

Graph the following equations. State the domain, range, amplitude, period, phase shift, and vertical shift of each.

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

GRAPH

Amplitude:

Period:

Phase Shift:

Vertical Shift:

Domain:

Range:

2.  $y = 2\tan(2\theta - 90)$

GRAPH

Amplitude:

Period:

Phase Shift:

Vertical Shift:

Domain:

Range:

3.  $y = \frac{1}{2}\cos\left(x - \frac{\pi}{6}\right) - 3$

GRAPH

Amplitude:

Period:

Phase Shift:

Vertical Shift:

Domain:

Range:

Given the following information, write an equation.

4.  $y = A \sin B(x+C) + D$

a. amplitude = 3, period =  $4\pi$ , phase shift =  $\frac{\pi}{3}$ , vertical shift = -4

b. amplitude = 17, period =  $\frac{\pi}{4}$ , phase shift =  $-\frac{\pi}{3}$ , vertical shift = 2

5.  $y = A \cos B(\theta+C) + D$

a. amplitude = 2, period =  $180^\circ$ , phase shift =  $45^\circ$ , vertical shift = -1

b. amplitude = 7, period =  $225^\circ$ , phase shift =  $-90^\circ$ , vertical shift = 8

6. Identify the amplitude, period, phase shift, vertical shift, domain, range and write an equation for the **sine** curve.

Amplitude:

Period:

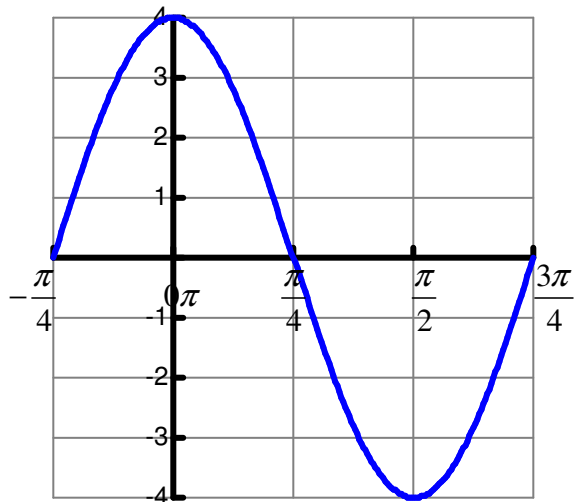
Phase Shift:

Vertical Shift:

Equation:

Domain:

Range:



7. Identify the amplitude, period, phase shift, vertical shift, domain, range and write an equation for the **sine** curve.

Amplitude:

Period:

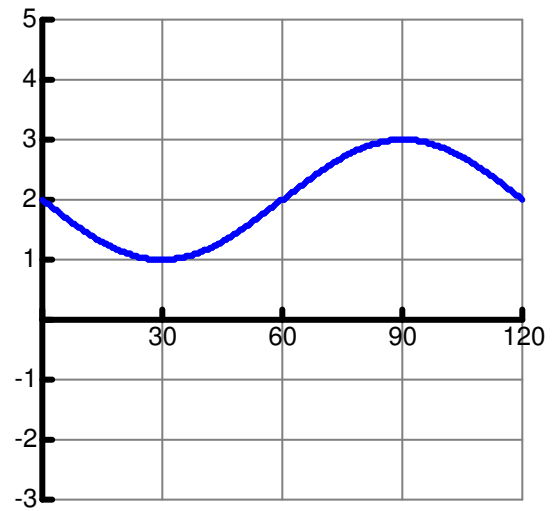
Phase Shift:

Vertical Shift:

Equation:

Domain:

Range:



8. Identify the amplitude, period, phase shift, vertical shift, domain, range and write an equation for the **cosine** curve.

Amplitude:

Period:

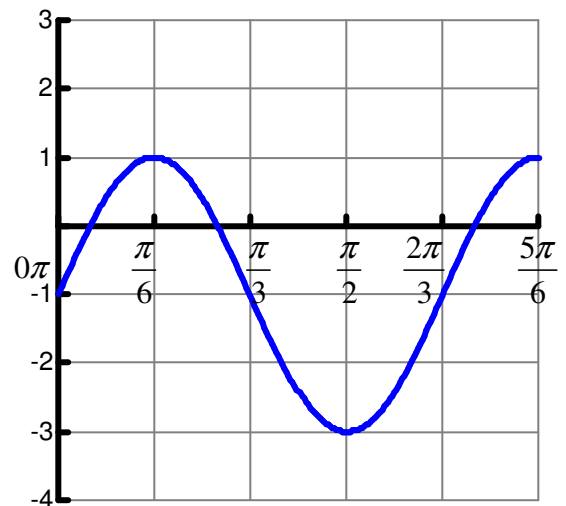
Phase Shift:

Vertical Shift:

Equation:

Domain:

Range:



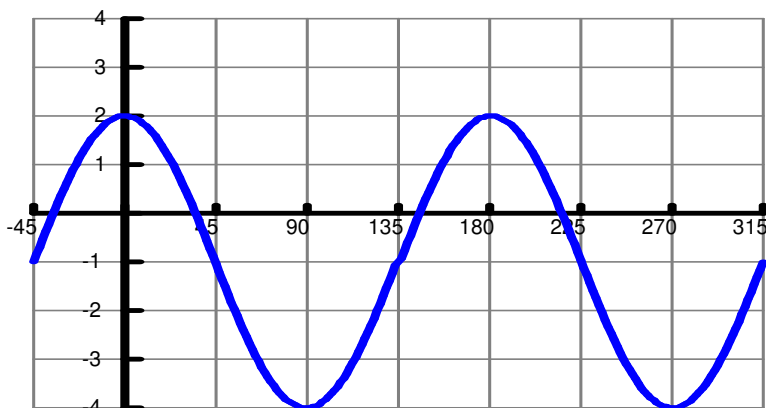
9. Use the graph to the right to answer the questions that follow.

a. Find:

Amplitude:

Period:

Vertical shift:



b. Write a **sine** equation for this function.

c. Write a **cosine** equation for this function.

10. Write an equation of a sine function with amplitude =  $\frac{3}{4}$ , period =  $2\pi$ , phase shift =  $\frac{\pi}{6}$ , vertical shift = -4.

11. Write an equation of a cosine function with amplitude = 4, period =  $60^\circ$ , phase shift =  $-30^\circ$ , vertical shift = 4.

12. Write an equation of a cosecant function with a period =  $\frac{\pi}{2}$ , phase shift =  $-\pi$ , and a corresponding sine function with an amplitude of 3.

13. Write an equation of a tangent function with period =  $45^\circ$ , phase shift =  $180^\circ$ , vertical shift = 1.

Identify the domain, range, amplitude, period, phase shift, vertical shift, and write an equation for each graph.

14.

Amplitude:

Period:

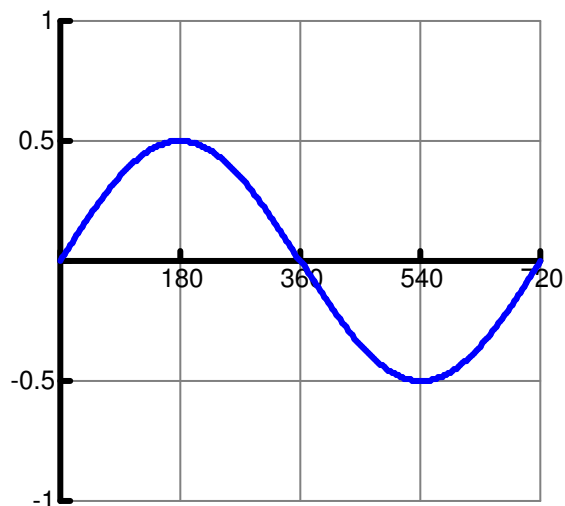
Phase Shift:

Vertical Shift:

Domain:

Range:

Equation:



15.

Amplitude:

Period:

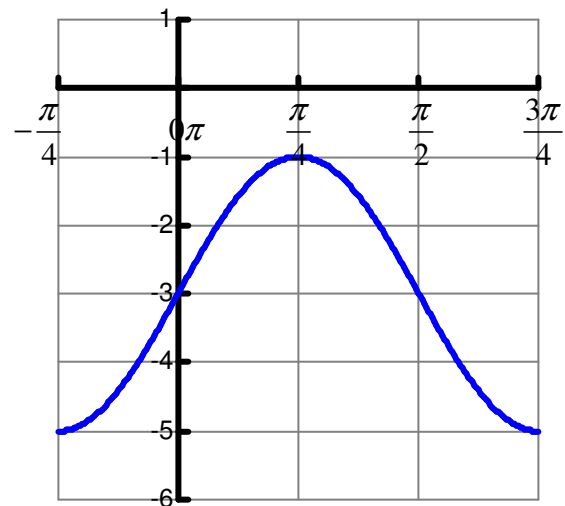
Phase Shift:

Vertical Shift:

Domain:

Range:

Equation:



16.

Amplitude:

Period:

Phase Shift:

Vertical Shift:

Domain:

Range:

Equation:

