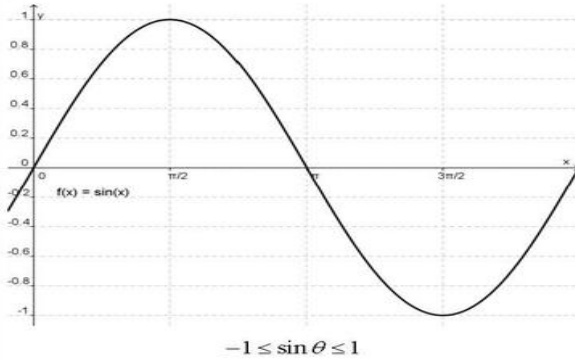
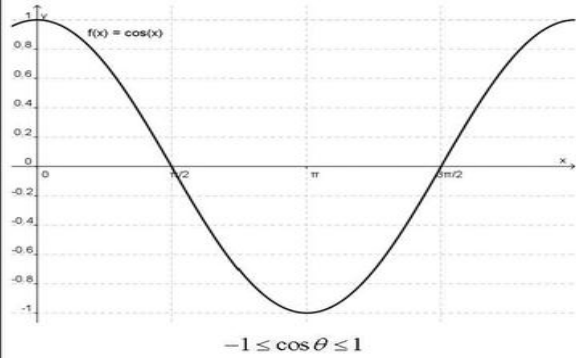


Graphs

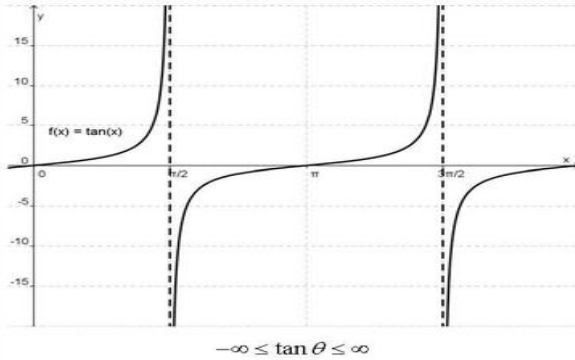
(1) Sine



(2) Cosine



(3) Tangent



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° |
| $x \text{ rad}$ | $\frac{\pi}{6}$ | $\frac{2\pi}{6}$ | $\frac{3\pi}{6}$ | $\frac{4\pi}{6}$ | $\frac{5\pi}{6}$ | $\frac{6\pi}{6}$ | $\frac{7\pi}{6}$ | $\frac{8\pi}{6}$ | $\frac{9\pi}{6}$ | $\frac{10\pi}{6}$ | $\frac{11\pi}{6}$ | $\frac{12\pi}{6}$ |