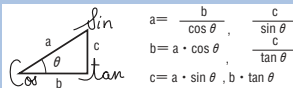


CONVERSION CHART OF TRIGONOMETRICAL FUNCTIONS

θ (theta)		When deg (angle) = 0° 00' ~ 11° 50'				
deg (angle)		sin θ value	cos θ value	tan θ value	cot θ value	
0°	00'	0.000	1.0000	0.000	∞	90° 00'
	10'	0.0029	1.0000	0.0029	343.77	50
	20	0.0058	1.0000	0.0058	171.89	40
	30	0.0087	1.0000	0.0087	114.59	30
	40	0.1116	0.9999	0.1116	85.940	20
	50	0.145	0.9999	0.145	68.750	10
1°	00'	0.175	0.9998	0.175	57.290	89° 00'
	10'	0.204	0.9998	0.204	49.104	50
	20	0.233	0.9997	0.233	42.964	40
	30	0.262	0.9997	0.262	38.188	30
	40	0.291	0.9996	0.291	34.368	20
	50	0.320	0.9995	0.320	31.242	10
2°	00'	0.349	0.9994	0.349	28.636	88° 00'
	10	0.378	0.9993	0.378	26.432	50
	20	0.407	0.9992	0.407	24.542	40
	30	0.436	0.9990	0.437	22.904	30
	40	0.465	0.9989	0.466	21.470	20
	50	0.494	0.9988	0.495	20.206	10
3°	00'	0.523	0.9986	0.524	19.081	87° 00'
	10	0.552	0.9985	0.553	18.075	50
	20	0.581	0.9983	0.582	17.169	40
	30	0.610	0.9981	0.612	16.350	30
	40	0.640	0.9980	0.641	15.605	20
	50	0.669	0.9978	0.670	14.924	10
4°	00'	0.698	0.9976	0.699	14.301	86° 00'
	10	0.727	0.9974	0.729	13.727	50
	20	0.756	0.9971	0.758	13.197	40
	30	0.785	0.9969	0.787	12.706	30
	40	0.814	0.9967	0.816	12.251	20
	50	0.843	0.9964	0.846	11.826	10
5°	00'	0.872	0.9962	0.875	11.430	85° 00'
	10	0.901	0.9959	0.904	11.059	50
	20	0.929	0.9957	0.934	10.712	40
	30	0.958	0.9954	0.963	10.385	30
	40	0.987	0.9951	0.992	10.078	20
	50	1.016	0.9948	1.022	9.7882	10
6°	00'	1.045	0.9945	1.051	9.5144	84° 00'
	10	1.074	0.9942	1.080	9.2553	50
	20	1.103	0.9939	1.110	9.0098	40
	30	1.132	0.9936	1.139	8.7769	30
	40	1.161	0.9932	1.169	8.5555	20
	50	1.190	0.9929	1.198	8.3450	10
7°	00'	1.219	0.9925	1.228	8.1443	83° 00'
	10	1.248	0.9922	1.257	7.9530	50
	20	1.276	0.9918	1.287	7.7704	40
	30	1.305	0.9914	1.317	7.5958	30
	40	1.334	0.9911	1.346	7.4287	20
	50	1.363	0.9907	1.376	7.2687	10
8°	00'	1.392	0.9903	1.405	7.1154	82° 00'
	10	1.421	0.9899	1.435	6.9682	50
	20	1.449	0.9894	1.465	6.8269	40
	30	1.478	0.9890	1.495	6.6912	30
	40	1.507	0.9886	1.524	6.5606	20
	50	1.536	0.9881	1.554	6.4348	10
9°	00'	1.564	0.9877	1.584	6.3138	81° 00'
	10	1.593	0.9872	1.614	6.1970	50
	20	1.622	0.9868	1.644	6.0844	40
	30	1.650	0.9863	1.673	5.9758	30
	40	1.679	0.9858	1.703	5.8708	20
	50	1.708	0.9853	1.733	5.7694	10
10°	00'	1.736	0.9848	1.763	5.6713	80° 00'
	10	1.765	0.9843	1.793	5.5764	50
	20	1.794	0.9838	1.823	5.4845	40
	30	1.822	0.9833	1.853	5.3955	30
	40	1.851	0.9827	1.883	5.3093	20
	50	1.880	0.9822	1.914	5.2257	10
11°	00'	1.908	0.9816	1.944	5.1446	79° 00'
	10	1.937	0.9811	1.974	5.0658	50
	20	1.965	0.9805	2.004	4.9894	40
	30	1.994	0.9799	2.035	4.9152	30
	40	2.022	0.9793	2.065	4.8430	20
	50	2.051	0.9787	2.095	4.7729	10
		cos θ value	sin θ value	cot θ value	tan θ value	deg (angle) θ (theta)
		When deg (angle) = 78° 10' ~ 90° 00'				

θ (theta)		When deg (angle) = 12° 00' ~ 23° 50'				
deg (angle)		sin θ value	cos θ value	tan θ value	cot θ value	
12°	00'	0.209	0.9781	0.2126	4.7046	78° 00'
	10'	0.2108	0.9775	0.2156	4.6382	50
	20	0.2136	0.9769	0.2186	4.5730	40
	30	0.2164	0.9763	0.2217	4.5107	30
	40	0.2193	0.9757	0.2247	4.4494	20
	50	0.2221	0.9750	0.2278	4.3897	10
13°	00'	0.2250	0.9744	0.2309	4.3315	77° 00'
	10'	0.2278	0.9737	0.2339	4.2747	50
	20	0.2306	0.9730	0.2370	4.2193	40
	30	0.2334	0.9724	0.2401	4.1653	30
	40	0.2363	0.9717	0.2432	4.1126	20
	50	0.2391	0.9710	0.2462	4.0611	10
14°	00'	0.2419	0.9703	0.2493	4.0108	76° 00'
	10	0.2447	0.9696	0.2524	3.9617	50
	20	0.2476	0.9689	0.2555	3.9136	40
	30	0.2504	0.9681	0.2586	3.8667	30
	40	0.2532	0.9674	0.2617	3.8208	20
	50	0.2560	0.9667	0.2648	3.7760	10
15°	00'	0.2588	0.9659	0.2679	3.7321	75° 00'
	10	0.2616	0.9652	0.2711	3.6891	50
	20	0.2644	0.9644	0.2742	3.6470	40
	30	0.2672	0.9636	0.2773	3.6059	30
	40	0.2700	0.9628	0.2805	3.5656	20
	50	0.2728	0.9621	0.2836	3.5261	10
16°	00'	0.2756	0.9613	0.2867	3.4874	74° 00'
	10	0.2784	0.9605	0.2899	3.4495	50
	20	0.2812	0.9596	0.2931	3.4124	40
	30	0.2840	0.9588	0.2962	3.3759	30
	40	0.2868	0.9580	0.2994	3.3402	20
	50	0.2896	0.9572	0.3026	3.3052	10
17°	00'	0.2924	0.9563	0.3057	3.2709	73° 00'
	10	0.2952	0.9555	0.3089	3.2371	50
	20	0.2979	0.9546	0.3121	3.2041	40
	30	0.3007	0.9537	0.3153	3.1716	30
	40	0.3035	0.9528	0.3185	3.1397	20
	50	0.3062	0.9520	0.3217	3.1084	10
18°	00'	0.3090	0.9511	0.3249	3.0777	72° 00'
	10	0.3118	0.9502	0.3281	3.0475	50
	20	0.3145	0.9492	0.3314	3.0178	40
	30	0.3173	0.9483	0.3346	2.9887	30
	40	0.3201	0.9474	0.3378	2.9600	20
	50	0.3228	0.9465	0.3411	2.9319	10
19°	00'	0.3256	0.9455	0.3443	2.9042	71° 00'
	10	0.3283	0.9446	0.3476	2.8770	50
	20	0.3311	0.9436	0.3508	2.8502	40
	30	0.3338	0.9426	0.3541	2.8239	30
	40	0.3365	0.9417	0.3574	2.7980	20
	50	0.3393	0.9407	0.3607	2.7725	10
20°	00'	0.3420	0.9397	0.3640	2.7475	70° 00'
	10	0.3448	0.9387	0.3673	2.7228	50
	20	0.3475	0.9377	0.3706	2.6985	40
	30	0.3502	0.9367	0.3739	2.6746	30
	40	0.3529	0.9356	0.3772	2.6511	20
	50	0.3557	0.9346	0.3805	2.6279	10
21°	00'	0.3584	0.9336	0.3838	2.6051	69° 00'
	10	0.3611	0.9325	0.3872	2.5826	50
	20	0.3638	0.9315	0.3906	2.5605	40
	30	0.3665	0.9304	0.3939	2.5386	30
	40	0.3692	0.9293	0.3973	2.5172	20
	50	0.3719	0.9283	0.4006	2.4960	10
22°	00'	0.3746	0.9272	0.4040	2.4751	68° 00'
	10	0.3773	0.9261	0.4074	2.4545	50
	20	0.3800	0.9250	0.4108	2.4342	40
	30	0.3827	0.9239	0.4142	2.4142	30
	40	0.3854	0.9228	0.4176	2.3945	20
	50	0.3881	0.9216	0.4210	2.3750	10
23°	00'	0.3907	0.9205	0.4245	2.3559	67° 00'
	10	0.3934	0.9194	0.4279	2.3369	50
	20	0.3961	0.9182	0.4314	2.3183	40
	30	0.3987	0.9171	0.4348	2.2998	30
	40	0.4014	0.9159	0.4383	2.2817	20
	50	0.4041	0.9147	0.4417	2.2637	10
		cos θ value	sin θ value	cot θ value	tan θ value	deg (angle) θ (theta)
		When deg (angle) = 66° 10' ~ 78° 00'				



θ (theta)		When deg (angle) = 24° 00' ~ 35° 50'				
deg (angle)	sin θ value	cos θ value	tan θ value	cot θ value		
24° 00'	0.4067	.9135	.4452	2.2460	66° 00'	
10	0.4094	.9124	.4487	2.2286	50	
20	0.4120	.9112	.4522	2.2113	40	
30	0.4147	.9100	.4557	2.1943	30	
40	0.4173	.9088	.4592	2.1775	20	
50	0.4200	.9075	.4628	2.1609	10	
25° 00'	0.4226	.9063	.4663	2.1445	65° 00'	
10	0.4253	.9051	.4699	2.1283	50	
20	0.4279	.9038	.4734	2.1123	40	
30	0.4305	.9026	.4770	2.0965	30	
40	0.4331	.9013	.4806	2.0809	20	
50	0.4358	.9001	.4841	2.0655	10	
26° 00'	0.4384	.8988	.4877	2.0503	64° 00'	
10	0.4410	.8975	.4913	2.0353	50	
20	0.4436	.8962	.4950	2.0204	40	
30	0.4462	.8949	.4986	2.0057	30	
40	0.4488	.8936	.5022	1.9912	20	
50	0.4514	.8923	.5059	1.9768	10	
27° 00'	0.4540	.8910	.5095	1.9626	63° 00'	
10	0.4566	.8897	.5132	1.9486	50	
20	0.4592	.8884	.5169	1.9347	40	
30	0.4617	.8870	.5206	1.9210	30	
40	0.4643	.8857	.5243	1.9074	20	
50	0.4669	.8843	.5280	1.8940	10	
28° 00'	0.4695	.8829	.5317	1.8807	62° 00'	
10	0.4720	.8816	.5354	1.8676	50	
20	0.4746	.8802	.5392	1.8546	40	
30	0.4772	.8788	.5430	1.8418	30	
40	0.4797	.8774	.5467	1.8291	20	
50	0.4823	.8760	.5505	1.8165	10	
29° 00'	0.4848	.8746	.5543	1.8040	61° 00'	
10	0.4874	.8732	.5581	1.7917	50	
20	0.4899	.8718	.5619	1.7796	40	
30	0.4924	.8704	.5658	1.7675	30	
40	0.4950	.8689	.5696	1.7556	20	
50	0.4975	.8675	.5735	1.7437	10	
30° 00'	0.5000	.8660	.5774	1.7321	60° 00'	
10	0.5025	.8646	.5812	1.7205	50	
20	0.5050	.8631	.5851	1.7090	40	
30	0.5075	.8616	.5890	1.6977	30	
40	0.5100	.8601	.5930	1.6864	20	
50	0.5125	.8587	.5969	1.6753	10	
31° 00'	0.5150	.8572	.6009	1.6643	59° 00'	
10	0.5175	.8557	.6048	1.6534	50	
20	0.5200	.8542	.6088	1.6426	40	
30	0.5225	.8526	.6128	1.6319	30	
40	0.5250	.8511	.6168	1.6212	20	
50	0.5275	.8496	.6208	1.6107	10	
32° 00'	0.5299	.8480	.6249	1.6003	58° 00'	
10	0.5324	.8465	.6289	1.5900	50	
20	0.5348	.8450	.6330	1.5798	40	
30	0.5373	.8434	.6371	1.5697	30	
40	0.5398	.8418	.6412	1.5597	20	
50	0.5422	.8403	.6453	1.5497	10	
33° 00'	0.5446	.8387	.6494	1.5399	57° 00'	
10	0.5471	.8371	.6536	1.5301	50	
20	0.5495	.8355	.6577	1.5204	40	
30	0.5519	.8339	.6619	1.5108	30	
40	0.5544	.8323	.6661	1.5013	20	
50	0.5568	.8307	.6703	1.4919	10	
34° 00'	0.5592	.8290	.6745	1.4826	56° 00'	
10	0.5616	.8274	.6787	1.4733	50	
20	0.5640	.8258	.6830	1.4641	40	
30	0.5664	.8241	.6873	1.4550	30	
40	0.5688	.8225	.6916	1.4460	20	
50	0.5712	.8208	.6959	1.4370	10	
35° 00'	0.5736	.8192	.7002	1.4281	55° 00'	
10	0.5760	.8175	.7046	1.4193	50	
20	0.5783	.8158	.7089	1.4106	40	
30	0.5807	.8141	.7133	1.4019	30	
40	0.5831	.8124	.7177	1.3934	20	
50	0.5854	.8107	.7221	1.3848	10	
		cos θ value	sin θ value	cot θ value	tan θ value	deg (angle) / θ (theta)
When deg (angle) = 54° 10' ~ 66° 00'						

θ (theta)		When deg (angle) = 36° 00' ~ 45° 00'				
deg (angle)	sin θ value	cos θ value	tan θ value	cot θ value		
36° 00'	0.5878	.8090	.7265	1.3764	54° 00'	
10	0.5901	.8073	.7310	1.3680	50	
20	0.5925	.8056	.7355	1.3597	40	
30	0.5948	.8039	.7400	1.3514	30	
40	0.5972	.8021	.7445	1.3432	20	
50	0.5995	.8004	.7490	1.3351	10	
37° 00'	0.6018	.7986	.7536	1.3270	53° 00'	
10	0.6041	.7969	.7581	1.3190	50	
20	0.6065	.7951	.7627	1.3111	40	
30	0.6088	.7934	.7673	1.3032	30	
40	0.6111	.7916	.7720	1.2954	20	
50	0.6134	.7898	.7766	1.2876	10	
38° 00'	0.6157	.7880	.7813	1.2799	52° 00'	
10	0.6180	.7862	.7860	1.2723	50	
20	0.6202	.7844	.7907	1.2647	40	
30	0.6225	.7826	.7954	1.2572	30	
40	0.6248	.7808	.8002	1.2497	20	
50	0.6271	.7790	.8050	1.2423	10	
39° 00'	0.6293	.7771	.8098	1.2349	51° 00'	
10	0.6316	.7753	.8146	1.2276	50	
20	0.6338	.7735	.8195	1.2203	40	
30	0.6361	.7716	.8243	1.2131	30	
40	0.6383	.7698	.8292	1.2059	20	
50	0.6406	.7679	.8342	1.1988	10	
40° 00'	0.6428	.7660	.8391	1.1918	50° 00'	
10	0.6450	.7642	.8441	1.1847	50	
20	0.6472	.7623	.8491	1.1778	40	
30	0.6494	.7604	.8541	1.1708	30	
40	0.6517	.7585	.8591	1.1640	20	
50	0.6539	.7566	.8642	1.1571	10	
41° 00'	0.6561	.7547	.8693	1.1504	49° 00'	
10	0.6583	.7528	.8744	1.1436	50	
20	0.6604	.7509	.8796	1.1369	40	
30	0.6626	.7490	.8847	1.1303	30	
40	0.6648	.7470	.8899	1.1237	20	
50	0.6670	.7451	.8952	1.1171	10	
42° 00'	0.6691	.7431	.9004	1.1106	48° 00'	
10	0.6713	.7412	.9057	1.1041	50	
20	0.6734	.7392	.9110	1.0977	40	
30	0.6756	.7373	.9163	1.0913	30	
40	0.6777	.7353	.9217	1.0850	20	
50	0.6799	.7333	.9271	1.0786	10	
43° 00'	0.6820	.7314	.9325	1.0724	47° 00'	
10	0.6841	.7294	.9380	1.0661	50	
20	0.6862	.7274	.9435	1.0599	40	
30	0.6884	.7254	.9490	1.0538	30	
40	0.6905	.7234	.9545	1.0477	20	
50	0.6926	.7214	.9601	1.0416	10	
44° 00'	0.6947	.7193	.9657	1.0355	46° 00'	
10	0.6967	.7173	.9713	1.0295	50	
20	0.6988	.7153	.9770	1.0235	40	
30	0.7009	.7133	.9827	1.0176	30	
40	0.7030	.7112	.9884	1.0117	20	
50	0.7050	.7092	.9942	1.0058	10	
45° 00'	0.7071	.7071	1.0000	1.0000	45° 00'	
		cos θ value	sin θ value	cot θ value	tan θ value	deg (angle) / θ (theta)
When deg (angle) = 45° 00' ~ 54° 00'						

Finding the trigonometrical function value from the conversion chart

When deg (angle) is 0° 00' ~ 45° 00'

- Select the θ column on the left side of the conversion chart and find the deg (angle).
- After verifying the type of trigonometrical function listed at the top of the conversion chart, determine the value of the target deg (angle).

$$\begin{aligned} \text{ex.) } \sin 5^\circ &= 0.0872 \\ \cos 5^\circ &= 0.9962 \\ \tan 5^\circ &= 0.0875 \\ \cot 5^\circ &= 11.430 \end{aligned}$$

When deg (angle) is 45° 00' ~ 90° 00'

- Select the θ column on the right side of the conversion chart and find the deg (angle).
- After verifying the type of trigonometrical function listed at the bottom of the conversion chart, determine the value of the target deg (angle).

$$\begin{aligned} \text{ex.) } \sin 85^\circ &= 0.9962 \\ \cos 85^\circ &= 0.0872 \\ \tan 85^\circ &= 11.430 \\ \cot 85^\circ &= 0.0875 \end{aligned}$$

Ⓢ If the deg (angle) includes figures after the decimal point, convert to a value of degrees (°) and minutes (').
Ex.: 5.5° becomes 5° 30' (5 degrees, 30 minutes). (1 degree = 60 minutes)