

A	arccos(a)	x 111.2	A	arccos(a)	x 111.2	a	arccos(a)	x 111.2
0.999848	1°	111.2	0.48481	61°	6783.2	-0.51504	121°	13455.2
0.999391	2°	222.4	0.469472	62°	6894.4	-0.52992	122°	13566.4
0.99863	3°	333.6	0.45399	63°	7005.6	-0.54464	123°	13677.6
0.997564	4°	444.8	0.438371	64°	7116.8	-0.55919	124°	13788.8
0.996195	5°	556	0.422618	65°	7228	-0.57358	125°	13900
0.994522	6°	667.2	0.406737	66°	7339.2	-0.58779	126°	14011.2
0.992546	7°	778.4	0.390731	67°	7450.4	-0.60182	127°	14122.4
0.990268	8°	889.6	0.374607	68°	7561.6	-0.61566	128°	14233.6
0.987688	9°	1000.8	0.358368	69°	7672.8	-0.62932	129°	14344.8
0.984808	10°	1112	0.34202	70°	7784	-0.64279	130°	14456
0.981627	11°	1223.2	0.325568	71°	7895.2	-0.65606	131°	14567.2
0.978148	12°	1334.4	0.309017	72°	8006.4	-0.66913	132°	14678.4
0.97437	13°	1445.6	0.292372	73°	8117.6	-0.682	133°	14789.6
0.970296	14°	1556.8	0.275637	74°	8228.8	-0.69466	134°	14900.8
0.965926	15°	1668	0.258819	75°	8340	-0.70711	135°	15012
0.961262	16°	1779.2	0.241922	76°	8451.2	-0.71934	136°	15123.2
0.956305	17°	1890.4	0.224951	77°	8562.4	-0.73135	137°	15234.4
0.951057	18°	2001.6	0.207912	78°	8673.6	-0.74314	138°	15345.6
0.945519	19°	2112.8	0.190809	79°	8784.8	-0.75471	139°	15456.8
0.939693	20°	2224	0.173648	80°	8896	-0.76604	140°	15568
0.93358	21°	2335.2	0.156434	81°	9007.2	-0.77715	141°	15679.2
0.927184	22°	2446.4	0.139173	82°	9118.4	-0.78801	142°	15790.4
0.920505	23°	2557.6	0.121869	83°	9229.6	-0.79864	143°	15901.6
0.913545	24°	2668.8	0.104528	84°	9340.8	-0.80902	144°	16012.8
0.906308	25°	2780	0.087156	85°	9452	-0.81915	145°	16124
0.898794	26°	2891.2	0.069756	86°	9563.2	-0.82904	146°	16235.2
0.891007	27°	3002.4	0.052336	87°	9674.4	-0.83867	147°	16346.4
0.882948	28°	3113.6	0.034899	88°	9785.6	-0.84805	148°	16457.6
0.87462	29°	3224.8	0.017452	89°	9896.8	-0.85717	149°	16568.8
0.866025	30°	3336	0.0	90°	10008	-0.86603	150°	16680
0.857167	31°	3447.2	-0.01745	91°	10119.2	-0.87462	151°	16791.2
0.848048	32°	3558.4	-0.0349	92°	10230.4	-0.88295	152°	16902.4
0.838671	33°	3669.6	-0.05234	93°	10341.6	-0.89101	153°	17013.6
0.829038	34°	3780.8	-0.06976	94°	10452.8	-0.89879	154°	17124.8
0.819152	35°	3892	-0.08716	95°	10564	-0.90631	155°	17236
0.809017	36°	4003.2	-0.10453	96°	10675.2	-0.91355	156°	17347.2
0.798636	37°	4114.4	-0.12187	97°	10786.4	-0.9205	157°	17458.4
0.788011	38°	4225.6	-0.13917	98°	10897.6	-0.92718	158°	17569.6
0.777146	39°	4336.8	-0.15643	99°	11008.8	-0.93358	159°	17680.8
0.766044	40°	4448	-0.17365	100°	11120	-0.93969	160°	17792
0.75471	41°	4559.2	-0.19081	101°	11231.2	-0.94552	161°	17903.2
0.743145	42°	4670.4	-0.20791	102°	11342.4	-0.95106	162°	18014.4
0.731354	43°	4781.6	-0.22495	103°	11453.6	-0.9563	163°	18125.6
0.71934	44°	4892.8	-0.24192	104°	11564.8	-0.96126	164°	18236.8
0.707107	45°	5004	-0.25882	105°	11676	-0.96593	165°	18348
0.694658	46°	5115.2	-0.27564	106°	11787.2	-0.9703	166°	18459.2
0.681998	47°	5226.4	-0.29237	107°	11898.4	-0.97437	167°	18570.4
0.669131	48°	5337.6	-0.30902	108°	12009.6	-0.97815	168°	18681.6
0.656059	49°	5448.8	-0.32557	109°	12120.8	-0.98163	169°	18792.8
0.642788	50°	5560	-0.34202	110°	12232	-0.98481	170°	18904
0.62932	51°	5671.2	-0.35837	111°	12343.2	-0.98769	171°	19015.2
0.615661	52°	5782.4	-0.37461	112°	12454.4	-0.99027	172°	19126.4
0.601815	53°	5893.6	-0.39073	113°	12565.6	-0.99255	173°	19237.6
0.587785	54°	6004.8	-0.40674	114°	12676.8	-0.99452	174°	19348.8
0.573576	55°	6116	-0.42262	115°	12788	-0.99619	175°	19460
0.559193	56°	6227.2	-0.43837	116°	12899.2	-0.99756	176°	19571.2
0.544639	57°	6338.4	-0.45399	117°	13010.4	-0.99863	177°	19682.4
0.529919	58°	6449.6	-0.46947	118°	13121.6	-0.99939	178°	19793.6
0.515038	59°	6560.8	-0.48481	119°	13232.8	-0.99985	179°	19904.8
0.5	60°	6672	-0.5	120°	13344	-1	180°	20016

a	sin(a)	cos(a)	a	sin(a)	cos(a)	a	sin(a)	cos(a)
1	0.017452	0.999848	61	0.87462	0.48481	121	0.857167	-0.51504
2	0.034899	0.999391	62	0.882948	0.469472	122	0.848048	-0.52992
3	0.052336	0.99863	63	0.891007	0.45399	123	0.838671	-0.54464
4	0.069756	0.997564	64	0.898794	0.438371	124	0.829038	-0.55919
5	0.087156	0.996195	65	0.906308	0.422618	125	0.819152	-0.57358
6	0.104528	0.994522	66	0.913545	0.406737	126	0.809017	-0.58779
7	0.121869	0.992546	67	0.920505	0.390731	127	0.798636	-0.60182
8	0.139173	0.990268	68	0.927184	0.374607	128	0.788011	-0.61566
9	0.156434	0.987688	69	0.93358	0.358368	129	0.777146	-0.62932
10	0.173648	0.984808	70	0.939693	0.34202	130	0.766044	-0.64279
11	0.190809	0.981627	71	0.945519	0.325568	131	0.75471	-0.65606
12	0.207912	0.978148	72	0.951057	0.309017	132	0.743145	-0.66913
13	0.224951	0.97437	73	0.956305	0.292372	133	0.731354	-0.682
14	0.241922	0.970296	74	0.961262	0.275637	134	0.71934	-0.69466
15	0.258819	0.965926	75	0.965926	0.258819	135	0.707107	-0.70711
16	0.275637	0.961262	76	0.970296	0.241922	136	0.694658	-0.71934
17	0.292372	0.956305	77	0.97437	0.224951	137	0.681998	-0.73135
18	0.309017	0.951057	78	0.978148	0.207912	138	0.669131	-0.74314
19	0.325568	0.945519	79	0.981627	0.190809	139	0.656059	-0.75471
20	0.34202	0.939693	80	0.984808	0.173648	140	0.642788	-0.76604
21	0.358368	0.93358	81	0.987688	0.156434	141	0.62932	-0.77715
22	0.374607	0.927184	82	0.990268	0.139173	142	0.615661	-0.78801
23	0.390731	0.920505	83	0.992546	0.121869	143	0.601815	-0.79864
24	0.406737	0.913545	84	0.994522	0.104528	144	0.587785	-0.80902
25	0.422618	0.906308	85	0.996195	0.087156	145	0.573576	-0.81915
26	0.438371	0.898794	86	0.997564	0.069756	146	0.559193	-0.82904
27	0.45399	0.891007	87	0.99863	0.052336	147	0.544639	-0.83867
28	0.469472	0.882948	88	0.999391	0.034899	148	0.529919	-0.84805
29	0.48481	0.87462	89	0.999848	0.017452	149	0.515038	-0.85717
30	0.5	0.866025	90	1	0.0	150	0.5	-0.86603
31	0.515038	0.857167	91	0.999848	-0.01745	151	0.48481	-0.87462
32	0.529919	0.848048	92	0.999391	-0.0349	152	0.469472	-0.88295
33	0.544639	0.838671	93	0.99863	-0.05234	153	0.45399	-0.89101
34	0.559193	0.829038	94	0.997564	-0.06976	154	0.438371	-0.89879
35	0.573576	0.819152	95	0.996195	-0.08716	155	0.422618	-0.90631
36	0.587785	0.809017	96	0.994522	-0.10453	156	0.406737	-0.91355
37	0.601815	0.798636	97	0.992546	-0.12187	157	0.390731	-0.9205
38	0.615661	0.788011	98	0.990268	-0.13917	158	0.374607	-0.92718
39	0.62932	0.777146	99	0.987688	-0.15643	159	0.358368	-0.93358
40	0.642788	0.766044	100	0.984808	-0.17365	160	0.34202	-0.93969
41	0.656059	0.75471	101	0.981627	-0.19081	161	0.325568	-0.94552
42	0.669131	0.743145	102	0.978148	-0.20791	162	0.309017	-0.95106
43	0.681998	0.731354	103	0.97437	-0.22495	163	0.292372	-0.9563
44	0.694658	0.71934	104	0.970296	-0.24192	164	0.275637	-0.96126
45	0.707107	0.707107	105	0.965926	-0.25882	165	0.258819	-0.96593
46	0.71934	0.694658	106	0.961262	-0.27564	166	0.241922	-0.9703
47	0.731354	0.681998	107	0.956305	-0.29237	167	0.224951	-0.97437
48	0.743145	0.669131	108	0.951057	-0.30902	168	0.207912	-0.97815
49	0.75471	0.656059	109	0.945519	-0.32557	169	0.190809	-0.98163
50	0.766044	0.642788	110	0.939693	-0.34202	170	0.173648	-0.98481
51	0.777146	0.62932	111	0.93358	-0.35837	171	0.156434	-0.98769
52	0.788011	0.615661	112	0.927184	-0.37461	172	0.139173	-0.99027
53	0.798636	0.601815	113	0.920505	-0.39073	173	0.121869	-0.99255
54	0.809017	0.587785	114	0.913545	-0.40674	174	0.104528	-0.99452
55	0.819152	0.573576	115	0.906308	-0.42262	175	0.087156	-0.99619
56	0.829038	0.559193	116	0.898794	-0.43837	176	0.069756	-0.99756
57	0.838671	0.544639	117	0.891007	-0.45399	177	0.052336	-0.99863
58	0.848048	0.529919	118	0.882948	-0.46947	178	0.034899	-0.99939
59	0.857167	0.515038	119	0.87462	-0.48481	179	0.017452	-0.99985
60	0.866025	0.5	120	0.866025	-0.5	180	1.23E-16	-1