

winkel °	sinus formel	wert	cosinus formel	wert	tangens formel	wert	hypo strahl formel	wert	45° = 0° bogenmass	winkel °
90,00000000	1	1,00000000	0	0,00000000	∞					45,00000
79,547421276	$\frac{\Phi^2}{\sqrt{6\Phi^2-2\sqrt{3}\Phi}}$	0,983405399	$\frac{\sqrt{3}\Phi-1}{\sqrt{6\Phi^2-2\sqrt{3}\Phi}}$	0,181421665	$\frac{\Phi^2}{\sqrt{3}\times\Phi-1}$	5,420551066	$\frac{\sqrt{6\Phi^2-2\sqrt{3}\Phi}}{\sqrt{3}\times\Phi-1}$	5,512020850	1,38836	34,54742
79,187683036	$\frac{2}{\sqrt{\Phi^2+4}}$	0,982246946	$\frac{\Phi}{\sqrt{3\Phi+9}}$	0,187592474	$3+\sqrt{5} \frac{2}{\Phi^2}$	4+2Φ	$\frac{\sqrt{3\Phi+9}}{\Phi} \sqrt{21+12\Phi}$	5,330704256	1,38209	34,18768
76,717474411	$\frac{1}{\sqrt{\Phi^2+1}}$	0,973248989	$\frac{\Phi}{\sqrt{\Phi^2+1}}$	0,229752921	$2+\sqrt{5} \frac{1}{\Phi^2}$	3+2Φ	$\frac{\sqrt{\Phi^2+1}}{\Phi^2} \sqrt{14+8\Phi}$	4,352501799	1,33897	31,71747
72,00000000	$\frac{\sqrt{5+\sqrt{5}}}{2\times\sqrt{2}}$	0,951056516	$\frac{1}{\sqrt{5+1}} \frac{\Phi}{2}$	0,309016994	$\frac{\sqrt{2}\sqrt{5+\sqrt{5}}}{\sqrt{5-1}} \frac{\sqrt{\Phi+3}}{\Phi}$	$\sqrt{7+4\Phi}$	$\sqrt{5+1} \frac{2}{\Phi} 2+2\Phi$	3,236067977	1,25664	27,00000
70,528779366	$\sqrt{\frac{8}{9}} \frac{2}{3}\sqrt{2}$	0,942809042	$\sqrt{\frac{1}{9}} \frac{1}{3}$	0,333333333	$\sqrt{\frac{8}{1}} 2\sqrt{2} \frac{4}{\sqrt{2}}$		$\sqrt{\frac{8}{1}} 3 \Phi^2 + \frac{1}{\Phi^2} \frac{\Phi^4-1}{\Phi^2}$	3,000000000	1,23096	25,52878
69,094842552	$\frac{2}{\sqrt{15-\sqrt{3}}} \frac{\sqrt{2}}{\sqrt{3}\sqrt{3-\sqrt{5}}} \frac{1}{\sqrt{3}\times\Phi}$	0,934172359	$\frac{\sqrt{5}-1}{\sqrt{12}} \frac{\sqrt{2}}{\sqrt{3}\sqrt{3+\sqrt{5}}} \frac{\Phi}{\sqrt{3}}$	0,356822090	$\frac{3+\sqrt{5}}{2} \frac{1}{\Phi^2}$	2+Φ	$\frac{\sqrt{12}}{\sqrt{5-1}} \frac{\sqrt{3}}{\Phi} \sqrt{8-\Phi^2} \sqrt{6+3\Phi}$	2,802517077	1,20593	24,09484
67,50000000	$\frac{1}{\sqrt{4-\sqrt{8}}} \frac{\sqrt{2+1}}{\sqrt{4+2\sqrt{2}}}$	0,923879533	$\frac{1}{\sqrt{4-\sqrt{8}}} \frac{1}{\sqrt{4+2\sqrt{2}}}$	0,382683432	$\sqrt{2}+1$		$\sqrt{4+\sqrt{8}} \sqrt{4+2\sqrt{2}}$	2,613125930	1,17810	22,50000
65,905157448	$\sqrt{\frac{5}{6}} \frac{\sqrt{5}}{\sqrt{6}}$	0,912870929	$\sqrt{\frac{1}{6}} \frac{1}{\sqrt{6}}$	0,408248290	$\sqrt{\frac{5}{1}} \sqrt{5}$	1+2Φ	$\sqrt{\frac{6}{1}} \sqrt{6}$	2,449489743	1,15026	20,90516
63,434948823	$\sqrt{\frac{4}{5}} \frac{2}{\sqrt{5}}$	0,894427191	$\sqrt{\frac{1}{5}} \frac{1}{\sqrt{5}} \Phi^3 + \frac{1}{\Phi^2}$	0,447213595	$\sqrt{\frac{4}{1}} 2 \sqrt{4} \frac{\Phi^3+1}{\Phi}$		$\sqrt{\frac{5}{1}} \sqrt{5} \Phi^3+2 1+2\Phi$	2,236067977	1,10715	18,43495
60,00000000	$\sqrt{\frac{3}{4}} \frac{\sqrt{3}}{2} \frac{3}{2\times\sqrt{3}}$	0,866025404	$\sqrt{\frac{1}{4}} \frac{1}{2} \frac{1}{\sqrt{4}}$	0,500000000	$\sqrt{\frac{3}{1}} \sqrt{3} \frac{\sqrt{\Phi^2+1}}{\Phi}$		$\sqrt{\frac{4}{1}} \sqrt{4} 2 \frac{\Phi^2+1}{\Phi} \Phi^0 + \Phi^0$	2,000000000	1,04720	15,00000
58,282525589	$\frac{2}{\sqrt{5-\sqrt{5}}} \frac{\sqrt{2}}{5-\sqrt{5}} \frac{1}{\sqrt{2}-\Phi}$	0,850650808	$\frac{2}{\sqrt{5+\sqrt{5}}} \frac{\sqrt{2}}{5+\sqrt{5}} \frac{1}{\sqrt{\Phi+3}}$	0,525731112	$\frac{\sqrt{5}+1}{2} \frac{1}{\Phi}$	1+Φ	$\sqrt{\frac{5+\sqrt{5}}{2}} \sqrt{4-\Phi^2} \sqrt{3+\Phi}$	1,902113033	1,01722	13,28253
54,735610317	$\sqrt{\frac{2}{3}} \sqrt{\frac{4}{6}} \frac{\sqrt{2}}{\sqrt{3}}$	0,816496581	$\sqrt{\frac{1}{3}} \sqrt{\frac{3}{9}} \frac{\sqrt{3}}{3} \frac{1}{\sqrt{3}}$	0,577350269	$\sqrt{\frac{2}{1}} \sqrt{2} \frac{2}{\sqrt{2}}$		$\sqrt{\frac{3}{1}} \sqrt{3} \frac{\sqrt{\Phi^2+1}}{\Phi}$	1,732050808	0,95532	9,73561
54,00000000	$\frac{1}{\sqrt{5-1}} \frac{1}{2\times\Phi}$	0,809016994	$\frac{\sqrt{5-\sqrt{5}}}{8} \frac{\sqrt{5-\sqrt{5}}}{2\sqrt{2}} \frac{\sqrt{2}-\Phi}{2}$	0,587785252	$\frac{1}{\sqrt{5-2\sqrt{5}}} \frac{1}{\Phi\sqrt{2}-\Phi} \frac{1}{\sqrt{3-4\Phi}}$		$\frac{2\sqrt{2}}{\sqrt{5-\sqrt{5}}} \frac{2}{\sqrt{2}-\Phi}$	1,701301617	0,94248	9,00000
52,622631859	$\frac{1}{\sqrt{15-6\sqrt{5}}} \frac{1}{\sqrt{1+4\Phi^2}}$	0,794654472	$\frac{1}{\sqrt{3\Phi+9}}$	0,607061998	$\frac{1}{3-\sqrt{5}} \frac{\Phi+2}{2} \frac{1}{2\Phi^2}$		$\frac{3\sqrt{5}+15}{8} \frac{\sqrt{3\Phi+9}}{2}$	1,647278207	0,91844	7,62263
48,189685104	$\sqrt{\frac{5}{9}} \frac{\sqrt{5}}{3}$	0,745359992	$\sqrt{\frac{4}{9}} \frac{2}{3}$	0,666666667	$\sqrt{\frac{5}{4}} \frac{\sqrt{5}}{2} \Phi + \frac{1}{2}$		$\sqrt{\frac{9}{4}} \frac{3}{2}$	1,500000000	0,84107	3,18969
45,00000000	$\sqrt{\frac{1}{2}} \sqrt{\frac{2}{4}} \frac{\sqrt{2}}{2} \frac{1}{\sqrt{2}}$	0,707106781	$\sqrt{\frac{1}{2}} \sqrt{\frac{2}{4}} \frac{\sqrt{2}}{2} \frac{1}{\sqrt{2}}$	0,707106781	$\sqrt{\frac{1}{1}} 1 \Phi \cdot (\Phi+1) \Phi^0$	1,000000000	$\sqrt{\frac{2}{1}} \sqrt{2} \frac{\sqrt{\Phi^2+1}}{\Phi}$	1,414213562	0,78540	0,00000
41,810314896	$\sqrt{\frac{4}{9}} \frac{2}{3}$	0,666666667	$\sqrt{\frac{5}{9}} \frac{\sqrt{5}}{3} \frac{2\Phi+1}{3}$	0,745359992	$\sqrt{\frac{4}{5}} \frac{2}{\sqrt{5}} \frac{\sqrt{4}}{\sqrt{5}}$		$\sqrt{\frac{9}{5}} \frac{3}{\sqrt{5}}$	1,341640786	0,72973	3,18969
37,377368141	$\frac{2}{\sqrt{3\Phi+9}}$	0,607061998	$\frac{1}{\sqrt{15-6\sqrt{5}}} \frac{1}{\sqrt{1+4\Phi^2}}$	0,794654472	$3-\sqrt{5} 2\Phi^3 2-2\Phi$	$\sqrt{15-6\sqrt{5}} \sqrt{4\Phi^2+1} \sqrt{9-12\Phi}$	1,258408572	0,65236	7,62263	
36,00000000	$\frac{\sqrt{5-\sqrt{5}}}{2\sqrt{2}} \frac{\sqrt{2}-\Phi}{2}$	0,587785252	$\frac{1}{\sqrt{5-1}} \frac{1}{2\Phi}$	0,809016994	$\sqrt{5-2\sqrt{5}} \Phi\sqrt{2}-\Phi \sqrt{3-4\Phi}$		$\sqrt{5-1} 1+\Phi^3 2\Phi$	1,236067977	0,62832	9,00000
35,264389683	$\sqrt{\frac{1}{3}} \sqrt{\frac{3}{9}} \frac{1}{\sqrt{3}} \frac{\sqrt{3}}{3}$	0,577350269	$\sqrt{\frac{2}{3}} \frac{\sqrt{2}}{\sqrt{3}}$	0,816496581	$\sqrt{\frac{2}{2}} \sqrt{\frac{2}{4}} \frac{\sqrt{2}}{2} \frac{1}{\sqrt{2}}$		$\sqrt{\frac{3}{2}} \frac{\sqrt{3}}{\sqrt{2}}$	1,224744871	0,61548	9,73561
31,717474411	$\frac{\sqrt{2}}{5+\sqrt{5}} \frac{1}{\sqrt{\Phi+3}}$	0,525731112	$\frac{2}{\sqrt{5-\sqrt{5}}} \frac{\sqrt{2}}{5-\sqrt{5}} \frac{1}{\sqrt{2}-\Phi}$	0,850650808	$\frac{\sqrt{5}-1}{2} \Phi$		$\frac{\sqrt{5-\sqrt{5}}}{2} \sqrt{2}-\Phi \sqrt{\Phi^2+1}$	1,175570505	0,55357	13,28253
30,00000000	$\sqrt{\frac{1}{4}} \frac{1}{2}$	0,500000000	$\sqrt{\frac{3}{4}} \frac{\sqrt{3}}{2} \frac{3}{2\sqrt{3}}$	0,866025404	$\sqrt{\frac{1}{3}} \sqrt{\frac{3}{9}} \frac{\sqrt{3}}{3} \frac{1}{\sqrt{3}}$		$\sqrt{\frac{4}{3}} \frac{2}{\sqrt{3}} \frac{2}{3}\sqrt{3}$	1,154700538	0,52360	15,00000
26,565051177	$\sqrt{\frac{1}{5}} \frac{1}{\sqrt{5}}$	0,447213595	$\sqrt{\frac{4}{5}} \frac{2}{\sqrt{5}}$	0,894427191	$\sqrt{\frac{4}{5}} \frac{1}{2}$		$\sqrt{\frac{5}{4}} \frac{\sqrt{5}}{2} \Phi^3+1 \Phi + \frac{1}{2}$	1,118033989	0,46365	18,43495
24,094842552	$\sqrt{\frac{1}{6}} \frac{1}{\sqrt{6}}$	0,408248290	$\sqrt{\frac{5}{6}} \frac{\sqrt{5}}{\sqrt{6}}$	0,912870929	$\sqrt{\frac{1}{5}} \frac{1}{\sqrt{5}} \frac{1}{2\Phi+1}$		$\sqrt{\frac{6}{5}} \frac{\sqrt{6}}{\sqrt{5}}$	1,095445115	0,42053	20,90516
22,50000000	$\frac{1}{\sqrt{4+\sqrt{8}}} \frac{\sqrt{2}-1}{\sqrt{4-2\sqrt{2}}}$	0,382683432	$\frac{1}{\sqrt{4-\sqrt{8}}} \frac{1}{\sqrt{4-2\sqrt{2}}}$	0,923879533	$\sqrt{2}-1$		$\sqrt{4-\sqrt{8}} \sqrt{4-2\sqrt{2}}$	1,082392200	0,39270	22,50000
20,905157448	$\frac{\sqrt{5}-1}{\sqrt{12}} \frac{\sqrt{2}}{\sqrt{3}\sqrt{3-\sqrt{5}}} \frac{\Phi}{\sqrt{3}}$	0,356822090	$\frac{2}{\sqrt{15-\sqrt{3}}} \frac{\sqrt{2}}{\sqrt{3}\sqrt{3-\sqrt{5}}} \frac{1}{\sqrt{3}\times\Phi}$	0,934172359	$\frac{3-\sqrt{5}}{2} \Phi^2$		$\frac{\sqrt{15-\sqrt{3}}}{2} \sqrt{3\Phi}\sqrt{\Phi^2+1} \sqrt{3-3\Phi}$	1,070466269	0,36486	24,09484
19,471220634	$\sqrt{\frac{1}{9}} \frac{1}{3}$	0,333333333	$\sqrt{\frac{8}{9}} \frac{2}{3}\sqrt{2} \frac{4}{3\sqrt{2}}$	0,942809042	$\sqrt{\frac{1}{8}} \frac{\sqrt{2}}{4} \frac{1}{2\sqrt{2}}$		$\sqrt{\frac{8}{8}} \frac{3\sqrt{2}}{4} \frac{3}{2\sqrt{2}}$	1,060660172	0,33984	25,52878
18,688684070	$\frac{\sqrt{4\Phi^2+1}-1}{\sqrt{8\Phi^4+2-2\sqrt{4\Phi^2+1}}}$	0,320425910	$\frac{\sqrt{2\Phi^2}}{\sqrt{4\Phi^4+1-\sqrt{4\Phi^2+1}}}$	0,947273580	$\frac{\sqrt{4\Phi^2+1}-1}{2\Phi^2}$		$\frac{\sqrt{4\Phi^2+1}-\sqrt{4\Phi^2+1}}{\sqrt{2\Phi^2}}$	1,055661237	0,32618	26,31132
18,00000000	$\frac{1}{\sqrt{5+1}} \frac{\Phi}{2}$	0,309016994	$\frac{\sqrt{5+\sqrt{5}}}{8} \frac{\sqrt{\Phi+3}}{2}$	0,951056516	$\frac{\sqrt{5}-1}{\sqrt{2}\sqrt{5+\sqrt{5}}} \frac{\Phi}{\sqrt{\Phi+3}} \frac{1}{\sqrt{7+4\Phi}}$		$\frac{\sqrt{8}}{\sqrt{5+\sqrt{5}}} \frac{2}{\sqrt{\Phi+3}}$	1,051462224	0,31416	27,00000
15,858737206	$\frac{\sqrt{2\Phi}-1}{\sqrt{2+2\Phi^2-2\sqrt{2}-\Phi}}$	0,273266529	$\frac{\Phi}{\sqrt{2+2\Phi^2-2\sqrt{2}-\Phi}}$	0,961938358	$\frac{\sqrt{2\Phi}-1}{\Phi} \frac{\Phi}{\sqrt{2}-\Phi+1}$		$\frac{\sqrt{2+2\Phi^2-2\sqrt{2}-\Phi}}{\Phi}$	1,039567652	0,27679	29,14126
13,282525589	$\frac{\sqrt{9-4\sqrt{5}}}{\sqrt{10-4\sqrt{5}}} \frac{\Phi^2}{\sqrt{4-2\Phi}}$	0,229752921	$\frac{1}{\sqrt{10-4\sqrt{5}}} \frac{1}{\Phi\sqrt{4-2\Phi}} \frac{1}{\sqrt{\Phi^2+1}}$	0,973248989	$\sqrt{5}-2 \Phi^3 2\Phi-1$		$\sqrt{10-4\sqrt{5}} \sqrt{\Phi^2+1} \sqrt{6-8\Phi}$	1,027486297	0,23182	31,71747
10,812316964	$\frac{\Phi}{\sqrt{3\Phi+9}}$	0,187592474	$\sqrt{\frac{8}{15-3\sqrt{5}}} \frac{2}{\Phi\sqrt{3\Phi+9}} \frac{2}{\sqrt{\Phi^2+4}}$	0,982246946	$\frac{1}{3+\sqrt{5}} \frac{3-\sqrt{5}}{4} \frac{\Phi^2}{2}$		$\sqrt{\frac{15-3\sqrt{5}}{8}} \frac{\sqrt{\Phi^2+4}}{2} \frac{\sqrt{3-3\Phi}}{2}$	1,018073921	0,18871	34,18768
10,452578724	$\frac{\sqrt{3\Phi}-1}{\sqrt{6\Phi^2-2\sqrt{3}\Phi}}$	0,181421665	$\frac{\Phi^2}{\sqrt{6\Phi^2-2\sqrt{3}\Phi}}$	0,983405399	$\frac{\Phi^2}{\sqrt{3}\times\Phi+1} \frac{\sqrt{3}\times\Phi-1}{\Phi^2}$		$\frac{\sqrt{6\Phi^2-2\sqrt{3}\Phi}}{\Phi^2}$	1,016874628	0,18243	34,54742
0,00000000	0	0,000000000	1	1,000000000	0		1 Φ^0	1,000000000	0,00000	45,00000