
18	414.19	369.65	333.76	304.23	279.49	258.48	240.40	224.69	200.15
19	413.36	368.99	333.22	303.78	279.11	258.15	240.12	224.45	199.83
20	412.53	368.33	332.69	303.33	278.74	257.83	239.84	224.20	199.51
21	411.71	367.67	332.15	302.89	278.36	257.51	239.56	223.96	199.19
22	410.89	367.02	331.62	302.44	277.99	257.19	239.29	223.72	198.87
23	410.07	366.37	331.08	302.00	277.61	256.87	239.01	223.47	198.55
24	409.26	365.72	330.55	301.56	277.24	256.55	238.73	223.23	198.23
25	408.45	365.07	330.02	301.12	276.87	256.23	238.46	222.99	197.91
26	407.64	364.43	329.50	300.68	276.49	255.91	238.18	222.75	197.59
27	406.83	363.78	328.97	300.24	276.12	255.60	237.91	222.51	197.27
28	406.03	363.14	328.45	299.80	275.76	255.28	237.63	222.27	196.95
29	405.24	362.50	327.93	299.37	275.39	254.96	237.36	222.03	196.63
30	404.44	361.87	327.40	298.94	275.02	254.65	237.09	221.79	196.31
31	403.65	361.23	326.89	298.50	274.65	254.33	236.81	221.55	195.99
32	402.86	360.60	326.37	298.07	274.29	254.02	236.54	221.31	195.67
33	402.08	359.97	325.85	297.64	273.92	253.71	236.27	221.08	195.35
34	401.29	359.35	325.34	297.21	273.56	253.40	236.00	220.84	195.03
35	400.51	358.72	324.83	296.78	273.20	253.09	235.73	220.60	194.71
36	399.74	358.10	324.32	296.36	272.84	252.78	235.46	220.37	194.39
37	398.97	357.48	323.81	295.93	272.48	252.47	235.19	220.13	194.07
38	398.20	356.86	323.30	295.51	272.12	252.16	234.93	219.90	193.75
39	397.43	356.24	322.79	295.09	271.76	251.85	234.66	219.67	193.43
40	396.66	355.63	322.29	294.66	271.40	251.54	234.39	219.43	193.11
41	395.90	355.02	321.79	294.24	271.05	251.24	234.13	219.20	192.79
42	395.14	354.41	321.29	293.83	270.69	250.93	233.86	218.97	192.47
43	394.39	353.80	320.79	293.41	270.33	250.63	233.60	218.73	192.15
44	393.64	353.19	320.29	292.99	269.98	250.32	233.33	218.50	191.83
45	392.89	352.59	319.79	292.57	269.63	250.02	233.07	218.27	191.51
46	392.14	351.99	319.30	292.16	269.28	249.72	232.81	218.04	191.19
47	391.39	351.39	318.80	291.75	268.92	249.41	232.54	217.81	190.87
48	390.65	350.79	318.31	291.34	268.57	249.11	232.28	217.58	190.55
49	389.91	350.20	317.82	290.92	268.23	248.81	232.02	217.35	190.23
50	389.18	349.60	317.33	290.51	267.88	248.51	231.76	217.12	189.91
51	388.45	349.01	316.84	290.11	267.53	248.21	231.50	216.89	189.59
52	387.72	348.42	316.36	289.70	267.18	247.92	231.24	216.67	189.27
53	386.99	347.83	315.87	289.29	266.84	247.62	230.98	216.44	188.95
54	386.26	347.25	315.39	288.89	266.49	247.32	230.72	216.21	188.63
55	385.54	346.66	314.91	288.48	266.15	247.02	230.46	215.98	188.31
56	384.82	346.08	314.43	288.08	265.81	246.73	230.21	215.76	187.99
57	384.11	345.50	313.95	287.68	265.46	246.43	229.95	215.53	187.67
58	383.39	344.92	313.47	287.28	265.12	246.14	229.69	215.31	187.35
59	382.68	344.35	313.00	286.88	264.78	245.85	229.44	215.08	187.03
60	381.97	343.78	312.52	286.48	264.44	245.55	229.18	214.86	186.71
	51'	50'	49'	48'	47'	46'	45'	44'	0

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	16'	17'	18'	19'	20'	21'	22'	23'	
0"	214.86	202.22	190.98	180.93	171.89	163.70	156.26	149.47	60"
1	214.63	202.02	190.81	180.77	171.74	163.57	156.14	149.36	59
2	214.41	201.82	190.63	180.62	171.60	163.44	156.02	149.25	58
3	214.19	201.63	190.46	180.46	171.46	163.31	155.90	149.14	57
4	213.97	201.43	190.28	180.30	171.31	163.18	155.79	149.03	56
5	213.74	201.23	190.10	180.14	171.17	163.05	155.67	148.93	55
6	213.52	201.04	189.93	179.98	171.03	162.92	155.55	148.82	54
7	213.30	200.84	189.75	179.83	170.89	162.80	155.43	148.71	53
8	213.08	200.65	189.58	179.67	170.75	162.67	155.32	148.60	52
9	212.86	200.45	189.41	179.51	170.61	162.54	155.20	148.50	51
10	212.64	200.26	189.23	179.36	170.46	162.41	155.08	148.39	50
11	212.42	200.06	189.06	179.20	170.32	162.28	154.97	148.28	49
12	212.21	199.87	188.89	179.05	170.18	162.16	154.85	148.18	48
13	211.99	199.67	188.71	178.89	170.04	162.03	154.74	148.07	47
14	211.77	199.48	188.54	178.74	169.90	161.90	154.62	147.96	46
15	211.55	199.29	188.37	178.58	169.76	161.77	154.50	147.86	45
16	211.34	199.10	188.20	178.43	169.62	161.65	154.39	147.75	44
17	211.12	198.90	188.02	178.27	169.48	161.52	154.27	147.65	43
18	210.90	198.71	187.85	178.12	169.35	161.39	154.16	147.54	42
19	210.69	198.52	187.68	177.97	169.21	161.27	154.04	147.44	41
20	210.47	198.33	187.51	177.81	169.07	161.14	153.93	147.33	40
21	210.26	198.14	187.34	177.66	168.93	161.02	153.81	147.22	39
22	210.04	197.95	187.17	177.51	168.79	160.89	153.70	147.12	38
23	209.83	197.76	187.00	177.35	168.65	160.77	153.58	147.01	37
24	209.62	197.57	186.83	177.20	168.52	160.64	153.47	146.91	36
25	209.40	197.38	186.66	177.05	168.38	160.52	153.35	146.81	35
26	209.19	197.19	186.49	176.90	168.24	160.39	153.24	146.70	34
27	208.98	197.00	186.33	176.75	168.10	160.27	153.13	146.60	33
28	208.77	196.82	186.16	176.59	167.97	160.14	153.01	146.49	32
29	208.56	196.63	185.99	176.44	167.83	160.02	152.90	146.39	31
30	208.35	196.44	185.82	176.29	167.69	159.89	152.79	146.28	30
31	208.14	196.25	185.66	176.14	167.56	159.77	152.67	146.18	29
32	207.93	196.07	185.49	175.99	167.42	159.65	152.56	146.08	28
33	207.72	195.88	185.32	175.84	167.28	159.52	152.45	145.97	27
34	207.51	195.70	185.16	175.69	167.15	159.40	152.34	145.87	26
35	207.30	195.51	184.99	175.54	167.01	159.28	152.22	145.77	25
36	207.09	195.32	184.82	175.39	166.88	159.15	152.11	145.66	24
37	206.88	195.14	184.66	175.24	166.74	159.03	152.00	145.56	23
38	206.68	194.96	184.49	175.10	166.61	158.91	151.89	145.46	22
39	206.47	194.77	184.33	174.95	166.47	158.79	151.77	145.36	21
40	206.26	194.59	184.16	174.80	166.34	158.66	151.66	145.25	20
41	206.06	194.40	184.00	174.65	166.21	158.54	151.55	145.15	19
42	205.85	194.22	183.83	174.50	166.07	158.42	151.44	145.05	18
43	205.65	194.04	183.67	174.36	165.94	158.30	151.33	144.95	17
44	205.44	193.86	183.51	174.21	165.81	158.18	151.22	144.85	16
45	205.24	193.67	183.34	174.06	165.67	158.06	151.11	144.74	15
46	205.03	193.49	183.18	173.91	165.54	157.93	151.00	144.64	14
47	204.83	193.31	183.02	173.77	165.41	157.81	150.89	144.54	13
48	204.63	193.13	182.86	173.62	165.27	157.69	150.78	144.44	12
49	204.42	192.95	182.70	173.48	165.14	157.57	150.67	144.34	11
50	204.22	192.77	182.53	173.33	165.01	157.45	150.56	144.24	10
51	204.02	192.59	182.37	173.18	164.88	157.33	150.45	144.14	9
52	203.82	192.41	182.21	173.04	164.75	157.21	150.34	144.04	8
53	203.62	192.23	182.05	172.89	164.61	157.09	150.23	143.94	7
54	203.42	192.05	181.89	172.75	164.48	156.97	150.12	143.84	6
55	203.21	191.87	181.73	172.60	164.35	156.85	150.01	143.74	5
56	203.01	191.69	181.57	172.46	164.22	156.73	149.90	143.64	4
57	202.82	191.52	181.41	172.32	164.09	156.62	149.79	143.54	3
58	202.62	191.34	181.25	172.17	163.96	156.50	149.68	143.44	2
59	202.42	191.16	181.09	172.03	163.83	156.38	149.57	143.34	1
60	202.22	190.98	180.93	171.89	163.70	156.26	149.47	143.24	0
	43'	42'	41'	40'	39'	38'	37'	36'	

11

1	1.1
2	2.2
3	3.3
4	4.4
5	5.5
6	6.6
7	7.7
8	8.8
9	9.9

13

1	1.3
2	2.6
3	3.9
4	5.2
5	6.5
6	7.8
7	9.1
8	10.4
9	11.7

15

1	1.5
2	3.0
3	4.5
4	6.0
5	7.5
6	9.0
7	10.5
8	12.0
9	13.5

17

1	1.7
2	3.4
3	5.1
4	6.8
5	8.5
6	10.2
7	11.9
8	13.6
9	15.3

18

1	1.8
2	3.6
3	5.4
4	7.2
5	9.0
6	10.8
7	12.6
8	14.4
9	16.2

20

1	2.0
2	4.0
3	6.0
4	8.0
5	10.0
6	12.0
7	14.0
8	16.0
9	18.0

22

1	2.2
2	4.4
3	6.6
4	8.8
5	11.0
6	13.2
7	15.4
8	17.6
9	19.8

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12	1.2
1	2.4
2	3.6
3	4.8
4	6.0
5	7.2
6	8.4
7	9.6
8	10.8

14	1.4
1	2.8
2	4.2
3	5.6
4	7.0
5	8.4
6	9.8
7	11.2
8	12.6

16	1.6
1	3.2
2	4.8
3	6.4
4	8.0
5	9.6
6	11.2
7	12.8
8	14.4

17	1.7
1	3.4
2	5.1
3	6.8
4	8.5
5	10.2
6	11.9
7	13.6
8	15.3

19	1.9
1	3.8
2	5.7
3	7.6
4	9.5
5	11.4
6	13.3
7	15.2
8	17.1

21	2.1
1	4.2
2	6.3
3	8.4
4	10.5
5	12.6
6	14.7
7	16.8
8	18.9

23	2.3
1	4.6
2	6.9
3	9.2
4	11.5
5	13.8
6	16.1
7	18.4
8	20.7

	16'	17'	18'	19'	20'	21'	22'	23'	60"
0"	214.86	202.22	190.99	180.93	171.89	163.70	156.26	149.47	
1	214.64	202.02	190.81	180.78	171.75	163.57	156.14	149.36	59
2	214.41	201.83	190.63	180.62	171.60	163.44	156.03	149.25	58
3	214.19	201.63	190.46	180.46	171.46	163.31	155.91	149.14	57
4	213.97	201.43	190.28	180.30	171.32	163.19	155.79	149.04	56
5	213.75	201.23	190.11	180.14	171.18	163.06	155.67	148.93	55
6	213.53	201.04	189.93	179.99	171.03	162.93	155.56	148.82	54
7	213.30	200.84	189.76	179.83	170.89	162.80	155.44	148.71	53
8	213.08	200.65	189.58	179.67	170.75	162.67	155.32	148.61	52
9	212.86	200.45	189.41	179.52	170.61	162.54	155.20	148.50	51
10	212.64	200.26	189.23	179.36	170.47	162.41	155.09	148.39	50
11	212.43	200.06	189.06	179.21	170.33	162.29	154.97	148.29	49
12	212.21	199.87	188.89	179.05	170.19	162.16	154.85	148.18	48
13	211.99	199.68	188.72	178.89	170.05	162.03	154.74	148.07	47
14	211.77	199.48	188.54	178.74	169.91	161.90	154.62	147.97	46
15	211.55	199.29	188.37	178.59	169.77	161.78	154.51	147.86	45
16	211.34	199.10	188.20	178.43	169.63	161.65	154.39	147.76	44
17	211.12	198.91	188.03	178.28	169.49	161.52	154.28	147.65	43
18	210.91	198.71	187.86	178.12	169.35	161.40	154.16	147.54	42
19	210.69	198.52	187.68	177.97	169.21	161.27	154.05	147.44	41
20	210.48	198.33	187.51	177.82	169.07	161.15	153.93	147.33	40
21	210.26	198.14	187.34	177.66	168.93	161.02	153.82	147.23	39
22	210.05	197.95	187.17	177.51	168.79	160.89	153.70	147.12	38
23	209.83	197.76	187.00	177.36	168.66	160.77	153.59	147.02	37
24	209.62	197.57	186.83	177.20	168.52	160.64	153.47	146.91	36
25	209.41	197.38	186.67	177.05	168.38	160.52	153.36	146.81	35
26	209.19	197.19	186.50	176.90	168.24	160.39	153.24	146.70	34
27	208.98	197.01	186.33	176.75	168.11	160.27	153.13	146.60	33
28	208.77	196.82	186.16	176.60	167.97	160.14	153.02	146.50	32
29	208.56	196.63	185.99	176.45	167.83	160.02	152.90	146.39	31
30	208.35	196.44	185.83	176.30	167.70	159.90	152.79	146.29	30
31	208.14	196.26	185.66	176.15	167.56	159.77	152.68	146.18	29
32	207.93	196.07	185.49	175.99	167.42	159.65	152.56	146.08	28
33	207.72	195.88	185.32	175.84	167.29	159.53	152.45	145.98	27
34	207.51	195.70	185.16	175.69	167.15	159.40	152.34	145.87	26
35	207.30	195.51	184.99	175.55	167.02	159.28	152.23	145.77	25
36	207.09	195.33	184.83	175.40	166.88	159.16	152.11	145.67	24
37	206.89	195.14	184.66	175.25	166.75	159.03	152.00	145.57	23
38	206.68	194.96	184.50	175.10	166.61	158.91	151.89	145.46	22
39	206.47	194.77	184.33	174.95	166.48	158.79	151.78	145.36	21
40	206.27	194.59	184.17	174.80	166.34	158.67	151.67	145.26	20
41	206.06	194.41	184.00	174.65	166.21	158.54	151.55	145.16	19
42	205.85	194.22	183.84	174.51	166.08	158.42	151.44	145.05	18
43	205.65	194.04	183.67	174.36	165.94	158.30	151.33	144.95	17
44	205.44	193.86	183.51	174.21	165.81	158.18	151.22	144.85	16
45	205.24	193.68	183.35	174.06	165.68	158.06	151.11	144.75	15
46	205.04	193.50	183.18	173.92	165.54	157.94	151.00	144.65	14
47	204.83	193.31	183.02	173.77	165.41	157.82	150.89	144.55	13
48	204.63	193.13	182.86	173.62	165.28	157.70	150.78	144.44	12
49	204.43	192.95	182.70	173.48	165.14	157.58	150.67	144.34	11
50	204.22	192.77	182.54	173.33	165.01	157.46	150.56	144.24	10
51	204.02	192.59	182.37	173.19	164.88	157.34	150.45	144.14	9
52	203.82	192.41	182.21	173.04	164.75	157.22	150.34	144.04	8
53	203.62	192.23	182.05	172.90	164.62	157.10	150.23	143.94	7
54	203.42	192.05	181.89	172.75	164.49	156.98	150.12	143.84	6
55	203.22	191.88	181.73	172.61	164.36	156.86	150.01	143.74	5
56	203.02	191.70	181.57	172.46	164.22	156.74	149.90	143.64	4
57	202.82	191.52	181.41	172.32	164.09	156.62	149.79	143.54	3
58	202.62	191.34	181.25	172.18	163.96	156.50	149.69	143.44	2
59	202.42	191.16	181.09	172.03	163.83	156.38	149.58	143.34	1
60	202.22	190.99	180.93	171.89	163.70	156.26	149.47	143.24	0
	43'	42'	41'	40'	39'	38'	37'	36'	

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	24'	25'	26'	27'	28'	29'	30'	31'	60"
0"	143.237	137.507	132.219	127.321	122.774	118.540	114.589	110.892	60"
1	138	416	134	243	701	472	525	832	59
2	143.038	324	132.049	164	628	404	461	773	58
3	142.939	233	131.965	127.086	555	336	398	713	60
4	840	142	880	126.008	482	268	335	654	59
5	741	137.051	796	930	410	201	271	595	56
6	643	136.960	712	851	337	133	208	535	55
7	544	869	628	774	264	118.065	145	476	54
8	446	778	544	696	192	117.998	082	417	53
9	347	687	460	618	120	930	114.019	358	52
10	142.249	136.597	131.376	126.540	122.047	117.863	113.956	110.299	51
11	151	506	293	463	121.975	795	893	240	59
12	142.053	416	209	385	903	728	830	181	49
13	141.956	326	126	308	831	661	767	122	48
14	858	236	131.042	230	759	594	704	064	47
15	760	146	130.959	153	687	527	642	110.005	58
16	663	136.056	876	126.076	616	460	579	109.946	46
17	566	135.966	793	125.999	544	393	516	888	59
18	469	877	710	922	472	326	454	829	43
19	372	787	627	845	401	260	392	771	42
20	141.275	135.698	130.545	125.769	121.329	117.193	113.329	109.712	41
21	178	609	462	692	258	127	267	654	59
22	141.082	520	380	615	187	117.060	205	596	58
23	140.985	431	297	539	116	116.994	143	537	39
24	889	342	215	463	121.045	927	081	479	38
25	793	253	133	386	120.974	861	113.019	421	37
26	697	165	130.051	310	903	795	112.957	363	36
27	601	135.076	129.969	234	832	729	895	305	35
28	505	134.988	887	158	761	663	833	247	34
29	409	899	805	082	691	597	772	190	33
30	140.314	134.811	129.724	125.006	120.620	116.531	112.710	109.132	32
31	218	723	642	124.931	549	465	648	074	31
32	123	635	561	855	479	399	587	109.016	58
33	140.028	547	479	779	409	334	526	108.959	29
34	139.933	460	398	704	338	268	464	901	28
35	838	372	317	629	268	203	403	844	27
36	743	285	236	553	198	137	342	786	26
37	649	197	155	478	128	072	281	729	25
38	554	110	129.074	403	120.058	116.007	219	672	24
39	460	134.023	128.994	328	119.988	115.941	158	615	23
40	139.366	133.936	128.913	124.253	119.919	115.876	112.097	108.557	22
41	272	849	832	178	849	811	112.037	500	21
42	178	762	752	104	779	746	111.976	443	58
43	139.084	675	672	124.029	710	681	915	386	57
44	138.990	589	591	123.955	640	616	854	329	19
45	896	502	511	880	571	552	794	272	18
46	803	416	431	806	502	487	733	216	17
47	710	330	351	731	433	422	673	159	16
48	616	243	272	657	363	358	612	102	15
49	523	157	192	583	294	293	552	108.046	14
50	138.430	133.072	128.112	123.509	119.225	115.229	111.492	107.989	13
51	338	132.986	128.033	435	157	165	431	932	12
52	245	900	127.953	361	088	100	371	876	11
53	152	814	874	288	119.019	115.036	311	820	56
54	138.060	729	795	214	118.950	114.972	251	763	8
55	137.967	644	716	140	882	908	191	707	7
56	875	558	637	123.067	813	844	131	651	6
57	783	473	558	122.994	745	780	071	595	5
58	691	388	479	920	677	716	111.011	539	4
59	599	303	400	847	608	652	110.952	482	3
60	137.507	132.219	127.321	122.774	118.540	114.589	110.892	107.426	2
	35'	34'	33'	32'	31'	30'	29'	28'	0

56

1	5.6
2	11.2
3	16.8
4	22.4
5	28.0
6	33.6
7	39.2
8	44.8
9	50.4

61

1	6.1
2	12.2
3	18.3
4	24.4
5	30.5
6	36.6
7	42.7
8	48.8
9	54.9

67

1	6.7
2	13.4
3	20.1
4	26.8
5	33.5
6	40.2
7	46.9
8	53.6
9	60.3

73

1	7.3
2	14.6
3	21.9
4	29.2
5	36.5
6	43.8
7	51.1
8	58.4
9	65.7

79

1	7.9
2	15.8
3	23.7
4	31.6
5	39.5
6	47.4
7	55.3
8	63.2
9	71.1

85

1	8.5
2	17.0
3	25.5
4	34.0
5	42.5
6	51.0
7	59.5
8	68.0
9	76.5

91

1	9.1
2	18.2
3	27.3
4	36.4
5	45.5
6	54.6
7	63.7
8	72.8
9	81.9

97

1	9.7
2	19.4
3	29.1
4	38.8
5	48.5
6	58.2
7	67.9
8	77.6
9	87.3

	24'	25'	26'	27'	28'	29'	30'	31'	60"
0"	143.241	137.511	132.222	127.325	122.778	118.544	114.593	110.897	60
58	100	92	84	78	73	68	64	60	59
1 5.8	1 141	99 419	91 138	85 247	79 705	73 476	68 529	63 837	60 59
2 11.6	2 143.042	99 328	91 132.053	84 168	78 632	73 408	68 466	63 777	60 58
3 17.4	3 142.943	99 237	91 131.969	84 090	78 559	73 340	68 402	63 718	59 57
4 23.2	4 844	99 145	91 884	84 127.012	78 486	72 273	67 339	63 659	59 56
5 29.0	5 745	99 137.054	91 800	84 126.934	78 414	72 205	68 276	63 599	60 55
6 34.8	6 646	99 136.963	91 716	84 855	79 341	73 137	68 212	64 540	59 54
7 40.6	7 548	99 872	90 632	84 777	77 269	73 069	68 149	63 481	59 53
8 46.4	8 449	99 782	90 548	84 700	77 196	73 118.002	67 086	63 422	59 52
9 52.2	9 351	98 691	91 464	84 622	78 124	72 117.934	68 114.023	63 363	59 51
64	98	91	84	78	72	67	63	59	50
1 6.4	10 142.253	98 136.600	90 131.380	84 126.544	77 122.052	73 117.867	67 113.960	63 110.304	59 50
2 12.8	11 155	98 510	90 296	83 467	78 121.979	72 800	68 897	63 245	59 49
3 19.2	12 142.057	98 420	90 213	83 389	77 907	72 732	67 834	63 186	59 48
4 25.6	13 141.959	98 330	90 130	83 312	78 835	72 665	67 771	62 127	59 47
5 32.0	14 861	98 240	90 131.046	84 234	78 763	72 598	67 709	62 068	59 46
6 38.4	15 764	97 150	90 130.963	83 157	77 692	71 531	67 646	63 110.009	59 45
7 44.8	16 667	97 136.060	90 880	83 080	77 620	72 464	67 583	62 109.951	59 44
8 51.2	17 569	97 135.970	90 797	83 126.003	77 548	72 397	67 521	62 892	59 43
9 57.6	18 472	97 881	89 714	83 125.926	77 477	71 331	66 458	63 834	58 42
70	19 375	97 791	90 631	83 849	77 405	72 264	67 396	62 775	59 41
1 7.0	20 141.278	97 135.702	89 130.549	82 125.773	76 121.334	71 117.197	67 113.334	62 109.717	58 40
2 14.0	21 182	96 613	89 466	82 696	77 262	72 131	66 272	62 659	58 39
3 21.0	22 141.085	97 523	90 384	82 619	77 191	71 117.064	67 209	63 600	59 38
4 28.0	23 140.989	96 434	89 301	83 543	76 120	71 116.998	66 147	62 542	58 37
5 35.0	24 892	96 346	88 219	82 467	76 121.049	71 932	66 085	62 484	58 36
6 42.0	25 796	96 257	89 137	82 390	77 120.978	71 865	67 113.023	62 426	58 35
7 49.0	26 700	96 168	89 130.055	82 314	76 120.907	71 799	66 112.961	62 368	58 34
8 56.0	27 604	96 135.080	88 129.973	82 238	76 836	71 733	66 900	61 310	58 33
9 63.0	28 509	96 134.991	88 891	82 162	76 765	71 667	66 838	62 252	58 32
76	29 413	96 903	88 809	82 086	76 695	70 601	66 776	62 194	58 31
1 7.6	30 140.317	96 134.815	88 129.728	81 125.010	76 120.624	71 116.535	66 112.714	62 109.136	58 30
2 15.2	31 222	95 727	88 646	82 124.935	75 554	70 469	66 653	61 079	57 29
3 22.8	32 127	95 639	88 565	81 859	76 483	71 404	65 591	62 109.021	58 28
4 30.4	33 140.032	95 551	88 483	82 783	76 413	70 338	66 530	61 108.963	58 27
5 38.0	34 139.937	95 463	88 402	81 708	75 343	70 272	66 469	61 906	57 26
6 45.6	35 842	95 376	87 321	81 633	75 272	71 207	65 407	62 848	58 25
7 53.2	36 747	95 288	88 240	81 557	76 202	70 142	65 346	61 791	57 24
8 60.8	37 652	94 201	87 159	81 482	75 132	70 076	66 285	61 734	57 23
9 68.4	38 558	94 114	87 129.078	81 407	75 120.062	70 116.011	65 224	61 676	58 22
82	39 464	94 134.026	88 128.997	81 332	75 119.993	69 115.946	65 163	61 619	57 21
1 8.8	40 139.369	95 133.939	87 128.917	80 124.257	75 119.923	70 115.881	65 112.102	61 108.562	57 20
2 16.4	41 275	94 853	87 836	80 182	74 853	69 815	65 112.041	61 505	57 19
3 24.0	42 181	94 766	87 756	80 108	75 784	70 750	64 111.980	61 448	57 18
4 31.6	43 139.087	94 679	87 676	80 124.033	75 714	70 686	64 919	61 391	57 17
5 39.2	44 138.994	93 592	87 595	81 123.959	74 645	69 621	65 859	60 334	57 16
6 46.8	45 900	93 506	86 515	80 884	75 575	70 556	65 798	61 277	57 15
7 54.4	46 807	93 420	86 435	80 810	74 506	69 491	65 738	60 220	57 14
8 62.0	47 713	94 333	87 355	80 735	75 437	69 427	64 677	61 163	57 13
9 69.6	48 620	93 247	86 275	80 661	74 368	69 362	65 617	60 107	56 12
88	49 527	93 161	86 196	79 587	74 299	69 298	64 556	61 108.050	57 11
1 9.4	50 138.434	93 133.075	86 128.116	80 123.513	74 119.230	69 115.233	65 111.496	60 107.994	56 10
2 17.0	51 341	93 132.990	86 128.037	80 439	74 161	69 169	64 436	60 937	56 9
3 24.6	52 248	92 904	86 127.957	80 365	74 092	69 105	64 376	60 881	56 8
4 32.2	53 156	92 818	85 878	79 292	73 119.023	69 115.040	65 315	61 824	57 7
5 39.8	54 138.063	92 733	85 799	80 218	73 118.955	69 114.976	64 255	60 768	56 6
6 47.4	55 137.971	92 647	85 719	80 145	73 886	69 912	64 195	60 712	57 5
7 55.0	56 879	92 562	85 640	79 123.071	74 818	68 848	64 136	59 655	57 4
8 62.6	57 787	92 477	85 561	79 122.998	73 749	69 784	64 076	60 599	56 3
9 70.2	58 695	92 392	85 483	79 924	73 681	68 720	63 111.016	60 543	56 2
94	59 603	92 307	85 404	79 851	73 613	68 657	64 110.956	59 487	56 1
1 9.9	60 137.511	92 132.222	85 127.325	79 122.778	73 118.544	69 114.593	64 110.897	59 107.431	56 0
2 17.5	35'	34'	33'	32'	31'	30'	29'	28'	0

cotg 0°

	32'	33'	34'	35'	36'	37'	38'	39'	60'	
0"	107.426	104.171	101.107	98.218	95.489	92.908	90.463	88.144		35
1	371	118	057	171	445	867	424	106	59	1 3.5
2	315	066	101.008	124	401	825	384	068	58	2 7.0
3	259	104.013	100.958	078	357	783	344	88.031	57	3 10.5
4	203	103.961	909	098	313	741	305	87.993	56	4 14.0
5	147	909	860	97.985	269	700	265	956	55	5 17.5
6	092	856	810	938	225	658	226	918	54	6 21.0
7	107.036	804	761	892	181	616	186	881	53	7 24.5
8	106.981	752	712	845	137	575	147	843	52	8 28.0
9	925	700	663	799	093	533	108	806	51	9 31.5
10	106.870	103.647	100.614	97.752	95.049	92.492	90.068	87.768	50	37
11	814	595	565	706	95.006	450	90.029	731	49	1 3.7
12	759	543	516	660	94.962	409	89.990	694	48	2 7.4
13	704	491	467	614	918	368	950	657	47	3 11.1
14	649	440	418	567	875	326	911	619	46	4 14.8
15	594	388	369	521	831	285	872	582	45	5 18.5
16	539	336	320	475	787	244	833	545	44	6 22.2
17	484	284	271	429	744	202	794	508	43	7 25.9
18	429	232	223	383	700	161	755	471	42	8 29.6
19	374	181	174	337	657	120	716	434	41	9 33.3
20	106.319	103.129	100.125	97.291	94.613	92.079	89.677	87.397	40	39
21	264	078	077	245	570	92.038	638	360	39	1 3.9
22	209	103.026	100.028	200	527	91.997	599	323	38	2 11.7
23	155	102.975	99.980	154	483	956	560	286	37	3 15.6
24	100	923	931	108	440	915	521	249	36	4 19.5
25	106.046	872	883	062	397	874	482	212	35	5 23.4
26	105.991	821	834	97.017	354	833	443	175	34	6 27.3
27	937	769	786	96.971	311	792	405	138	33	7 31.2
28	882	718	738	926	267	751	366	101	32	8 35.1
29	828	667	690	880	224	710	327	064	31	9 38.9
30	105.774	102.616	99.641	96.834	94.181	91.670	89.288	87.028	30	41
31	719	565	593	789	138	629	250	86.991	29	1 4.1
32	665	514	545	744	095	588	211	954	28	2 8.2
33	611	463	497	698	052	548	173	918	27	3 12.3
34	557	412	449	653	94.010	507	134	881	26	4 16.4
35	503	361	401	608	93.967	466	096	845	25	5 20.5
36	449	311	353	562	924	426	057	808	24	6 24.6
37	395	260	306	517	881	385	89.019	771	23	7 28.7
38	341	209	258	472	838	345	88.980	735	22	8 32.8
39	288	159	210	427	796	304	942	698	21	9 36.9
40	105.234	102.108	99.162	96.382	93.753	91.264	88.903	86.662	20	43
41	180	057	115	337	711	224	865	626	19	1 4.3
42	127	102.007	067	292	668	183	827	589	18	2 8.6
43	073	101.957	99.020	247	625	143	789	553	17	3 12.9
44	105.020	906	98.972	202	583	103	750	517	16	4 17.2
45	104.966	856	925	157	541	062	712	480	15	5 21.5
46	913	806	877	112	498	91.022	674	444	14	6 25.8
47	859	755	830	068	456	90.982	636	408	13	7 30.1
48	806	705	782	96.023	413	942	598	372	12	8 34.4
49	753	655	735	95.978	371	902	560	336	11	9 38.7
50	104.700	101.605	98.688	95.934	93.329	90.862	88.522	86.299	10	46
51	647	555	641	889	287	822	484	263	9	1 4.6
52	594	505	594	844	245	782	446	227	8	2 9.2
53	541	455	546	800	202	742	408	191	7	3 13.8
54	488	405	499	755	160	702	370	155	6	4 18.4
55	435	355	452	711	118	662	332	119	5	5 23.0
56	382	306	405	667	076	622	295	083	4	6 27.6
57	329	256	358	622	93.034	583	257	047	3	7 32.2
58	276	206	312	578	92.992	543	219	86.011	2	8 36.8
59	224	156	265	534	950	503	181	85.976	1	9 41.4
60	104.171	101.107	98.218	95.489	92.908	90.463	88.144	85.940	0	54
	27'	26'	25'	24'	23'	22'	21'	20'		1 5.4

cos ec 0°

1	3.6
2	7.2
3	10.8
4	14.4
5	18.0
6	21.6
7	25.2
8	28.8
9	32.4

38

1	3.8
2	7.6
3	11.4
4	15.2
5	19.0
6	22.8
7	26.6
8	30.4
9	34.2

40

1	4.0
2	8.0
3	12.0
4	16.0
5	20.0
6	24.0
7	28.0
8	32.0
9	36.0

42

1	4.2
2	8.4
3	12.6
4	16.8
5	21.0
6	25.2
7	29.4
8	33.6
9	37.8

44

1	4.4
2	8.8
3	13.2
4	17.6
5	22.0
6	26.4
7	30.8
8	35.2
9	39.6

48

1	4.8
2	9.6
3	14.4
4	19.2
5	24.0
6	28.8
7	33.6
8	38.4
9	43.2

52

1	5.2
2	10.4
3	15.6
4	20.8
5	26.0
6	31.2
7	36.4
8	41.6
9	46.8

56

1	5.6
2	11.2
3	16.8
4	22.4
5	28.0
6	33.6
7	39.2
8	44.8
9	50.4

	32'	33'	34'	35'	36'	37'	38'	39'	60"
0"	107.431	104.176	101.112	98.223	95.495	92.914	90.469	88.149	86.000
1	375	123	062	176	451	872	429	112	59
2	319	071	101.013	130	406	830	390	074	58
3	264	104.018	100.963	083	362	788	350	88.036	57
4	208	103.966	914	98.036	318	747	310	87.999	56
5	152	913	865	97.990	274	705	271	961	55
6	096	861	815	943	230	663	231	924	54
7	107.041	809	766	897	186	622	192	886	53
8	106.985	757	717	850	142	580	153	849	52
9	930	704	668	804	098	539	113	812	51
10	106.875	103.652	100.619	97.758	95.055	92.497	90.074	87.774	85.500
11	819	600	570	711	95.011	456	90.035	737	49
12	764	548	521	665	94.967	414	89.995	700	48
13	709	496	472	619	923	373	956	662	47
14	653	444	423	573	880	332	917	625	46
15	598	392	374	526	836	290	878	588	45
16	543	341	325	480	793	249	838	551	44
17	488	289	276	434	749	208	799	513	43
18	433	237	228	388	706	167	760	476	42
19	378	186	179	342	662	125	721	439	41
20	106.324	103.134	100.130	97.296	94.619	92.084	89.682	87.402	85.200
21	269	082	082	251	575	043	643	365	39
22	214	103.031	100.033	205	532	92.002	604	328	38
23	159	102.980	99.985	159	489	91.961	565	291	37
24	105	928	936	113	445	920	527	254	36
25	100.050	877	888	068	402	879	488	217	35
26	105.996	826	839	97.022	359	838	449	181	34
27	941	774	791	96.976	316	797	410	144	33
28	887	723	743	931	273	757	371	107	32
29	833	672	695	885	230	716	333	070	31
30	105.778	102.621	99.647	96.840	94.187	91.675	89.294	87.033	84.800
31	724	570	598	794	144	634	255	86.997	29
32	670	519	550	749	101	594	217	960	28
33	616	468	502	703	058	553	178	923	27
34	562	417	454	658	94.015	512	140	887	26
35	508	366	406	613	93.972	472	101	850	25
36	454	316	359	568	929	431	063	814	24
37	400	265	311	522	887	391	89.024	777	23
38	346	214	263	477	844	350	88.986	741	22
39	292	163	215	432	801	310	947	704	21
40	105.239	102.113	99.167	96.387	93.759	91.269	88.909	86.668	84.400
41	185	062	120	342	716	229	871	631	19
42	131	102.012	072	297	673	189	833	595	18
43	078	101.961	99.025	252	631	148	794	559	17
44	105.024	911	98.977	207	588	108	756	522	16
45	104.971	861	930	162	546	068	718	486	15
46	918	811	882	118	504	91.028	680	450	14
47	864	760	835	073	461	90.988	642	414	13
48	811	710	788	96.028	419	948	604	377	12
49	758	660	740	95.983	377	907	566	341	11
50	104.705	101.610	98.693	95.939	93.334	90.867	88.528	86.305	84.100
51	651	560	646	894	292	827	490	269	9
52	598	510	599	850	250	787	452	233	8
53	545	460	552	805	208	747	414	197	7
54	492	410	504	761	166	708	376	161	6
55	439	360	457	716	124	668	338	125	5
56	387	310	410	672	082	628	300	089	4
57	334	261	364	628	93.040	588	262	053	3
58	281	211	317	583	92.998	548	225	80.017	2
59	228	161	270	539	956	509	187	85.981	1
60	104.176	101.112	98.223	95.495	92.914	90.469	88.149	85.946	83.700
	27'	26'	25'	24'	23'	22'	21'	20'	0

sec 89°

11

cotg 0°

	40'	41'	42'	43'	44'	45'	46'	47'	60"	
0"	85.940	83.844	81.847	79.943	78.126	76.390	74.729	73.139		25
1	904	809	815	912	097	362	702	113	59	1 2.5
2	868	775	782	881	067	333	675	087	58	2 5.0
3	832	741	750	851	038	305	648	061	57	3 7.5
4	797	707	717	820	78.008	277	621	035	56	4 10.0
5	761	673	685	789	77.979	249	594	73.010	55	5 12.5
6	725	639	653	758	949	221	567	72.984	54	6 15.0
7	690	606	620	727	920	192	540	958	53	7 17.5
8	654	572	588	696	890	164	513	932	52	8 20.0
9	619	538	556	665	861	136	486	906	51	9 22.5
10	85.583	83.504	81.524	79.635	77.831	76.108	74.459	72.881	50	27
11	548	470	491	604	802	080	432	855	49	1 2.7
12	512	436	459	573	773	052	406	829	48	2 5.4
13	477	403	427	543	743	76.024	379	803	47	3 8.1
14	441	369	395	512	714	75.996	352	778	46	4 10.8
15	406	335	363	481	685	968	325	752	45	5 13.5
16	371	302	331	451	656	940	298	726	44	6 16.2
17	335	268	299	420	626	912	272	701	43	7 18.9
18	300	234	267	389	597	884	245	675	42	8 21.6
19	265	201	234	359	568	856	218	649	41	9 24.3
20	85.229	83.167	81.203	79.328	77.539	75.828	74.191	72.624	40	29
21	194	134	171	298	510	800	165	598	39	1 2.9
22	159	100	139	267	481	773	138	573	38	2 5.8
23	124	067	107	237	452	745	111	547	37	3 8.7
24	089	033	075	207	422	717	085	522	36	4 11.6
25	054	83.000	043	176	393	689	058	496	35	5 14.5
26	85.019	82.967	81.011	146	364	661	032	471	34	6 17.4
27	84.984	933	80.979	115	335	634	74.005	445	33	7 20.3
28	949	900	948	085	306	606	73.979	420	32	8 23.2
29	914	867	916	055	277	578	952	394	31	9 26.1
30	84.879	82.833	80.884	79.024	77.248	75.550	73.926	72.369	30	31
31	844	800	852	78.994	219	523	899	344	29	1 3.1
32	809	767	821	964	191	495	873	318	28	2 6.2
33	774	734	789	934	162	468	846	293	27	3 9.3
34	739	700	757	904	133	440	820	268	26	4 12.4
35	704	667	726	873	104	412	793	242	25	5 15.5
36	670	634	694	843	075	385	767	217	24	6 18.6
37	635	601	663	813	046	357	740	192	23	7 21.7
38	600	568	631	783	77.018	330	714	166	22	8 24.8
39	565	535	600	753	76.989	302	688	141	21	9 27.9
40	84.531	82.502	80.568	78.723	76.960	75.275	73.661	72.116	20	33
41	496	469	537	693	931	247	635	091	19	1 3.3
42	462	436	505	663	903	220	609	066	18	2 6.6
43	427	403	474	633	874	192	583	040	17	3 9.9
44	392	370	442	603	845	165	556	72.015	16	4 13.2
45	358	337	411	573	817	138	530	71.990	15	5 16.5
46	323	304	380	543	788	110	504	965	14	6 19.8
47	289	271	348	513	760	083	478	940	13	7 23.1
48	255	239	317	483	731	056	452	915	12	8 26.4
49	220	206	286	453	703	028	425	890	11	9 29.7
50	84.186	82.173	80.255	78.423	76.674	75.001	73.399	71.865	10	35
51	151	140	223	394	646	74.974	373	840	9	1 3.5
52	117	108	192	364	617	946	347	815	8	2 7.0
53	083	075	161	334	589	919	321	790	7	3 10.5
54	049	042	130	304	560	892	295	765	6	4 14.0
55	84.014	82.010	099	275	532	865	269	740	5	5 17.5
56	83.980	81.977	068	245	503	838	243	715	4	6 21.0
57	946	945	037	215	475	810	217	690	3	7 24.5
58	912	912	80.005	186	447	783	191	665	2	8 28.0
59	878	880	79.974	156	418	756	165	640	1	9 31.5
60	83.844	81.847	79.943	78.126	76.390	74.729	73.139	71.615	0	
	19'	18'	17'	16'	15'	14'	13'	12'		