

Unit 5.3 Graph Phase & Vertical Shift (Sin & Cos) PRACTICE

Period _____

Find the phase shift in radians, the vertical shift, the minimum and maximum values, two vertical asymptotes (if any), and the transformations required to obtain the graph starting with a basic trig function.

1) $y = 3 + \cos\left(\theta - \frac{3\pi}{4}\right)$

Phase Shift:

Vert. Shift:

Min:

Max:

Transformation:

2) $y = \sin \theta + 5$

Phase Shift:

Vert. Shift:

Min:

Max:

Transformation:

3) $y = \sin\left(\theta - \frac{5\pi}{4}\right) + 2$

Phase Shift:

Vert. Shift:

Min:

Max:

Transformation:

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

Phase Shift:

Vert. Shift:

Min:

Max:

Transformation:

5) $y = \cos\left(\theta - \frac{\pi}{3}\right) - 4$

Phase Shift:

Vert. Shift:

Min:

Max:

Transformation:

6) $y = \sin\left(\theta - \frac{5\pi}{6}\right) + 3$

Phase Shift:

Vert. Shift:

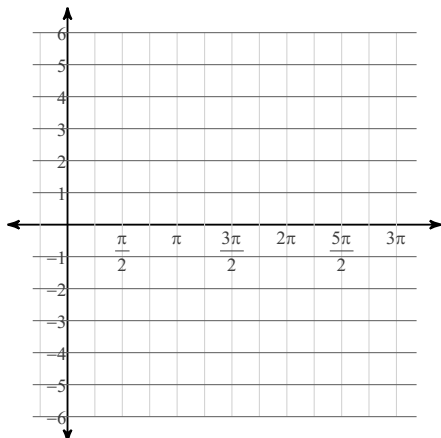
Min:

Max:

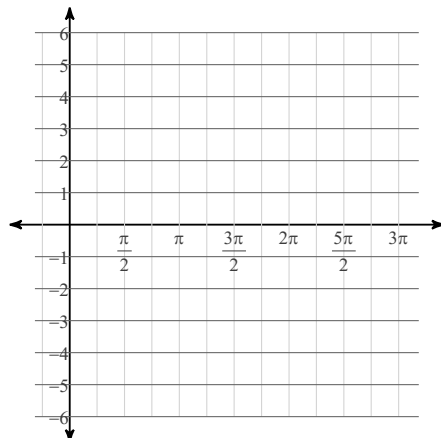
Transformation:

Graph each function using radians.

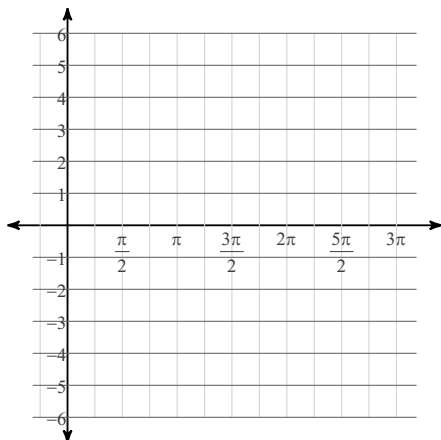
7) $y = -1 + \cos\left(\theta + \frac{5\pi}{3}\right)$



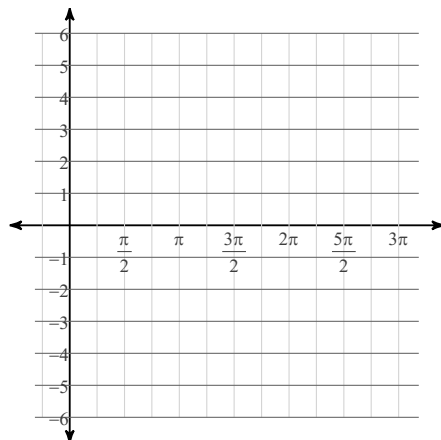
8) $y = 2 + \cos\left(\theta + \frac{7\pi}{6}\right)$



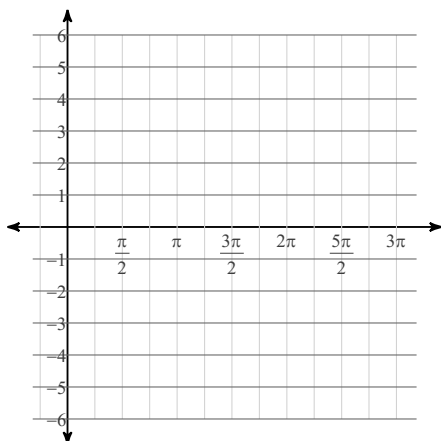
9) $y = -1 + \cos\left(\theta + \frac{7\pi}{4}\right)$



10) $y = \sin\left(\theta + \frac{4\pi}{3}\right) + 1$



11) $y = \cos\left(\theta + \frac{2\pi}{3}\right) + 1$



12) $y = \cos\left(\theta + \frac{5\pi}{6}\right) - 2$

