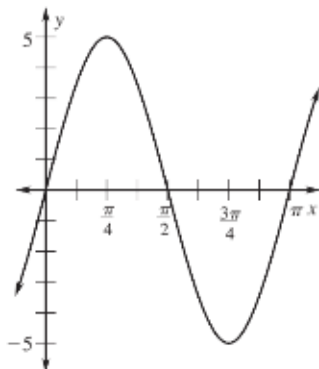


4.5 Graphs of Sine and Cosine Functions Worksheet-Day 4

Writing Equations of Sine and Cosine Functions

Examine the graph below and determine the amplitude, period, phase shift, and vertical shift of each using **COSINE** as the parent function. Then write an equation of the function.

1.



Amplitude: _____

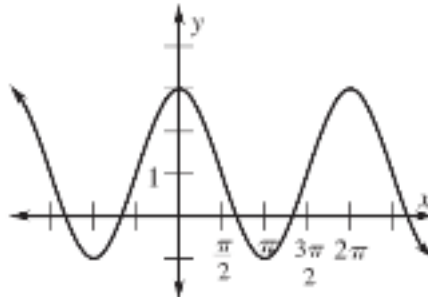
Period: _____

Phase Shift: _____

Vertical Shift: _____

Function: _____

2.



Amplitude: _____

Period: _____

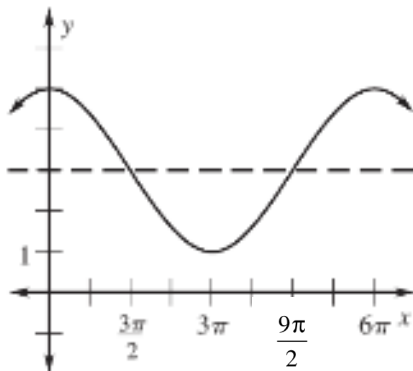
Phase Shift: _____

Vertical Shift: _____

Function: _____

Examine the graph below and determine the amplitude, period, phase shift, and vertical shift of each using **SINE** as the parent function. Then write an equation of the function.

3.



Amplitude: _____

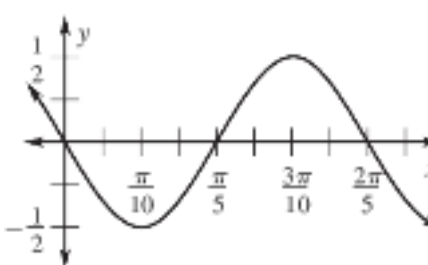
Period: _____

Phase Shift: _____

Vertical Shift: _____

Function: _____

4.



Amplitude: _____

Period: _____

Phase Shift: _____

Vertical Shift: _____

Function: _____

Identify the amplitude, period, phase shift and vertical shift of the following trig functions.

<p>5. $y = -10 \cos\left(\frac{x}{6}\right)$</p> <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p>	<p>6. $y = 5 - 2 \sin\left(\frac{2x}{3}\right)$</p> <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p>
<p>7. $y = 3 \cos(6x + \pi)$</p> <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p>	<p>8. $y = -4 \sin\left(\frac{2}{3}x - \frac{\pi}{3}\right)$</p> <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p>

Given the following information about each trig function, write a possible equation for each.

<p>9. Sine Function</p> <p>amplitude = $\frac{1}{2}$</p> <p>period = $\frac{\pi}{3}$</p> <p>vertical shift = -4</p>	<p>10. Sine Function</p> <p>amplitude = 7</p> <p>period = 4π</p> <p>phase shift = $-\frac{\pi}{3}$</p>
<p>11. Cosine Function</p> <p>amplitude = 1</p> <p>period = 2π</p> <p>phase shift = $\frac{5\pi}{6}$</p> <p>vertical shift = 3</p>	<p>12. Cosine Function</p> <p>amplitude = 3</p> <p>period = π</p> <p>phase shift = $-\pi$</p> <p>vertical shift = -1.5</p>