

Trig

Trig Graphs

Amplitude = a

Period = T

$\sin, \cos = \frac{2\pi}{T}$ $\tan = \frac{\pi}{T}$

Phase (shift) = $P = -\frac{c}{b}$

Interval

\sin, \cos $0 \leq bxt + c \leq 2\pi$

\tan $-\frac{\pi}{2} \leq bxt + c \leq \frac{\pi}{2}$

Right Triangle

$adj^2 + opp^2 = hyp^2$

Exam 1

- 6.1 Angles
- 6.2 Trigonometric Functions of Angles
- 6.3 Trigonometric Functions of Real Numbers
- 6.4 Values of Trigonometric Functions
- 6.5 Trigonometric Graphs
- 6.6 Additional Trigonometric Graphs
- 6.7 Applied Problems

Special Values of Trig Functions

	0	$\frac{\pi}{6}$ 30	$\frac{\pi}{4}$ 45	$\frac{\pi}{3}$ 60	$\frac{\pi}{2}$ 90
$\sin \theta$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
$\cos \theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
$\tan \theta$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	—
$\cot \theta$	—	$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0
$\sec \theta$	1	$\frac{2\sqrt{3}}{3}$	$\sqrt{2}$	2	—
$\csc \theta$	—	2	$\sqrt{2}$	$\frac{2\sqrt{3}}{3}$	1

Fundamental Identities

$\csc \theta = \frac{1}{\sin \theta}$

$\sec \theta = \frac{1}{\cos \theta}$

$\cot \theta = \frac{1}{\tan \theta}$

$\tan \theta = \frac{\sin \theta}{\cos \theta}$

$\cot \theta = \frac{\cos \theta}{\sin \theta}$

$\sin^2 \theta + \cos^2 \theta = 1$

$1 + \tan^2 \theta = \sec^2 \theta$

$1 + \cot^2 \theta = \csc^2 \theta$

Formulas for Negatives

$\sin(-t) = -\sin t$

$\cos(-t) = \cos t$

$\tan(-t) = -\tan t$

$\cot(-t) = -\cot t$

$\sec(-t) = \sec t$

$\csc(-t) = -\csc t$

Arc Length

$s = r \cdot \theta$

θ is always radian

Area of an Arc

$A = \frac{1}{2} r^2 \theta$

Conversion

$\frac{\pi}{180}^\circ$

degree \longleftrightarrow radian
180° π