

# WARMUP - in notes

Use your unit circle to find the exact values of.

$$\sin 30^\circ = \frac{1}{2}$$

$$\sin 45^\circ = \frac{\sqrt{2}}{2}$$

$$\sin 60^\circ = \frac{\sqrt{3}}{2}$$

$$\cos 30^\circ = \frac{\sqrt{3}}{2}$$

$$\cos 45^\circ = \frac{\sqrt{2}}{2}$$

$$\cos 60^\circ = \frac{1}{2}$$

$$\tan 30^\circ = \frac{\sqrt{3}}{3}$$

$$\tan 45^\circ = 1$$

$$\tan 60^\circ = \sqrt{3}$$

$$\csc 30^\circ = 2$$

$$\csc 45^\circ = \sqrt{2}$$

$$\csc 60^\circ = \frac{2\sqrt{3}}{3}$$

$$\sec 30^\circ = \frac{2\sqrt{3}}{3}$$

$$\sec 45^\circ = \sqrt{2}$$

$$\sec 60^\circ = 2$$

$$\cot 30^\circ = \sqrt{3}$$

$$\cot 45^\circ = 1$$

$$\cot 60^\circ = \frac{\sqrt{3}}{3}$$

Angle in Degrees	0°	30°	45°	60°	90°	120°	135°	150°	180°	210°	225°	240°	270°	300°	315°	330°	360°
Angle in Radians	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	$\pi$	$\frac{7\pi}{6}$	$\frac{5\pi}{4}$	$\frac{4\pi}{3}$	$\frac{3\pi}{2}$	$\frac{5\pi}{3}$	$\frac{7\pi}{4}$	$\frac{11\pi}{6}$	$2\pi$
sin θ	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{1}{2}$	0
cos θ	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{1}{2}$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
tan θ	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	und	$-\sqrt{3}$	-1	$-\frac{\sqrt{3}}{3}$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	und	$-\sqrt{3}$	-1	$-\frac{\sqrt{3}}{3}$	0
csc θ	und	2	$\sqrt{2}$	$\frac{2\sqrt{3}}{3}$	1	$\frac{2\sqrt{3}}{3}$	$\sqrt{2}$	2	und	-2	$-\sqrt{2}$	$-\frac{2\sqrt{3}}{3}$	-1	$-\frac{2\sqrt{3}}{3}$	$-\sqrt{2}$	-2	und
sec θ	1	$\frac{2\sqrt{3}}{3}$	$\sqrt{2}$	2	und	-2	$-\sqrt{2}$	$-\frac{2\sqrt{3}}{3}$	-1	$-\frac{2\sqrt{3}}{3}$	$-\sqrt{2}$	-2	und	2	$\sqrt{2}$	$\frac{2\sqrt{3}}{3}$	1
cot θ	und	$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0	$-\frac{\sqrt{3}}{3}$	-1	$-\sqrt{3}$	und	$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0	$-\frac{\sqrt{3}}{3}$	-1	$-\sqrt{3}$	und
	<del>Q I</del>	Q I All +			<del>Q II</del>	Q II sin θ, csc θ + cos θ, sec θ } - tan θ, cot θ } -			<del>Q III</del>	Q III tan θ, cot θ + sin θ, csc θ } - cos θ, sec θ } -			<del>Q IV</del>	Q IV cos θ, sec θ + sin θ, csc θ } - tan θ, cot θ } -			<del>Q V</del>

Use chart to calculate exact values of

$$\sin \frac{11\pi}{6} = -\frac{1}{2}$$

$$\tan 420^\circ = \sqrt{3}$$

$$\sin 765^\circ = \frac{\sqrt{2}}{2}$$

$$\cos 225^\circ = -\frac{\sqrt{2}}{2}$$

$$\sec \frac{23\pi}{4} = \sqrt{2}$$

$$\cos\left(-\frac{13\pi}{4}\right) = -\frac{\sqrt{2}}{2}$$

$$\csc(-1350^\circ) = 1$$

$$\cot(-1080^\circ) = \text{und}$$

