

TRIGONOMETRY UNIT CIRCLE

Reference Chart • $(x, y) = (\cos \theta, \sin \theta)$

I (+, +)
II (-, +)
III (-, -)
IV (+, -)
0
90
180
270

Deg	Rad	cos θ	sin θ
0	0	1	0
30	$\pi/6$	$\sqrt{3}/2$	$1/2$
45	$\pi/4$	$\sqrt{2}/2$	$\sqrt{2}/2$
60	$\pi/3$	$1/2$	$\sqrt{3}/2$
90	$\pi/2$	0	1
120	$2\pi/3$	$-1/2$	$\sqrt{3}/2$
135	$3\pi/4$	$-\sqrt{2}/2$	$\sqrt{2}/2$
150	$5\pi/6$	$-\sqrt{3}/2$	$1/2$
180	π	-1	0

Tangent $\tan \theta = \sin \theta / \cos \theta$
Reciprocal $\csc \theta = 1 / \sin \theta$
Pythagorean $\sin^2\theta + \cos^2\theta = 1$
Secant $\sec \theta = 1 / \cos \theta$
Cotangent $\cot \theta = 1 / \tan \theta$
Coordinates $(x, y) = (\cos, \sin)$