

Phase Shifts

1. Graph the sine and cosine functions. Then, state the range.

a. $y = 3\sin\left(x - \frac{\pi}{2}\right) + 2$

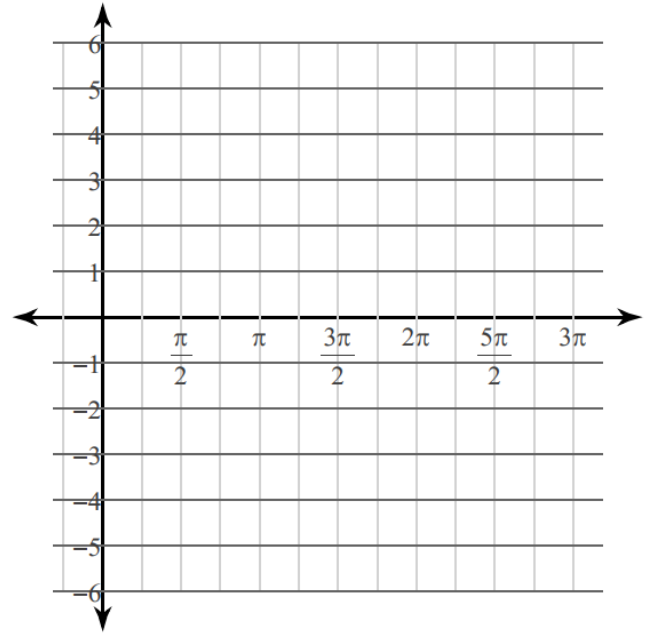
Vertical Shift: _____

Amplitude: _____

Phase Shift: _____

Period: _____

Range: _____



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

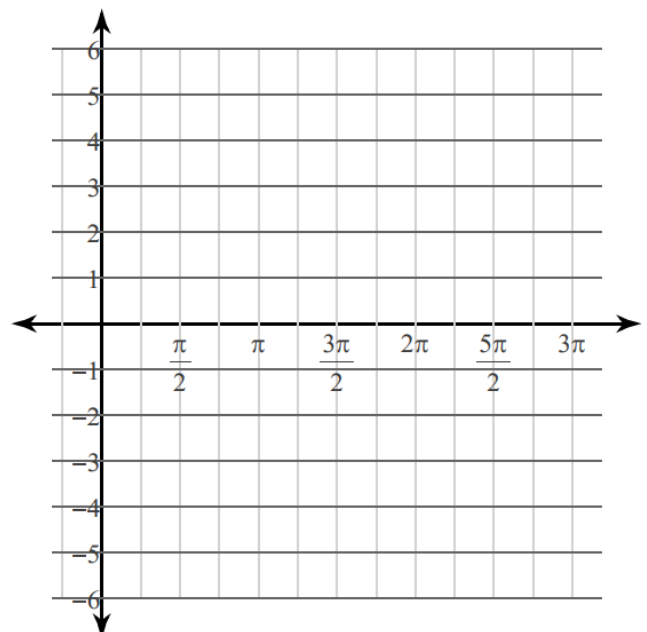
Vertical Shift: _____

Amplitude: _____

Phase Shift: _____

Period: _____

Range: _____



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

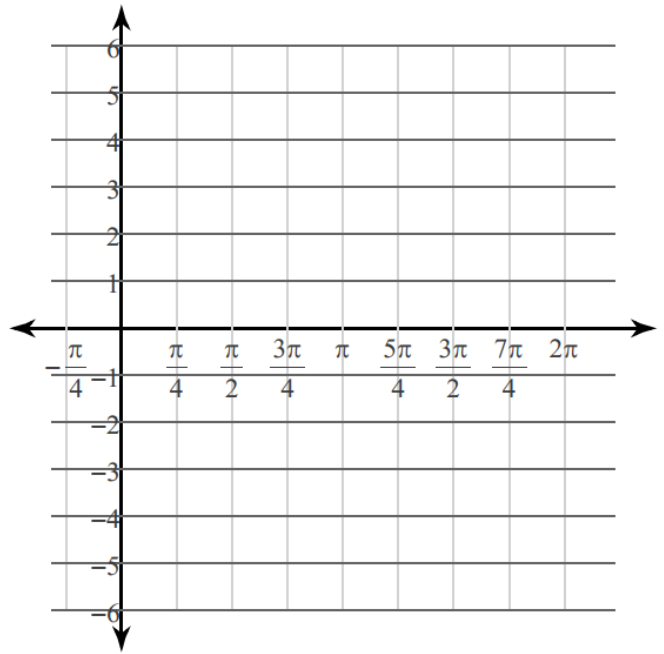
Vertical Shift: _____

Amplitude: _____

Phase Shift: _____

Period: _____

Range: _____



d. $y = \cos\left(\frac{x}{4} - \frac{\pi}{4}\right) + 1$

Vertical Shift: _____

Amplitude: _____

Phase Shift: _____

Period: _____

Range: _____

