

Teresa Fuson

Provide the requested information for each of the following.

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

$\frac{\pi}{4}x = \frac{-\pi}{2}$

$x = -2$

a. Period: 8

b. Domain: $[-2, 6]$

c. Phase Shift: -2

d. Range: $[-1, 5]$

e. Reflect across x-axis? yes

f. Vertical Shift: 2

g. Amplitude: 3

2. $y = -2 \cos(\theta) - 1$

$\theta = 0^\circ$

$\theta = \frac{360^\circ}{\Rightarrow}$

a. Period: 120°

b. Domain: $[0^\circ, 120^\circ]$

c. Phase Shift: 0°

d. Range: $[-3, 1]$

e. Reflect across x-axis? yes

f. Vertical Shift: -1

g. Amplitude: 2

Provide the requested information for each of the following.

3. If the range of a sine function is $[-22, -10]$, what is the vertical shift?

$$\frac{-22 + (-10)}{2} = \boxed{-16}$$

4. If the range of a cosine function is $[-14, 8]$, what is the vertical shift?

$$\frac{-14 + 8}{2} = \boxed{-3}$$

5. If the domain of a cosine function is $\left[\frac{\pi}{4}, \frac{9\pi}{2}\right]$, what is the period?

$$\frac{18\pi}{4} - \frac{\pi}{4} = \boxed{\frac{17\pi}{4}}$$

6. If the domain of a sine function is $[-\pi, 5\pi]$, what is the period?

$$5\pi - (-\pi) = \boxed{6\pi}$$

7. If the horizontal axis of a cosine function is at $y = -2$ and the maximum value is at 6, then what is the amplitude?

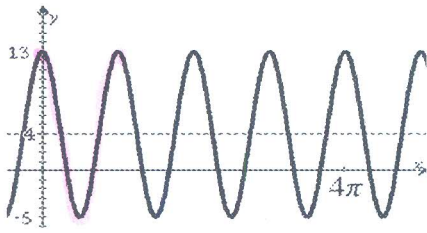
$$6 - (-2) = \boxed{8}$$

8. If the horizontal axis of a sine function is at $y = 3$ and the minimum value of the function is at -7, then what is the amplitude?

$$3 - (-7) = \boxed{10}$$

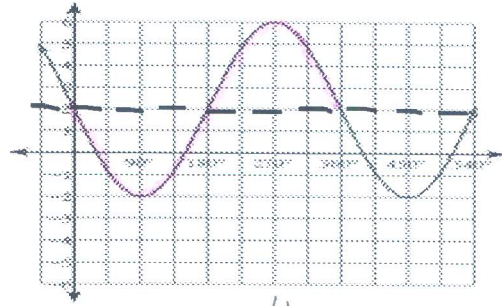
Provide the requested information for each of the following.

9. Cosine Graph -



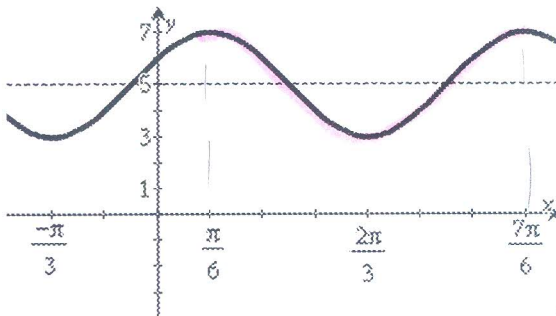
- a. Amplitude: $13 - 4 = 9$
- b. Reflect across x-axis? no
- c. Phase Shift: 0
- d. Domain: $[0, \pi]$
- e. Period: π
- f. Vertical Shift: 4
- g. Range: $[-5, 13]$

10. Sine Graph -



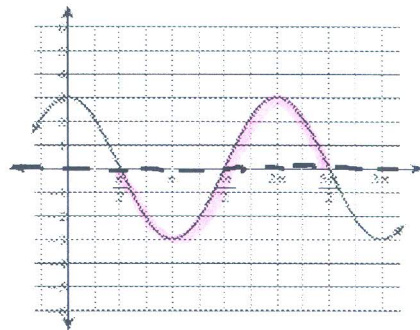
- a. Amplitude: 4
- b. Reflect across x-axis? yes
- c. Phase Shift: 0°
- d. Domain: $[0, 360°]$
- e. Period: 360°
- f. Vertical Shift: 2
- g. Range: $[-2, 6]$

11. Cosine Graph



- a. Amplitude: 2
- b. Reflect over horizontal axis? no
- c. Phase Shift: $\pi/6$
- d. Domain: π
- e. Period: $[\pi/6, 7\pi/6]$
- f. Vertical Shift: 5
- g. Range: $[3, 7]$

12. Sine Graph



- a. Amplitude: 3
- b. Reflect over horizontal axis? yes
- c. Phase Shift: $\pi/2$
- d. Domain: $[\pi/2, 5\pi/2]$
- e. Period: 2π
- f. Vertical Shift: 0
- g. Range: $[-3, 3]$