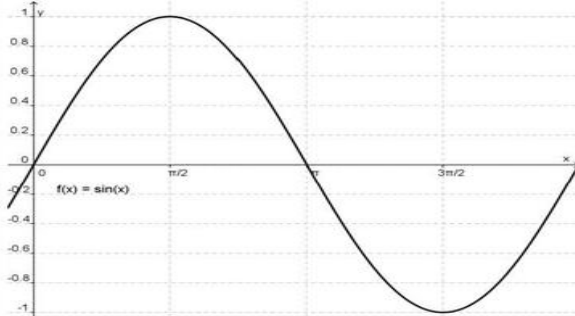


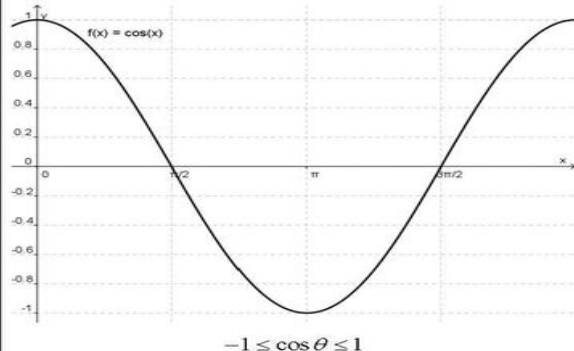
Graphs

(1) Sine



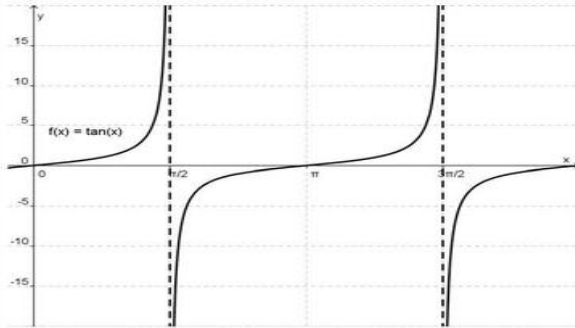
$$-1 \leq \sin \theta \leq 1$$

(2) Cosine



$$-1 \leq \cos \theta \leq 1$$

(3) Tangent



$$-\infty \leq \tan \theta \leq \infty$$

General Form:

$$y = a \sin b(x \pm \theta) + c$$

$$y = a \cos b(x \pm \theta) + c$$

$$y = a \tan b(x \pm \theta) + c$$

Where a affects the amplitude,

b affects the frequency (no. of cycles),

c shifts the graph up or down,

θ shifts the graph left or right (phase shift).

For tangent graph, there are 2 asymptotes for $0 \leq x \leq 2\pi$.

Conversion between angles in degrees and radians

x°	60°	120°	180°	240°	300°	360°
$x \text{ rad}$	$\frac{\pi}{3}$	$\frac{2\pi}{3}$	$\frac{3\pi}{3}$	$\frac{4\pi}{3}$	$\frac{5\pi}{3}$	$\frac{6\pi}{3}$

$$\pi \text{ rad} = 180^\circ$$

x°	45°	90°	135°	180°	225°	270°	315°	360°
$x \text{ rad}$	$\frac{\pi}{4}$	$\frac{2\pi}{4}$	$\frac{3\pi}{4}$	$\frac{4\pi}{4}$	$\frac{5\pi}{4}$	$\frac{6\pi}{4}$	$\frac{7\pi}{4}$	$\frac{8\pi}{4}$

x°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	360°
$x \text{ rad}$	$\frac{\pi}{6}$	$\frac{2\pi}{6}$	$\frac{3\pi}{6}$	$\frac{4\pi}{6}$	$\frac{5\pi}{6}$	$\frac{6\pi}{6}$	$\frac{7\pi}{6}$	$\frac{8\pi}{6}$	$\frac{9\pi}{6}$	$\frac{10\pi}{6}$	$\frac{11\pi}{6}$	$\frac{12\pi}{6}$