

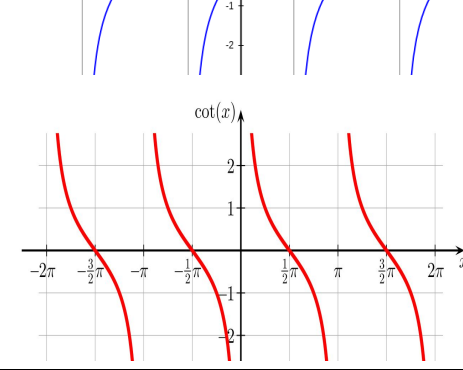
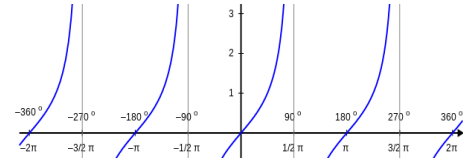
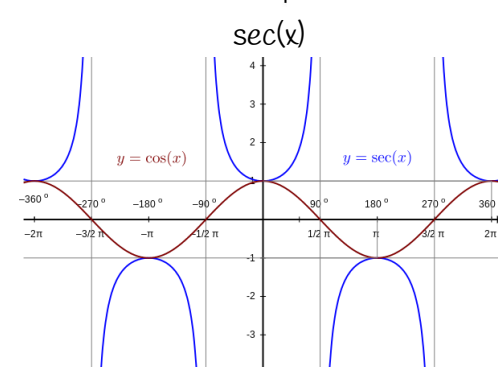
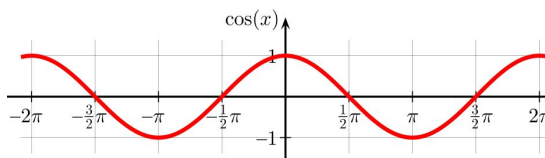
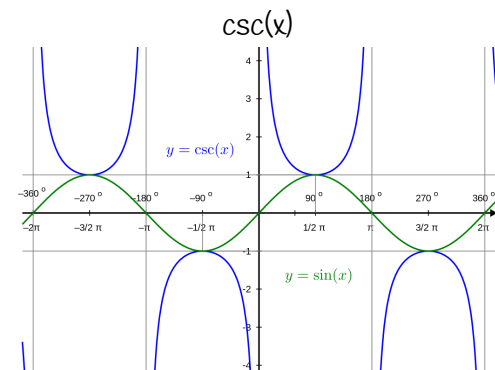
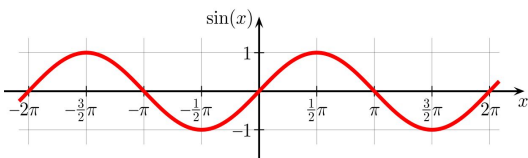
-- Graphing Trig Functions --



Sine Graph

Cosine Graph

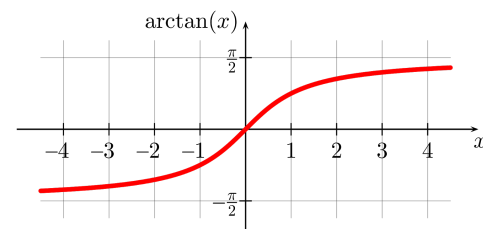
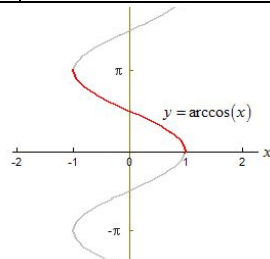
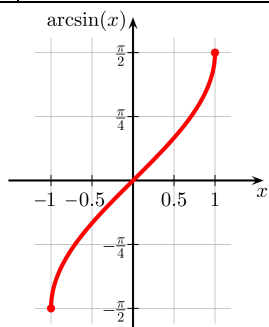
Tangent Graph



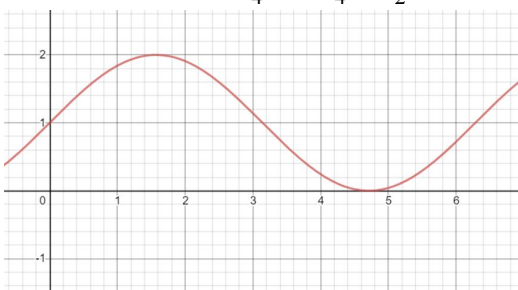
x	y	Mother Function
0	0	$y = a \sin b(\theta - h) + k$
$\frac{\pi}{6}$	$\frac{1}{2}$	Period: $2\pi/b$
$\frac{\pi}{4}$	$\frac{\sqrt{2}}{2}$	Amplitude: $ a $
$\frac{\pi}{3}$	$\frac{\sqrt{3}}{2}$	Vertical Shift: midline, $y=k$
$\frac{\pi}{2}$	1	Phase Shift: $\theta = h$

x	y	Mother Function
0	1	$y = a \cos b(\theta - h) + k$
$\frac{\pi}{2}$	0	Period: $2\pi/b$
π	-1	Amplitude: $ a $
$\frac{3\pi}{2}$	0	Vertical Shift: midline, $y=k$
2π	1	Phase Shift: $\theta = h$

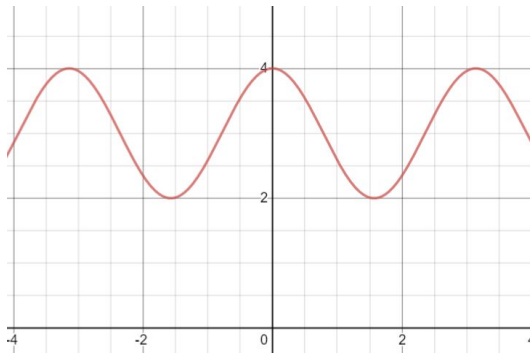
0	0	$y = a \tan b(\theta - h) + k$
$\frac{\pi}{4}$	1	VA: $x = \frac{n\pi}{2}$
$\frac{\pi}{2}$	VA	Period: π/b
$\frac{3\pi}{4}$	-1	Amplitude: $ a $
π	0	Vertical Shift: midline, $y=k$
$\frac{3\pi}{2}$	VA	Phase Shift: $\theta = h$



$y = \frac{1}{2} \sin \theta + 1$
 $a = \frac{1}{2}$ (amplitude)
 $b = 1$ (no change in period = 2π)
 $k = 1$, thus $y = 1$ (midline)
 *count is $\frac{\text{period}}{4} = \frac{2\pi}{4} = \frac{\pi}{2}$



$y = \cos(2x - 2\pi) + 3$
 $y = \cos 2(x - \pi) + 3$
 $a = 1$ (amplitude)
 $b = 2$ (period = $\frac{2\pi}{2} = \pi$)
 $k = 3$, thus $y = 3$ (midline)
 *count is $\frac{\text{period}}{4} = \frac{\pi}{4}$



$y = 2 \tan(\theta - \frac{\pi}{4}) - 2$
 $a = 2$ (amplitude)
 $b = 1$ (no change in period = π)
 $h = \frac{\pi}{4}$ (shift right $\frac{\pi}{4}$)
 $k = -2$, thus $y = -2$ (midline)

