

## Vertical and Horizontal Shifts

1.  $y = \sin \theta - 3$

2.  $y = 2 \sin x + 2$

3.  $y = -3 \cos (x) + 2$

4.  $y = \sin \left( \theta + \frac{\pi}{2} \right)$

5.  $y = \cos \left( \theta - \frac{\pi}{2} \right)$

6.  $y = \sin (\theta - \pi)$

7.  $y = 2 \sin (\theta + \pi) - 2$

8.  $y = -3 \sin \left( \theta + \frac{\pi}{4} \right) + 2$

9.  $y = -3 \cos (\theta - \pi) + 2$

10.  $y = 3 \sin \left( \theta + \frac{\pi}{2} \right) - 1$

11.  $y = \cos \left( \theta + \frac{3\pi}{2} \right)$

12.  $y = \sin (\theta - \pi) + 4$

## Amplitude and Period Change

Graph each function:

1.  $y = \sin x$

2.  $y = 5 \cos \theta$

3.  $y = -4 \sin \theta$

4.  $y = -3 \cos x$

5.  $y = \sin (2\theta)$

6.  $y = \cos (4\theta)$

7.  $y = \sin \left( \frac{1}{2} \theta \right)$

8.  $y = -4 \cos (4x)$

9.  $y = \sin 8x$

10.  $y = \cos \left( \frac{1}{2} \theta \right)$

11.  $y = -3 \sin \left( \frac{1}{4} \theta \right)$

12.  $y = 2 \cos (4x)$