

И. 別捷爾斯

40

六位三角函數表

三角函數值由 0° 至 90° 每隔 $10''$ 一列

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

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六位三角函数表

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表 I

Cotg 及 Cosec 之三角函數值,每隔 1"一列

	0'	1'	2'	3'	4'	5'	6'	7'	
0"	∞	3438							
1	206265	3381	57	1719	14	1145.9	63	859.4	35
2	103132	3327	54	1691	14	1133.3	63	855.9	36
3	68755	3274	53	1677	14	1127.1	62	852.3	35
4	51566	3223	51	1663	13	1121.0	61	848.8	35
5	41253	3173	50	1650	14	1114.9	61	845.3	34
6	34377	3125	48	1637	13	1109.0	59	841.9	34
7	29466	3079	46	1624	13	1103.0	60	838.5	34
8	25783	3033	46	1611	13	1097.2	58	835.1	34
9	22918	2989	44	1599	12	1091.3	59	831.7	33
10	20626	2947	42	1587	12	1085.6	57	828.4	33
11	18751	2905	42	1575	12	1079.9	57	825.1	33
12	17189	2865	40	1563	12	1074.3	56	821.8	33
13	15867	2826	39	1551	12	1068.7	56	818.5	33
14	14733	2787	39	1539	12	1063.2	55	815.3	32
15	13751	2750	37	1528	11	1057.8	54	812.1	32
16	12892	2714	36	1517	11	1052.4	54	808.9	32
17	12133	2679	35	1506	11	1047.0	54	805.7	32
18	11459	2644	35	1506	11	1047.0	53	802.6	31
19	10856	2611	33	1495	11	1041.7	52	799.5	31
20	10313	2578	33	1484	11	1036.5	52	796.4	31
21	9822	2546	32	1473	11	1031.3	52	793.3	31
22	9376	2515	32	1463	10	1026.2	51	790.3	30
23	8968	2485	31	1453	10	1021.1	51	787.3	30
24	8594	2456	30	1442	11	1016.7	50	784.3	30
25	8251	2427	29	1432	10	1011.1	50	781.3	30
26	7933	2398	29	1423	9	1006.2	49	778.4	29
27	7639	2371	29	1413	9	1001.3	49	775.4	30
28	7367	2344	27	1403	10	996.4	49	772.5	29
29	7113	2318	26	1394	9	991.7	47	769.6	29
30	6875	2292	26	1384	9	986.9	48	766.8	28
31	6654	2267	26	1375	9	982.2	47	763.9	29
32	6446	2242	25	1366	9	977.6	46	761.1	28
33	6250	2218	25	1357	9	972.9	47	758.3	28
34	6067	2194	24	1348	9	968.4	45	755.5	28
35	5893	2171	24	1339	9	963.9	45	752.8	27
36	5730	2149	23	1331	8	959.4	45	750.1	27
37	5575	2126	22	1322	9	954.9	45	747.3	28
38	5428	2105	23	1314	9	950.5	44	744.6	27
39	5289	2083	21	1305	9	950.5	43	742.0	26
40	5157	2063	22	1297	8	946.2	44	740.0	27
41	5031	2042	20	1289	8	941.8	44	739.3	27
42	4911	2022	20	1281	8	937.6	42	736.7	26
43	4797	2003	19	1273	8	933.3	43	734.0	27
44	4688	1983	20	1265	8	929.1	42	731.4	26
45	4584	1964	19	1258	7	925.0	41	728.9	25
46	4484	1946	19	1250	7	920.8	42	726.3	26
47	4389	1928	18	1243	8	916.7	41	723.7	26
48	4297	1910	18	1235	7	912.7	40	721.2	25
49	4209	1892	18	1228	8	912.7	40	721.2	25
50	4125	1875	17	1221	7	908.7	40	718.7	25
51	4044	1858	17	1213	7	904.7	40	716.2	25
52	3967	1842	16	1206	7	900.7	40	713.7	25
53	3892	1825	16	1199	8	896.8	39	711.3	24
54	3820	1809	15	1192	7	892.9	39	708.8	25
55	3750	1794	15	1185	7	889.1	38	706.4	24
56	3683	1778	14	1179	6	885.3	38	704.0	24
57	3619	1763	14	1172	6	881.5	38	701.6	24
58	3556	1748	13	1165	7	877.7	37	699.2	24
59	3496	1733	13	1159	7	874.0	37	696.8	23
60	3438	1719	12	1152	6	870.3	36	694.5	23
				1146		866.7	37	692.2	24
						863.0	36	689.8	23
						859.4	36	687.5	23

11	1	1.1
1	1	1.1
2	2	2.2
3	3	3.3
4	4	4.4
5	5	5.5
6	6	6.6
7	7	7.7
8	8	8.8
9	9	9.9
17	1	1.7
1	1	1.7
2	2	3.4
3	3	5.1
4	4	6.8
5	5	8.5
6	6	10.2
7	7	11.9
8	8	13.6
9	9	15.3
22	1	2.2
1	1	2.2
2	2	4.4
3	3	6.6
4	4	8.8
5	5	11.0
6	6	13.2
7	7	15.4
8	8	17.6
9	9	19.8
26	1	2.6
1	1	2.6
2	2	5.2
3	3	7.8
4	4	10.4
5	5	13.0
6	6	15.6
7	7	18.2
8	8	20.8
9	9	23.4
30	1	3.0
1	1	3.0
2	2	6.0
3	3	9.0
4	4	12.0
5	5	15.0
6	6	18.0
7	7	21.0
8	8	24.0
9	9	27.0
40	1	4.0
1	1	4.0
2	2	8.0
3	3	12.0
4	4	16.0
5	5	20.0
6	6	24.0
7	7	28.0
8	8	32.0
9	9	36.0
50	1	5.0
1	1	5.0
2	2	10.0
3	3	15.0
4	4	20.0
5	5	25.0
6	6	30.0
7	7	35.0
8	8	40.0
9	9	45.0
60	1	6.0
1	1	6.0
2	2	12.0
3	3	18.0
4	4	24.0
5	5	30.0
6	6	36.0
7	7	42.0
8	8	48.0
9	9	54.0

14

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

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

24

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

28

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

35

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

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

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

63

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"
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	538.6	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'	

	8'	9'	10'	11'	12'	13'	14'	15'	
0'	429.72	381.97	343.77	312.52	285.48	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	286.68	263.76	244.97	228.67	58
3	427.05	379.86	342.06	311.11	287.29	263.43	244.68	228.42	57
4	426.17	379.16	341.50	310.64	287.89	263.09	244.39	228.17	56
5	425.29	378.47	340.93	310.17	288.49	262.76	244.10	227.92	55
6	424.41	377.77	340.37	309.71	289.11	262.42	243.81	227.66	54
7	423.54	377.08	339.81	309.24	289.72	262.09	243.52	227.41	53
8	422.67	376.39	339.25	308.78	290.33	261.76	243.24	227.16	52
9	421.81	375.71	338.69	308.32	290.94	261.42	242.95	226.91	51
10	420.95	375.03	338.14	307.86	291.55	261.09	242.66	226.66	50
11	420.09	374.35	337.58	307.40	292.17	260.76	242.38	226.41	49
12	419.24	373.67	337.03	306.94	292.78	260.43	242.09	226.17	48
13	418.39	372.99	336.48	306.48	293.39	260.11	241.81	225.92	47
14	417.54	372.32	335.94	306.03	294.01	259.78	241.53	225.67	46
15	416.70	371.65	335.39	305.58	294.63	259.45	241.24	225.42	45
16	415.86	370.98	334.84	305.12	295.25	259.13	240.96	225.18	44
17	415.02	370.31	334.30	304.67	295.87	258.80	240.68	224.93	43
18	414.19	369.65	333.76	304.22	296.49	258.48	240.40	224.69	42
19	413.36	368.99	333.22	303.78	297.11	258.15	240.12	224.44	41
20	412.53	368.33	332.68	303.33	297.74	257.83	239.84	224.20	40
21	411.71	367.67	332.15	302.88	298.36	257.51	239.56	223.96	39
22	410.89	367.02	331.61	302.44	298.98	257.19	239.28	223.71	38
23	410.07	366.37	331.08	302.00	299.61	256.87	239.01	223.47	37
24	409.25	365.72	330.55	301.56	300.24	256.55	238.73	223.23	36
25	408.44	365.07	330.02	301.12	300.87	256.23	238.46	222.99	35
26	407.64	364.42	329.50	300.68	301.50	255.91	238.18	222.75	34
27	406.83	363.78	328.97	300.24	302.12	255.59	237.90	222.51	33
28	406.03	363.14	328.45	299.80	302.75	255.28	237.63	222.27	32
29	405.23	362.50	327.92	299.37	303.38	254.96	237.36	222.03	31
30	404.44	361.87	327.40	298.93	304.01	254.65	237.08	221.79	30
31	403.65	361.23	326.88	298.50	304.65	254.33	236.81	221.55	29
32	402.86	360.60	326.37	298.07	305.29	254.02	236.54	221.31	28
33	402.07	359.97	325.85	297.64	305.93	253.71	236.27	221.08	27
34	401.29	359.35	325.34	297.21	306.57	253.40	236.00	220.84	26
35	400.51	358.72	324.83	296.78	307.21	253.09	235.73	220.60	25
36	399.74	358.10	324.31	296.36	307.85	252.77	235.46	220.37	24
37	398.96	357.48	323.81	295.93	308.49	252.46	235.19	220.13	23
38	398.19	356.86	323.30	295.51	309.13	252.15	234.92	219.90	22
39	397.43	356.24	322.79	295.08	309.77	251.85	234.66	219.66	21
40	396.66	355.63	322.29	294.66	310.41	251.54	234.39	219.43	20
41	395.90	355.02	321.78	294.24	311.05	251.23	234.12	219.20	19
42	395.14	354.41	321.28	293.82	311.69	250.93	233.86	218.96	18
43	394.39	353.80	320.78	293.41	312.33	250.62	233.59	218.73	17
44	393.63	353.19	320.29	292.99	312.97	250.32	233.33	218.50	16
45	392.88	352.59	319.79	292.57	313.61	250.02	233.07	218.27	15
46	392.14	351.99	319.29	292.16	314.25	249.71	232.80	218.04	14
47	391.39	351.39	318.80	291.75	314.89	249.41	232.54	217.81	13
48	390.65	350.79	318.31	291.33	315.53	249.11	232.28	217.58	12
49	389.91	350.19	317.82	290.92	316.17	248.81	232.02	217.35	11
50	389.18	349.60	317.33	290.51	316.81	248.51	231.76	217.12	10
51	388.45	349.01	316.84	290.10	317.45	248.21	231.50	216.89	9
52	387.71	348.42	316.36	289.70	318.09	247.91	231.24	216.66	8
53	386.99	347.83	315.87	289.29	318.73	247.62	230.98	216.44	7
54	386.26	347.25	315.39	288.89	319.37	247.32	230.72	216.21	6
55	385.54	346.66	314.91	288.48	320.01	247.02	230.46	215.98	5
56	384.82	346.08	314.43	288.08	320.65	246.73	230.20	215.76	4
57	384.10	345.50	313.95	287.68	321.29	246.43	229.95	215.53	3
58	383.39	344.92	313.47	287.28	321.93	246.14	229.69	215.31	2
59	382.68	344.35	313.00	286.88	322.57	245.84	229.44	215.08	1
60	381.97	343.77	312.52	286.48	323.21	245.55	229.18	214.86	0
	51'	50'	49'	48'	47'	46'	45'	44'	

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
27	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	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	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	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	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	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	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

24

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

30

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

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

50

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

60

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

70

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

80

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

90

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'									
0"	429.72	89	381.97	70	343.78	58	312.52	47	286.48	40	264.44	34	245.55	29	229.18	25	60
1	428.83	89	381.27	71	343.20	57	312.05	47	286.08	39	264.10	33	245.26	29	228.93	25	59
2	427.94	89	380.56	70	342.63	57	311.58	47	285.69	40	263.77	34	244.97	29	228.68	25	58
3	427.05	88	379.86	70	342.06	56	311.11	47	285.29	39	263.43	34	244.68	29	228.42	25	57
4	426.17	88	379.16	69	341.50	57	310.64	47	284.90	40	263.09	33	244.39	29	228.17	25	56
5	425.29	88	378.47	70	340.93	56	310.17	46	284.50	39	262.76	34	244.10	29	227.92	25	55
6	424.41	87	377.77	69	340.37	56	309.71	47	284.11	39	262.42	33	243.81	29	227.67	25	54
7	423.54	87	377.08	68	339.81	56	309.24	47	283.72	39	262.09	33	243.52	28	227.42	25	53
8	422.67	86	376.40	69	339.25	56	308.78	46	283.33	39	261.76	33	243.24	29	227.16	25	52
9	421.81	86	375.71	68	338.69	55	308.32	46	282.94	38	261.43	33	242.95	28	226.91	25	51
10	420.95	86	375.03	68	338.14	55	307.86	46	282.56	38	261.10	33	242.67	28	226.67	24	50
11	420.09	85	374.35	68	337.59	55	307.40	46	282.17	39	260.77	33	242.38	29	226.42	25	49
12	419.24	85	373.67	68	337.03	55	306.94	45	281.78	38	260.44	33	242.10	29	226.17	25	48
13	418.39	85	372.99	67	336.48	54	306.49	46	281.40	38	260.11	33	241.81	28	225.92	25	47
14	417.54	84	372.32	67	335.94	54	306.03	45	281.02	39	259.78	33	241.53	28	225.67	25	46
15	416.70	84	371.65	67	335.39	54	305.58	45	280.63	38	259.45	33	241.25	29	225.43	25	45
16	415.86	84	370.98	67	334.85	54	305.13	45	280.25	38	259.13	33	240.96	28	225.18	24	44
17	415.02	83	370.31	66	334.30	54	304.68	45	279.87	38	258.80	32	240.68	28	224.94	25	43
18	414.19	83	369.65	66	333.76	54	304.23	45	279.49	38	258.48	33	240.40	28	224.69	25	42
19	413.36	83	368.99	66	333.22	54	303.78	45	279.11	37	258.15	32	240.12	28	224.45	25	41
20	412.53	83	368.33	66	332.69	53	303.33	45	278.74	38	257.83	32	239.84	28	224.20	24	40
21	411.71	82	367.67	65	332.15	53	302.89	44	278.36	37	257.51	32	239.56	27	223.96	24	39
22	410.89	82	367.02	65	331.62	53	302.44	44	277.99	38	257.19	32	239.29	28	223.72	25	38
23	410.07	81	366.37	65	331.08	54	302.00	44	277.61	37	256.87	32	239.01	28	223.47	25	37
24	409.26	81	365.72	65	330.55	53	301.56	44	277.24	37	256.55	32	238.73	28	223.23	24	36
25	408.45	81	365.07	64	330.02	52	301.12	44	276.87	38	256.23	32	238.46	28	222.99	24	35
26	407.64	81	364.43	65	329.50	53	300.68	44	276.49	37	255.91	31	238.18	27	222.75	24	34
27	406.83	80	363.78	64	328.97	52	300.24	44	276.12	36	255.60	32	237.91	28	222.51	24	33
28	406.03	79	363.14	64	328.45	52	299.80	43	275.76	37	255.28	32	237.63	27	222.27	24	32
29	405.24	80	362.50	63	327.93	52	299.37	43	275.39	37	254.96	32	237.36	27	222.03	24	31
30	404.44	80	361.87	63	327.40	53	298.94	43	275.02	37	254.65	31	237.09	27	221.79	24	30
31	403.65	79	361.23	63	326.89	52	298.50	44	274.65	37	254.33	32	236.81	28	221.55	24	29
32	402.86	78	360.60	63	326.37	52	298.07	43	274.29	37	254.02	31	236.54	27	221.31	23	28
33	402.08	79	359.97	62	325.85	51	297.64	43	273.92	36	253.71	31	236.27	27	221.08	24	27
34	401.29	78	359.35	63	325.34	51	297.21	43	273.56	36	253.40	31	236.00	27	220.84	24	26
35	400.51	78	358.72	62	324.83	51	296.78	42	273.20	36	253.09	31	235.73	27	220.60	24	25
36	399.74	77	358.10	62	324.32	51	296.36	43	272.84	36	252.78	31	235.46	27	220.37	24	24
37	398.97	77	357.48	62	323.81	51	295.93	42	272.48	36	252.47	31	235.19	26	220.13	23	23
38	398.20	77	356.86	62	323.30	51	295.51	42	272.12	36	252.16	31	234.93	27	219.90	23	22
39	397.43	77	356.24	61	322.79	50	295.09	43	271.76	36	251.85	31	234.66	27	219.67	23	21
40	396.66	77	355.63	61	322.29	50	294.66	42	271.40	35	251.54	30	234.39	26	219.43	23	20
41	395.90	76	355.02	61	321.79	50	294.24	41	271.05	36	251.24	31	234.13	27	219.20	23	19
42	395.14	75	354.41	61	321.29	50	293.83	42	270.69	36	250.93	31	233.86	26	218.97	23	18
43	394.39	75	353.80	61	320.79	50	293.41	42	270.33	35	250.63	31	233.60	27	218.73	23	17
44	393.64	75	353.19	60	320.29	50	292.99	42	269.98	35	250.32	30	233.33	26	218.50	23	16
45	392.89	75	352.59	60	319.79	49	292.57	41	269.63	35	250.02	30	233.07	26	218.27	23	15
46	392.14	75	351.99	60	319.30	50	292.16	41	269.28	36	249.72	31	232.81	27	218.04	23	14
47	391.39	74	351.39	60	318.80	50	291.75	41	268.92	35	249.41	30	232.54	26	217.81	23	13
48	390.65	74	350.79	59	318.31	49	291.34	42	268.57	34	249.11	30	232.28	26	217.58	23	12
49	389.91	74	350.20	59	317.82	49	290.92	41	268.23	35	248.81	30	232.02	26	217.35	23	11
50	389.18	73	349.60	60	317.33	49	290.51	41	267.88	35	248.51	30	231.76	26	217.12	23	10
51	388.45	73	349.01	59	316.84	48	290.11	40	267.53	35	248.21	29	231.50	26	216.89	22	9
52	387.72	73	348.42	59	316.36	49	289.70	41	267.18	34	247.92	30	231.24	26	216.67	23	8
53	386.99	73	347.83	58	315.87	48	289.29	40	266.84	35	247.62	30	230.98	26	216.44	23	7
54	386.26	72	347.25	59	315.39	48	288.89	40	266.49	34	247.32	30	230.72	26	216.21	23	6
55	385.54	72	346.66	58	314.91	48	288.48	40	266.15	34	247.02	29	230.46	25	215.98	22	5
56	384.82	71	346.08	58	314.43	48	288.08	40	265.81	35	246.73	30	230.21	26	215.76	22	4
57	384.11	72	345.50	58	313.95	48	287.68	40	265.46	34	246.43	29	229.95	26	215.53	22	3
58	383.39	71	344.92	57	313.47	47	287.28	40	265.12	34	246.14	29	229.69	25	215.31	22	2
59	382.68	71	344.35	57	313.00	47	286.88	40	264.78	34	245.85	30	229.44	26	215.08	22	1
60	381.97	71	343.78	57	312.52	48	286.48	40	264.44	34	245.55	30	229.18	26	214.86	22	0
	51'	50'	49'	48'	47'	46'	45'	44'									

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

11

1	1.1
2	2.3
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

12	1.2
2	2.4
3	3.6
4	4.8
5	6.0
6	7.2
7	8.4
8	9.6
9	10.8

14	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

16	1.6
2	3.2
3	4.8
4	6.4
5	8.0
6	9.6
7	11.2
8	12.8
9	14.4

17	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

19	1.9
2	3.8
3	5.7
4	7.6
5	9.5
6	11.4
7	13.3
8	15.2
9	17.1

21	2.1
2	4.2
3	6.3
4	8.4
5	10.5
6	12.6
7	14.7
8	16.8
9	18.9

23	2.3
2	4.6
3	6.9
4	9.2
5	11.5
6	13.8
7	16.1
8	18.4
9	20.7

	16'	17'	18'	19'	20'	21'	22'	23'	
0°	214.86	202.22	190.99	180.93	171.89	163.70	156.26	149.47	60°
1	214.64	202.02	190.81	180.78	171.75	163.57	156.14	149.36	59
2	214.44	201.83	190.63	180.62	171.60	163.44	155.91	149.25	58
3	214.19	201.63	190.46	180.46	171.46	163.31	155.79	149.14	57
4	213.97	201.43	190.28	180.30	171.32	163.19	155.67	149.04	56
5	213.75	201.23	190.11	180.14	171.18	163.06	155.56	148.93	55
6	213.53	201.04	189.93	179.99	171.03	162.93	155.44	148.82	54
7	213.30	200.84	189.76	179.83	170.89	162.80	155.32	148.71	53
8	213.08	200.65	189.58	179.67	170.75	162.67	155.20	148.61	52
9	212.86	200.45	189.41	179.52	170.61	162.54	155.09	148.50	51
10	212.64	200.26	189.23	179.36	170.47	162.41	154.97	148.39	50
11	212.43	200.06	189.06	179.21	170.33	162.29	154.85	148.29	49
12	212.21	199.87	188.89	179.05	170.19	162.16	154.74	148.18	48
13	211.99	199.68	188.72	178.89	170.05	162.03	154.62	148.07	47
14	211.77	199.48	188.54	178.74	169.91	161.90	154.51	147.97	46
15	211.55	199.29	188.37	178.59	169.77	161.78	154.39	147.86	45
16	211.34	199.10	188.20	178.43	169.63	161.65	154.28	147.76	44
17	211.12	198.91	188.03	178.28	169.49	161.52	154.16	147.65	43
18	210.91	198.71	187.86	178.12	169.35	161.40	154.05	147.54	42
19	210.69	198.52	187.68	177.97	169.21	161.27	153.93	147.44	41
20	210.48	198.33	187.51	177.82	169.07	161.15	153.82	147.33	40
21	210.26	198.14	187.34	177.66	168.93	161.02	153.70	147.23	39
22	210.05	197.95	187.17	177.51	168.79	160.89	153.59	147.12	38
23	209.83	197.76	187.00	177.36	168.66	160.77	153.47	147.02	37
24	209.62	197.57	186.83	177.20	168.52	160.64	153.36	146.91	36
25	209.41	197.38	186.67	177.05	168.38	160.52	153.24	146.81	35
26	209.19	197.19	186.50	176.90	168.24	160.39	153.13	146.70	34
27	208.98	197.01	186.33	176.75	168.11	160.27	153.02	146.60	33
28	208.77	196.82	186.16	176.60	167.97	160.14	152.90	146.50	32
29	208.56	196.63	185.99	176.45	167.83	160.02	152.79	146.39	31
30	208.35	196.44	185.83	176.30	167.70	159.90	152.68	146.29	30
31	208.14	196.26	185.66	176.15	167.56	159.77	152.56	146.18	29
32	207.93	196.07	185.49	175.99	167.42	159.65	152.45	146.08	28
33	207.72	195.88	185.32	175.84	167.29	159.53	152.34	145.98	27
34	207.51	195.70	185.16	175.69	167.15	159.40	152.23	145.87	26
35	207.30	195.51	184.99	175.55	167.02	159.28	152.11	145.77	25
36	207.09	195.33	184.83	175.40	166.88	159.16	152.00	145.67	24
37	206.89	195.14	184.66	175.25	166.75	159.03	151.89	145.57	23
38	206.68	194.96	184.50	175.10	166.61	158.91	151.78	145.46	22
39	206.47	194.77	184.33	174.95	166.48	158.79	151.67	145.36	21
40	206.27	194.59	184.17	174.80	166.34	158.67	151.55	145.26	20
41	206.06	194.41	184.00	174.65	166.21	158.54	151.44	145.16	19
42	205.85	194.22	183.84	174.51	166.08	158.42	151.33	145.05	18
43	205.65	194.04	183.67	174.36	165.94	158.30	151.22	144.95	17
44	205.44	193.86	183.51	174.21	165.81	158.18	151.11	144.85	16
45	205.24	193.68	183.35	174.06	165.68	158.06	151.00	144.75	15
46	205.04	193.50	183.18	173.92	165.54	157.94	150.89	144.65	14
47	204.83	193.31	183.02	173.77	165.41	157.82	150.78	144.55	13
48	204.63	193.13	182.86	173.62	165.28	157.70	150.67	144.44	12
49	204.43	192.95	182.70	173.48	165.14	157.58	150.56	144.34	11
50	204.22	192.77	182.54	173.33	165.01	157.46	150.45	144.24	10
51	204.02	192.59	182.37	173.19	164.88	157.34	150.34	144.14	9
52	203.82	192.41	182.21	173.04	164.75	157.22	150.23	144.04	8
53	203.62	192.23	182.05	172.90	164.62	157.10	150.12	143.94	7
54	203.42	192.05	181.89	172.75	164.49	156.98	150.01	143.84	6
55	203.22	191.88	181.73	172.61	164.36	156.86	149.90	143.74	5
56	203.02	191.70	181.57	172.46	164.22	156.74	149.79	143.64	4
57	202.82	191.52	181.41	172.32	164.09	156.62	149.69	143.54	3
58	202.62	191.34	181.25	172.18	163.96	156.50	149.58	143.44	2
59	202.42	191.16	181.09	172.03	163.83	156.38	149.47	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'	

	24'	25'	26'	27'	28'	29'	30'	31'	
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	57
4	840	142	880	126.008	482	268	335	654	56
5	741	137.051	796	84	410	201	271	595	55
6	643	136.960	712	851	337	133	208	535	54
7	544	869	628	774	264	118.065	145	476	53
8	446	778	544	696	192	117.998	082	417	52
9	347	687	460	618	120	930	114.019	358	51
10	142.249	136.597	131.376	126.540	122.047	117.863	113.956	110.299	50
11	151	506	293	463	121.975	795	893	240	49
12	142.053	416	209	385	903	728	830	181	48
13	141.956	326	126	308	831	661	767	122	47
14	858	236	131.042	230	759	594	704	064	46
15	760	146	130.959	153	687	527	642	110.005	45
16	663	136.056	876	126.076	616	460	579	109.946	44
17	566	135.966	793	125.999	544	393	516	888	43
18	469	877	710	922	472	326	454	829	42
19	372	787	627	845	401	260	392	771	41
20	141.275	135.698	130.545	125.769	121.329	117.193	113.329	109.712	40
21	178	609	462	692	258	127	267	654	39
22	141.082	520	380	615	187	117.060	205	596	38
23	140.985	431	297	539	116	116.994	143	537	37
24	889	342	215	463	121.045	927	081	479	36
25	793	253	133	386	120.974	861	113.019	421	35
26	697	165	130.051	310	903	795	112.957	363	34
27	601	135.076	129.969	234	832	729	895	305	33
28	505	134.988	887	158	761	663	833	247	32
29	409	899	805	082	691	597	772	190	31
30	140.314	134.811	129.724	125.006	120.620	116.531	112.710	109.132	30
31	218	723	642	124.931	549	465	648	074	29
32	123	635	561	855	479	399	587	109.016	28
33	140.028	547	479	779	409	334	526	108.959	27
34	139.933	460	398	704	338	268	464	901	26
35	838	372	317	629	268	203	403	844	25
36	743	285	236	553	198	137	342	786	24
37	649	197	155	478	128	072	281	729	23
38	554	110	129.074	403	120.058	116.007	219	672	22
39	460	134.023	128.994	328	119.988	115.941	158	615	21
40	139.366	133.936	128.913	124.253	119.919	115.876	112.097	108.557	20
41	272	849	832	178	849	811	112.037	500	19
42	178	762	752	104	779	746	111.976	443	18
43	139.084	675	672	124.029	710	681	915	386	17
44	138.990	589	591	123.955	640	616	854	329	16
45	896	502	511	880	571	552	794	272	15
46	803	416	431	806	502	487	733	216	14
47	710	330	351	731	433	422	673	159	13
48	616	243	272	657	363	358	612	102	12
49	523	157	192	583	294	293	552	108.046	11
50	138.430	133.072	128.112	123.509	119.225	115.229	111.492	107.989	10
51	338	132.986	128.033	435	157	165	431	932	9
52	245	900	127.953	361	088	100	371	876	8
53	152	814	874	288	119.019	115.036	311	820	7
54	138.060	729	795	214	118.950	114.972	251	763	6
55	137.967	644	716	140	882	908	191	707	5
56	875	558	637	123.067	813	844	131	651	4
57	783	473	558	122.994	745	780	071	595	3
58	691	388	479	920	677	716	111.011	539	2
59	599	303	400	847	608	652	110.952	482	1
60	137.507	132.219	127.321	122.774	118.540	114.589	110.892	107.426	0
	35'	34'	33'	32'	31'	30'	29'	28'	

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

58
1 58
2 11.6
3 17.4
4 23.2
5 29.0
6 34.8
7 40.6
8 46.4
9 52.2

64
1 6.4
2 12.8
3 19.2
4 25.6
5 32.0
6 38.4
7 44.8
8 51.2
9 57.6

70
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

76
1 7.6
2 15.2
3 22.8
4 30.4
5 38.0
6 45.6
7 53.2
8 60.8
9 68.4

82
1 8.2
2 16.4
3 24.6
4 32.8
5 41.0
6 49.2
7 57.4
8 65.6
9 73.8

88
1 8.8
2 17.6
3 26.4
4 35.2
5 44.0
6 52.8
7 61.6
8 70.4
9 79.2

94
1 9.4
2 18.8
3 28.2
4 37.6
5 47.0
6 56.4
7 65.8
8 75.2
9 84.6

99
1 9.9
2 19.8
3 29.7
4 39.6
5 49.5
6 59.4
7 69.3
8 79.2
9 89.1

	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
1	141	419	138	247	705	476	529	837	59
2	143.042	328	132.053	168	632	408	466	777	58
3	142.943	237	131.969	090	559	340	402	718	57
4	844	145	884	127.012	486	273	339	659	56
5	745	137.054	800	126.934	414	205	276	599	55
6	646	136.963	716	855	341	137	212	540	54
7	548	872	632	777	269	069	149	481	53
8	449	782	548	700	196	118.002	086	422	52
9	351	691	464	622	124	117.934	063	363	51
10	142.253	136.600	131.380	126.544	122.052	117.867	113.960	110.304	50
11	155	510	296	467	121.979	800	897	245	49
12	142.057	420	213	389	907	732	834	186	48
13	141.959	330	130	312	835	665	771	127	47
14	861	240	131.046	234	763	598	709	068	46
15	764	150	130.963	157	692	531	646	110.009	45
16	667	136.060	880	080	620	464	583	109.951	44
17	569	135.970	797	126.003	548	397	521	892	43
18	472	881	714	125.926	477	331	458	834	42
19	375	791	631	849	405	264	396	775	41
20	141.278	135.702	130.549	125.773	121.334	117.197	113.334	109.717	40
21	182	613	466	696	262	131	272	659	39
22	141.085	523	384	619	191	117.064	209	600	38
23	140.989	434	301	543	120	116.998	147	542	37
24	892	346	219	467	121.049	932	085	484	36
25	796	257	137	390	120.978	865	113.023	426	35
26	700	168	130.055	314	907	799	112.961	368	34
27	604	135.080	129.973	238	836	733	900	310	33
28	509	134.991	891	162	765	667	838	252	32
29	413	903	809	086	695	601	776	194	31
30	140.317	134.815	129.728	125.010	120.624	116.535	112.714	109.136	30
31	222	727	646	124.935	554	469	653	079	29
32	127	639	565	859	483	404	591	109.021	28
33	140.032	551	483	783	413	338	530	108.963	27
34	139.937	463	402	708	343	272	469	906	26
35	842	376	321	633	272	207	407	848	25
36	747	288	240	557	202	142	346	791	24
37	652	201	159	482	132	076	285	734	23
38	558	114	129.078	407	120.062	116.011	224	676	22
39	464	134.026	128.997	332	119.993	115.946	163	619	21
40	139.369	133.939	128.917	124.257	119.923	115.881	112.102	108.562	20
41	275	853	836	182	853	815	112.041	505	19
42	181	766	756	108	784	750	111.980	448	18
43	139.087	679	676	124.033	714	686	919	391	17
44	138.994	592	595	123.959	645	621	859	334	16
45	900	506	515	884	575	556	798	277	15
46	807	420	435	810	506	491	738	220	14
47	713	333	355	735	437	427	677	163	13
48	620	247	275	661	368	362	617	107	12
49	527	161	196	587	299	298	556	108.050	11
50	138.434	133.075	128.116	123.513	119.230	115.233	111.496	107.994	10
51	341	132.990	128.037	439	161	169	436	937	9
52	248	904	127.957	365	092	105	376	881	8
53	156	818	878	292	119.023	115.040	315	824	7
54	138.063	733	799	218	118.955	114.976	255	768	6
55	137.971	647	719	145	886	912	195	712	5
56	879	562	640	123.071	818	848	136	655	4
57	787	477	561	122.998	749	784	076	599	3
58	695	392	483	924	681	720	111.016	543	2
59	603	307	404	851	613	657	110.956	487	1
60	137.511	132.222	127.325	122.778	118.544	114.593	110.897	107.431	0
	35'	34'	33'	32'	31'	30'	29'	28'	

	32'	33'	34'	35'	36'	37'	38'	39'	
0°	107.426	104.171	101.107	98.218	95.489	92.908	90.463	88.144	60°
1	371	55	52	47	44	41	39	38	59
2	315	56	52	47	44	42	40	38	58
3	259	56	53	46	44	42	40	37	57
4	203	56	52	46	44	42	40	37	56
5	147	56	52	46	44	41	39	37	55
6	092	55	53	47	44	42	39	37	54
7	107.036	55	52	47	44	41	39	38	53
8	106.981	55	52	47	44	42	39	37	52
9	925	56	52	46	44	42	39	37	51
10	106.870	55	53	47	44	41	40	38	50
11	814	56	52	46	43	42	39	37	49
12	759	55	52	46	44	41	39	37	48
13	704	55	51	46	43	42	39	37	47
14	649	55	52	46	44	41	39	37	46
15	594	55	52	46	44	41	39	37	45
16	539	55	52	46	43	42	39	37	44
17	484	55	52	46	44	41	39	37	43
18	429	55	51	46	44	41	39	37	42
19	374	55	52	46	43	42	39	37	41
20	106.319	55	52	46	44	41	39	37	40
21	264	55	51	46	43	42	39	37	39
22	209	55	52	46	43	41	39	37	38
23	155	55	52	46	44	41	39	37	37
24	100	55	51	46	43	42	39	37	36
25	106.046	54	51	46	43	41	39	37	35
26	105.991	55	52	46	43	41	39	37	34
27	937	54	51	46	43	41	39	37	33
28	882	55	51	46	44	41	39	37	32
29	828	54	51	46	43	41	39	37	31
30	105.774	54	51	46	43	40	39	37	30
31	719	55	51	46	43	41	39	37	29
32	665	54	51	46	43	40	39	37	28
33	611	54	51	46	42	41	39	37	27
34	557	54	51	46	43	41	39	37	26
35	503	54	50	46	43	40	39	37	25
36	449	54	51	46	43	41	39	37	24
37	395	54	51	46	43	41	39	37	23
38	341	53	50	46	43	41	39	37	22
39	288	53	50	46	42	40	39	37	21
40	105.234	54	51	46	43	40	39	37	20
41	180	54	51	46	42	40	39	37	19
42	127	54	50	46	43	41	39	37	18
43	073	53	51	46	42	40	39	37	17
44	105.020	54	50	46	43	41	39	37	16
45	104.966	54	50	46	42	41	39	37	15
46	913	53	51	46	43	40	39	37	14
47	859	53	50	46	43	41	39	37	13
48	806	53	50	46	42	40	39	37	12
49	753	53	50	46	42	40	39	37	11
50	104.700	53	50	46	42	40	39	37	10
51	647	53	50	46	42	40	39	37	9
52	594	53	50	46	43	40	39	37	8
53	541	53	50	46	42	40	39	37	7
54	488	53	50	46	42	40	39	37	6
55	435	53	49	46	42	40	39	37	5
56	382	53	50	46	42	40	39	37	4
57	329	53	50	46	42	39	38	36	3
58	276	53	50	46	42	40	39	37	2
59	224	52	50	46	42	40	39	37	1
60	104.171	53	49	47	45	42	40	37	0
	27'	26'	25'	24'	23'	22'	21'	20'	

tang 89°

35

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

37

1	3.7
2	7.4
3	11.1
4	14.8
5	18.5
6	22.2
7	25.9
8	29.6
9	33.3

39

1	3.9
2	7.8
3	11.7
4	15.6
5	19.5
6	23.4
7	27.3
8	31.2
9	35.1

41

1	4.1
2	8.2
3	12.3
4	16.4
5	20.5
6	24.6
7	28.7
8	32.8
9	36.9

43

1	4.3
2	8.6
3	12.9
4	17.2
5	21.5
6	25.8
7	30.1
8	34.4
9	38.7

46

1	4.6
2	9.2
3	13.8
4	18.4
5	23.0
6	27.6
7	32.2
8	36.8
9	41.4

50

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

54

1	5.4
2	10.8
3	16.2
4	21.6
5	27.0
6	32.4
7	37.8
8	43.2
9	48.6

	32'	33'	34'	35'	36'	37'	38'	39'	60"
36	0. 107.431	56 104.176	53 101.112	50 98.223	47 95.495	44 92.914	42 90.469	40 88.149	37 60"
1 3.6	1 375	56 123	52 062	49 176	45 451	42 872	39 429	37 112	59
2 7.2	2 319	56 071	52 101.013	49 130	45 406	42 830	39 390	37 074	58
3 10.8	3 264	55 104.018	53 100.963	49 083	44 362	42 788	40 350	38 88.036	57
4 14.4	4 208	56 103.966	53 914	49 98.036	44 318	42 747	40 310	38 87.999	56
5 18.0	5 152	56 913	52 865	49 97.990	44 274	42 705	40 271	39 961	55
6 21.6	6 096	56 861	52 815	49 943	44 230	42 663	40 231	39 924	54
7 25.2	7 107.041	55 809	52 766	49 897	44 186	42 622	40 192	39 886	53
8 28.8	8 106.985	55 757	52 717	49 850	44 142	42 580	40 153	39 849	52
9 32.4	9 930	55 704	53 668	49 804	44 098	42 539	40 113	39 812	51
38	10 106.875	55 103.652	52 100.619	49 97.758	46 95.055	43 92.497	42 90.074	39 87.774	50
1 3.8	11 819	56 600	52 570	49 711	47 95.011	44 456	42 90.035	39 737	49
2 7.6	12 764	55 548	52 521	49 665	46 94.967	44 414	42 89.995	39 700	48
3 11.4	13 709	55 496	52 472	49 619	46 923	44 373	41 956	39 662	47
4 15.2	14 653	56 444	52 423	49 573	46 880	43 332	42 917	39 625	46
5 19.0	15 598	55 392	51 374	49 526	46 836	43 290	41 878	39 588	45
6 22.6	16 543	55 341	52 325	49 480	46 793	43 249	41 838	39 551	44
7 26.6	17 488	55 289	52 276	49 434	46 749	43 208	41 799	39 513	43
8 30.4	18 433	55 237	52 228	49 388	46 706	43 167	41 760	39 476	42
9 34.2	19 378	55 186	51 179	49 342	46 662	43 125	42 721	39 439	41
40	20 106.324	54 103.134	52 100.130	49 97.296	46 94.619	43 92.084	41 89.682	39 87.402	40
1 4.0	21 269	55 082	52 082	45 251	44 575	41 043	39 643	37 365	39
2 8.0	22 214	55 103.031	51 100.033	46 205	43 532	41 92.002	39 604	37 328	38
3 12.0	23 159	54 102.980	52 99.985	46 159	43 489	41 91.961	39 565	37 291	37
4 16.0	24 105	54 928	52 936	46 113	44 445	41 920	39 527	37 254	36
5 20.0	25 100.050	55 877	51 888	46 068	43 402	41 879	39 488	37 217	35
6 24.0	26 105.996	54 826	52 839	46 97.022	43 359	41 838	39 449	37 181	34
7 28.0	27 941	55 774	52 791	46 96.976	43 316	41 797	39 410	37 144	33
8 32.0	28 887	54 723	51 743	45 931	43 273	40 757	39 371	37 107	32
9 36.0	29 833	54 672	51 695	46 885	43 230	41 716	39 333	37 070	31
42	30 105.778	55 102.621	51 99.647	45 96.840	43 94.187	41 91.675	39 89.294	37 87.033	30
1 4.2	31 724	54 570	51 598	46 794	43 144	41 634	39 255	36 86.997	29
2 8.4	32 670	54 519	51 550	45 749	43 101	40 594	39 217	36 960	28
3 12.6	33 616	54 468	51 502	46 703	43 058	41 553	39 178	36 923	27
4 16.8	34 562	54 417	51 454	46 658	43 015	41 512	39 140	36 887	26
5 21.0	35 508	54 366	51 406	45 613	43 93.972	40 472	39 101	36 850	25
6 25.2	36 454	54 316	50 359	45 568	43 929	41 431	39 063	36 814	24
7 29.4	37 400	54 265	51 311	46 522	43 887	40 391	39 024	36 777	23
8 33.6	38 346	54 214	51 263	46 477	43 844	41 350	39 98.986	36 741	22
9 37.8	39 292	54 163	51 215	45 432	43 801	40 310	39 947	36 704	21
44	40 105.239	53 102.113	50 99.167	45 96.387	42 93.759	41 91.269	39 88.909	36 86.668	20
1 4.4	41 185	54 062	51 120	47 342	43 716	40 229	38 871	36 631	19
2 8.8	42 131	54 102.012	50 072	48 297	43 673	40 189	38 833	36 595	18
3 13.2	43 078	53 101.961	51 99.025	47 252	42 631	41 148	39 794	36 559	17
4 17.6	44 105.024	54 911	50 98.977	47 207	42 588	41 108	39 756	36 522	16
5 22.0	45 104.971	53 861	50 930	48 162	42 546	40 068	38 718	36 486	15
6 26.4	46 918	53 811	50 882	48 118	42 504	40 028	38 680	36 450	14
7 30.8	47 864	54 760	51 835	47 073	43 461	40 90.988	38 642	36 414	13
8 35.2	48 811	53 710	50 788	47 96.028	42 419	40 948	38 604	36 377	12
9 39.6	49 758	53 660	50 740	48 95.983	42 377	41 907	38 566	36 341	11
48	50 104.705	53 101.610	50 98.693	47 95.939	44 93.334	43 90.867	40 88.528	38 86.305	10
1 4.8	51 651	54 560	50 646	47 894	45 292	42 827	40 490	36 269	9
2 9.6	52 598	53 510	50 599	47 850	45 250	42 787	40 452	36 233	8
3 14.4	53 545	53 460	50 552	48 805	45 208	42 747	40 414	36 197	7
4 19.2	54 492	53 410	50 504	47 761	44 166	42 708	40 376	36 161	6
5 24.0	55 439	53 360	50 457	47 716	45 124	42 668	40 338	36 125	5
6 28.8	56 387	53 310	49 410	46 672	44 082	42 628	40 300	36 089	4
7 33.6	57 334	53 261	50 364	47 628	45 93.040	42 588	40 262	36 053	3
8 38.4	58 281	53 211	50 317	47 583	45 92.998	42 548	40 225	36 017	2
9 43.2	59 228	53 161	50 270	47 539	44 956	42 509	40 187	36 981	1
52	60 104.176	52 101.112	49 98.223	47 95.495	44 92.914	42 90.469	40 88.149	38 85.946	0
56	27'	26'	25'	24'	23'	22'	21'	20'	
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

	40'	41'	42'	43'	44'	45'	46'	47'	60°	25
0°	85.940	83.844	81.847	79.943	78.126	76.390	74.729	73.139		
1	904	809	815	912	097	362	702	113	26	1 2.5
2	868	775	782	881	067	333	675	087	26	2 5.0
3	832	741	750	851	038	305	648	061	26	3 7.5
4	797	707	717	820	010	277	621	035	26	4 10.0
5	761	673	685	789	979	249	594	010	25	5 12.5
6	725	639	653	758	949	221	567	984	26	6 15.0
7	690	606	620	727	920	192	540	958	26	7 17.5
8	654	572	588	696	890	164	513	932	26	8 20.0
9	619	538	556	665	861	136	486	906	26	9 22.5
10	85.583	83.504	81.524	79.635	77.831	76.108	74.459	72.881	25	
11	548	470	491	604	802	080	432	855	26	27
12	512	436	459	573	773	052	406	829	26	1 2.7
13	477	403	427	543	743	024	379	803	26	2 5.4
14	441	369	395	512	714	996	352	778	25	3 8.1
15	406	335	363	481	685	968	325	752	26	4 10.8
16	371	302	331	451	656	940	298	726	26	5 13.5
17	335	268	299	420	626	912	272	701	25	6 16.2
18	300	234	267	389	597	884	245	675	26	7 18.9
19	265	201	234	359	568	856	218	649	26	8 21.6
20	85.229	83.167	81.203	79.328	77.539	75.828	74.191	72.624	25	9 24.3
21	194	134	171	298	510	800	165	598	26	
22	159	100	139	267	481	773	138	573	25	29
23	124	067	107	237	452	745	111	547	26	1 2.9
24	089	033	075	207	422	717	085	522	25	2 5.8
25	054	83.000	043	176	393	689	058	496	26	3 8.7
26	85.019	82.967	81.011	146	364	661	032	471	26	4 11.6
27	84.984	933	80.979	115	335	634	005	445	25	5 14.5
28	949	900	948	085	306	606	74.005	420	25	6 17.4
29	914	867	916	055	277	578	73.979	394	26	7 20.3
30	84.879	82.833	80.884	79.024	77.248	75.550	73.926	72.369	25	8 23.2
31	844	800	852	78.994	219	523	899	344	26	9 26.1
32	809	767	821	964	191	495	873	318	25	
33	774	734	789	934	162	468	846	293	25	31
34	739	700	757	904	133	440	820	268	25	1 3.1
35	704	667	726	873	104	412	793	242	26	2 6.2
36	670	634	694	843	075	385	767	217	25	3 9.3
37	635	601	663	813	046	357	740	192	25	4 12.4
38	600	568	631	783	018	330	714	166	26	5 15.5
39	565	535	600	753	77.018	302	688	141	25	6 18.6
40	84.531	82.502	80.568	78.723	76.989	75.275	73.661	72.116	25	7 21.7
41	496	469	537	693	931	247	635	091	25	8 24.8
42	462	436	505	663	903	220	609	066	26	9 27.9
43	427	403	474	633	874	192	583	040	25	
44	392	370	442	603	845	165	556	015	25	33
45	358	337	411	573	817	138	530	71.990	25	1 3.3
46	323	304	380	543	788	110	504	965	25	2 6.6
47	289	271	348	513	760	083	478	940	25	3 9.9
48	255	239	317	483	731	056	452	915	25	4 13.2
49	220	206	286	453	703	028	425	890	25	5 16.5
50	84.186	82.173	80.255	78.423	76.674	75.001	73.399	71.865	25	6 19.8
51	151	140	223	394	646	29	373	840	25	7 23.1
52	117	108	192	364	617	28	347	815	25	8 26.4
53	083	075	161	334	589	29	321	790	25	9 29.7
54	049	042	130	304	560	28	295	765	25	
55	84.014	82.010	099	275	532	29	269	740	25	35
56	83.980	81.977	068	245	503	28	243	715	25	1 3.5
57	946	945	037	215	475	28	217	690	25	2 7.0
58	912	912	80.005	186	447	29	191	665	25	3 10.5
59	878	880	79.974	156	418	28	165	640	25	4 14.0
60	83.844	81.847	79.943	78.126	76.390	74.729	73.139	71.615	25	5 17.5
	19'	18'	17'	16'	15'	14'	13'	12'	0	6 21.0
										7 24.5
										8 28.0
										9 31.5

		40'	41'	42'	43'	44'	45'	46'	47'	60°																																																																																																																																																																	
20	0°	85.946	36	83.849	34	81.853	32	79.950	31	78.133	30	76.397	29	74.736	27	73.146	26	71.622	25	70.159	24	68.756	23	67.403	22	66.099	21	64.844	20	63.638	19	62.481	18	61.372	17	60.310	16	59.295	15	58.326	14	57.402	13	56.523	12	55.689	11	54.900	10	54.156	9	53.457	8	52.802	7	52.191	6	51.624	5	51.100	4	50.618	3	50.178	2	49.780	1	49.424	0	49.110																																																																																																					
	1	910	36	815	34	821	33	919	31	103	29	368	28	709	27	120	26	59	25	59	24	58	23	57	22	56	21	55	20	54	19	53	18	52	17	51	16	50	15	49	14	48	13	47	12	46	11	45	10	44	9	43	8	42	7	41	6	40	5	39	4	38	3	37	2	36	1	35	0	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																			
	2	874	36	781	34	788	33	888	31	074	29	340	28	682	27	094	26	58	25	58	24	57	23	56	22	55	21	54	20	53	19	52	18	51	17	50	16	49	15	48	14	47	13	46	12	45	11	44	10	43	9	42	8	41	7	40	6	39	4	38	3	37	2	36	1	35	0	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																					
	3	838	36	747	34	756	33	857	31	044	29	312	28	655	27	068	26	57	25	57	24	56	23	55	22	54	21	53	20	52	19	51	18	50	17	49	16	48	15	47	14	46	13	45	12	44	11	43	10	42	9	41	8	40	7	39	6	38	5	37	4	36	3	35	2	34	1	33	0	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																					
	4	803	36	713	34	723	33	826	31	78.015	29	284	28	628	27	042	26	56	25	56	24	55	23	54	22	53	21	52	20	51	19	50	18	49	17	48	16	47	15	46	14	45	13	44	12	43	11	42	10	41	9	40	8	39	7	38	6	37	5	36	4	35	3	34	2	33	1	32	0	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																						
	5	767	36	679	34	691	33	795	31	77.985	29	255	28	601	27	73.016	26	55	25	55	24	54	23	53	22	52	21	51	20	50	19	49	18	48	17	47	16	46	15	45	14	44	13	43	12	42	11	41	10	40	9	39	8	38	7	37	6	36	5	35	4	34	3	33	2	32	1	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																								
	6	731	36	645	34	659	33	764	31	956	29	227	28	574	27	72.991	26	54	25	54	24	53	23	52	22	51	21	50	19	49	18	48	17	47	16	46	15	45	14	44	13	43	12	42	11	41	10	40	9	39	8	38	7	37	6	36	5	35	4	34	3	33	2	32	1	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																										
	7	696	36	612	33	626	33	733	31	926	29	199	28	547	27	965	26	53	25	53	24	52	23	51	22	50	19	49	18	48	17	47	16	46	15	45	14	44	13	43	12	42	11	41	10	40	9	39	8	38	7	37	6	36	5	35	4	34	3	33	2	32	1	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																												
	8	660	36	578	34	594	32	703	30	897	29	171	28	520	27	939	26	52	25	52	24	51	23	50	19	49	18	48	17	47	16	46	15	45	14	44	13	43	12	42	11	41	10	40	9	39	8	38	7	37	6	36	5	35	4	34	3	33	2	32	1	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																														
	9	625	35	544	34	562	32	672	31	867	30	143	28	493	27	913	26	51	25	51	24	50	23	49	19	48	17	47	16	46	15	45	14	44	13	43	12	42	11	41	10	40	9	39	8	38	7	37	6	36	5	35	4	34	3	33	2	32	1	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																																
	10	85.589	36	83.510	34	81.530	32	79.641	31	77.838	29	76.115	28	74.466	27	72.887	26	71.368	25	70.000	24	68.682	23	67.414	22	66.195	21	65.025	20	63.904	19	62.832	18	61.809	17	60.835	16	59.910	15	59.034	14	58.207	13	57.428	12	56.697	11	56.014	10	55.379	9	54.792	8	54.253	7	53.761	6	53.316	5	52.918	4	52.567	3	52.263	2	52.005	1	51.793	0	51.626	50	51.504	49	51.426	48	51.392	47	51.402	46	51.456	45	51.554	44	51.696	43	51.882	42	52.112	41	52.385	40	52.700	39	53.056	38	53.453	37	53.891	36	54.369	35	54.887	34	55.445	33	56.043	32	56.681	31	57.359	30	58.076	29	58.832	28	59.627	27	60.461	26	61.333	25	62.244	24	63.194	23	64.183	22	65.211	21	66.278	20	67.384	19	68.529	18	69.713	17	70.936	16	72.198	15	73.500	14	74.841	13	76.221	12	77.640	11	79.098	10	80.595	9	82.131	8	83.706	7	85.320	6	86.973	5	88.665	4	90.396	3	92.166	2	93.975	1	95.823	0
28	11	554	36	476	34	497	33	610	31	809	29	087	28	439	27	862	26	49	25	49	24	48	23	47	22	46	21	45	20	44	19	43	18	42	17	41	16	40	15	39	14	38	13	37	12	36	11	35	10	34	9	33	8	32	7	31	6	30	5	29	4	28	3	27	2	26	1	25	0	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																													
	12	518	35	442	33	465	32	580	30	779	29	059	28	412	27	836	26	48	25	48	24	47	23	46	22	45	21	44	20	43	19	42	18	41	17	40	16	39	15	38	14	37	13	36	12	35	11	34	10	33	9	32	8	31	7	30	6	29	5	28	4	27	3	26	2	25	1	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																															
	13	483	36	409	34	433	32	549	31	750	29	031	28	386	27	810	26	47	25	47	24	46	23	45	22	44	21	43	20	42	19	41	18	40	17	39	16	38	15	37	14	36	13	35	12	34	11	33	10	32	9	31	8	30	7	29	6	28	5	27	4	26	3	25	2	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																																	
	14	447	35	375	34	401	32	518	31	721	29	76.002	28	359	27	785	26	46	25	46	24	45	23	44	22	43	21	42	20	41	19	40	18	39	17	38	16	37	15	36	14	35	13	34	12	33	11	32	10	31	9	30	8	29	7	28	6	27	5	26	4	25	3	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																																			
	15	412	35	341	33	369	32	488	31	691	29	75.974	28	332	27	759	26	45	25	45	24	44	23	43	22	42	21	41	20	40	19	39	18	38	17	37	16	36	15	35	14	34	13	33	12	32	11	31	10	30	9	29	8	28	7	27	6	26	5	25	4	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																																					
	16	376	35	308	34	337	32	457	31	662	29	947	28	305	27	733	26	44	25	44	24	43	23	42	22	41	21	40	20	39	19	38	18	37	17	36	16	35	15	34	14	33	13	32	12	31	11	30	10	29	9	28	8	27	7	26	6	25	5	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																																							
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