



Trigonometry Facts

Exact Values of the Trigonometric Functions

Test yourself on the exact values of the six trigonometric functions at the "nice" angles. Click on "Show" and "Hide" in each table cell to control which values are displayed. Work on these values until you know them all!

Angle θ		Values of the trigonometric functions					
in degrees	in radians	$\sin(\theta)$	$\cos(\theta)$	$\tan(\theta)$	$\cot(\theta)$	$\sec(\theta)$	$\csc(\theta)$
0°	0	0	1	0	undef.	1	undef.
		Show Hide	Show Hide	Show Hide	Show Hide	Show Hide	Show Hide
30°	$\frac{\pi}{6}$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$	$\sqrt{3}$	$\frac{2\sqrt{3}}{3}$	2
		Show Hide	Show Hide	Show Hide	Show Hide	Show Hide	Show Hide
45°	$\frac{\pi}{4}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1	1	$\sqrt{2}$	$\sqrt{2}$
		Show Hide	Show Hide	Show Hide	Show Hide	Show Hide	Show Hide
60°	$\frac{\pi}{3}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$	$\frac{\sqrt{3}}{3}$	2	$\frac{2\sqrt{3}}{3}$
		Show Hide	Show Hide	Show Hide	Show Hide	Show Hide	Show Hide
90°	$\frac{\pi}{2}$	1	0	undef.	0	undef.	1
		Show Hide	Show Hide	Show Hide	Show Hide	Show Hide	Show Hide
120°	$\frac{2\pi}{3}$	$\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	$-\sqrt{3}$	$-\frac{\sqrt{3}}{3}$	-2	$\frac{2\sqrt{3}}{3}$
		Show Hide	Show Hide	Show Hide	Show Hide	Show Hide	Show Hide
135°	$\frac{3\pi}{4}$	$\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$	-1	-1	$-\sqrt{2}$	$\sqrt{2}$
		Show Hide	Show Hide	Show Hide	Show Hide	Show Hide	Show Hide
150°	$\frac{5\pi}{6}$	$\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{3}}{3}$	$-\sqrt{3}$	$-\frac{2\sqrt{3}}{3}$	2
		Show Hide	Show Hide	Show Hide	Show Hide	Show Hide	Show Hide
180°	π	0	-1	0	undef.	-1	undef.
		Show Hide	Show Hide	Show Hide	Show Hide	Show Hide	Show Hide
210°	$\frac{7\pi}{6}$	$-\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$	$\sqrt{3}$	$-\frac{2\sqrt{3}}{3}$	-2
		Show Hide	Show Hide	Show Hide	Show Hide	Show Hide	Show Hide
225°	$\frac{5\pi}{4}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$	1	1	$-\sqrt{2}$	$-\sqrt{2}$
		Show Hide	Show Hide	Show Hide	Show Hide	Show Hide	Show Hide

240°	$\frac{4\pi}{3}$	$-\frac{\sqrt{3}}{2}$ <small>Show Hide</small>	$-\frac{1}{2}$ <small>Show Hide</small>	$\sqrt{3}$ <small>Show Hide</small>	$\frac{\sqrt{3}}{3}$ <small>Show Hide</small>	-2 <small>Show Hide</small>	$-\frac{2\sqrt{3}}{3}$ <small>Show Hide</small>
270°	$\frac{3\pi}{2}$	-1 <small>Show Hide</small>	0 <small>Show Hide</small>	undef. <small>Show Hide</small>	0 <small>Show Hide</small>	undef. <small>Show Hide</small>	-1 <small>Show Hide</small>
300°	$\frac{5\pi}{3}$	$-\frac{\sqrt{3}}{2}$ <small>Show Hide</small>	$\frac{1}{2}$ <small>Show Hide</small>	$-\sqrt{3}$ <small>Show Hide</small>	$-\frac{\sqrt{3}}{3}$ <small>Show Hide</small>	2 <small>Show Hide</small>	$-\frac{2\sqrt{3}}{3}$ <small>Show Hide</small>
315°	$\frac{7\pi}{4}$	$-\frac{\sqrt{2}}{2}$ <small>Show Hide</small>	$\frac{\sqrt{2}}{2}$ <small>Show Hide</small>	-1 <small>Show Hide</small>	-1 <small>Show Hide</small>	$\sqrt{2}$ <small>Show Hide</small>	$-\sqrt{2}$ <small>Show Hide</small>
330°	$\frac{11\pi}{6}$	$-\frac{1}{2}$ <small>Show Hide</small>	$\frac{\sqrt{3}}{2}$ <small>Show Hide</small>	$-\frac{\sqrt{3}}{3}$ <small>Show Hide</small>	$-\sqrt{3}$ <small>Show Hide</small>	$\frac{2\sqrt{3}}{3}$ <small>Show Hide</small>	-2 <small>Show Hide</small>
360°	2π	0 <small>Show Hide</small>	1 <small>Show Hide</small>	0 <small>Show Hide</small>	undef. <small>Show Hide</small>	1 <small>Show Hide</small>	undef. <small>Show Hide</small>

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