

$y = \text{trig } \theta$ → **Period**

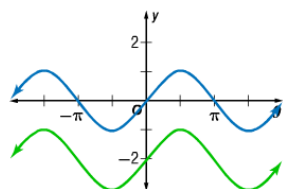
$y = a \sin b(\theta - h) + k$

amplitude:
 $0 < a < 1$ Compress toward x-axis
 stretches away from x-axis
 $a > 1$
 reflects over x-axis
 $a < 0$

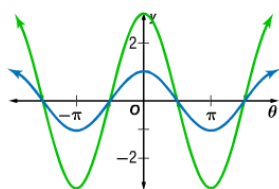
horizontal shift / phase shift
 $\theta - h \rightarrow$ shift right
 $\theta + h \rightarrow$ shift left
 $(\theta - h)$

vertical shift
 $+$ ↑
 $-$ ↓

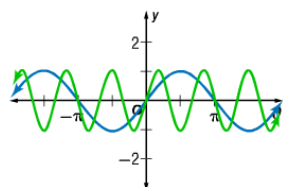
$b < 1$ stretches function away from axis
 $b > 1$ compresses toward axis



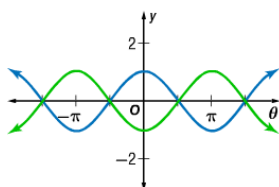
$$y = \sin \theta - 2$$



$$y = 3 \cos \theta$$



$$y = \sin 3\theta$$



$$y = \cos(\theta - \pi)$$

Let's graph $y = 2 \sin \left[3 \left(\theta - \frac{\pi}{2} \right) \right] - 1$.

Parent Function

$$y = \sin \theta$$

Related Function

$$y = 2 \sin \left[3 \left(\theta - \frac{\pi}{2} \right) \right] - 1$$

