

Trigonometry

Worksheet

Part 1: Use a unit circle to fill in the table with exact values.

HONORS →

θ (deg)	θ rad	$\cos(\theta)$	$\sin(\theta)$	$\tan(\theta)$	$\sec(\theta)$	$\csc(\theta)$	$\cot(\theta)$
0°	0	1	0	0	1	und	und
30°	$\frac{\pi}{6}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$	$\frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$	2	$\sqrt{3}$
45°	$\frac{\pi}{4}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1	$\frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{2}$	$\frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{2}$	1
60°	$\frac{\pi}{3}$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\sqrt{3}$	2	$\frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$	$\frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$
90°	$\frac{\pi}{2}$	0	1	und	und	1	0
120°	$\frac{2\pi}{3}$	$-\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$-\sqrt{3}$	-2	$\frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$	$\frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$
135°	$\frac{3\pi}{4}$	$-\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	-1	$\frac{-2}{\sqrt{2}} = \frac{-2\sqrt{2}}{2}$	$\frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{2}$	-1
150°	$\frac{5\pi}{6}$	$-\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$-\frac{1}{\sqrt{3}} = \frac{-\sqrt{3}}{3}$	$\frac{-2}{\sqrt{3}} = \frac{-2\sqrt{3}}{3}$	2	$\sqrt{3}$
180°	π	-1	0	-1	-1	und	und
210°	$\frac{7\pi}{6}$	$-\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	$\frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$	$\frac{-2}{\sqrt{3}} = \frac{-2\sqrt{3}}{3}$	-2	$\sqrt{3}$
225°	$\frac{5\pi}{4}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$	1	$\frac{-2}{\sqrt{2}} = \frac{-2\sqrt{2}}{2}$	$\frac{-2}{\sqrt{2}} = \frac{-2\sqrt{2}}{2}$	1
240°	$\frac{4\pi}{3}$	$-\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$	$\sqrt{3}$	-2	$\frac{-2}{\sqrt{3}} = \frac{-2\sqrt{3}}{3}$	$\frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$
270°	$\frac{3\pi}{2}$	0	-1	und	und	-1	0
300°	$\frac{5\pi}{3}$	$\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$	$-\sqrt{3}$	2	$\frac{-2}{\sqrt{3}} = \frac{-2\sqrt{3}}{3}$	$-\frac{1}{\sqrt{3}} = \frac{-\sqrt{3}}{3}$
315°	$\frac{7\pi}{4}$	$\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$	-1	$\frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{2}$	$\frac{-2}{\sqrt{2}} = \frac{-2\sqrt{2}}{2}$	-1
330°	$\frac{11\pi}{6}$	$\frac{\sqrt{3}}{2}$	$-\frac{1}{2}$	$-\frac{1}{\sqrt{3}} = \frac{-\sqrt{3}}{3}$	$\frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$	-2	$-\sqrt{3} = \frac{-\sqrt{3}}{1}$
360°	0	1	0	0	1	und	und