

Identify the amplitude, period, frequency and vertical shift of each function.

1. $f(x) = 4 \sin(2x) - 7$

Amp: 4

Period: $\frac{2\pi}{2} = \pi$

Midline: $y = -7$

2. $g(x) = 8 \cos(5x) + 1$

Amp: 8

Period: $\frac{2\pi}{5}$

Midline: $y = 1$

3. $y = -12 \sin\left(\frac{1}{3}x\right)$

Amp: 12

Period: $\frac{2\pi}{(\frac{1}{3})} = 2\pi \left(\frac{3}{1}\right) = 6\pi$

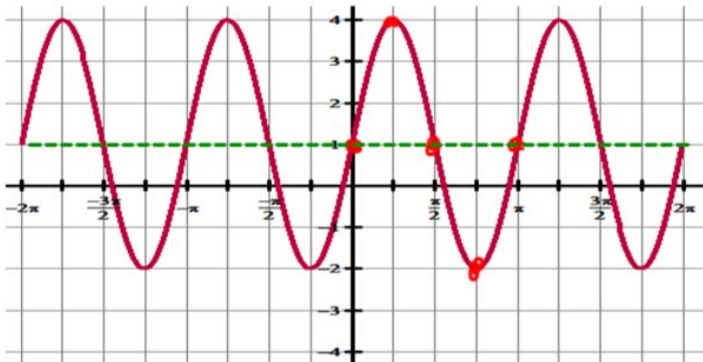
Midline: $y = 0$

Identify the given information and graph the trig function.

4. $f(x) = 3 \sin 2x + 1$

Amp: 3 Period: $\frac{2\pi}{2} = \pi$

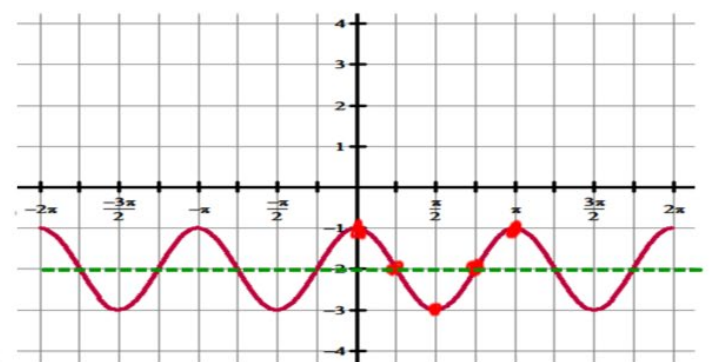
Midline: $y = 1$



5. $g(x) = \cos(2x) - 2$

Amp: 1 Period: $\frac{2\pi}{2} = \pi$

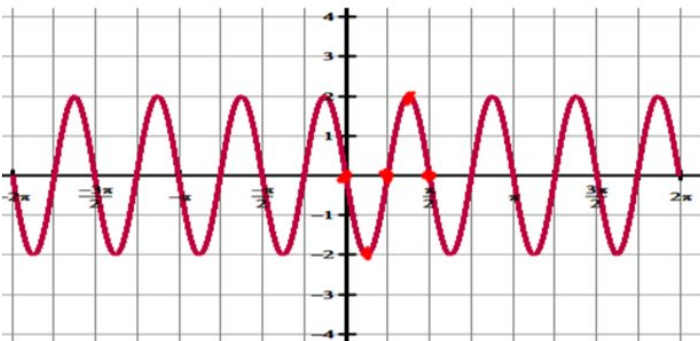
Midline: $y = -2$



6. $f(x) = -2 \sin 4x$

Amp: 2 Period: $\frac{2\pi}{4} = \frac{\pi}{2}$

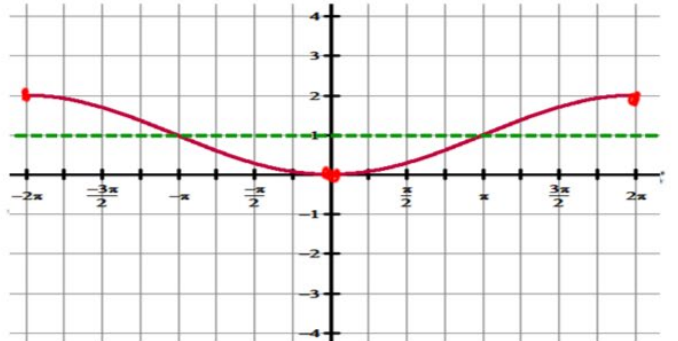
Midline: $y = 0$



7. $g(x) = -\cos\left(\frac{1}{2}x\right) + 1$

Amp: 1 Period: $\frac{2\pi}{(\frac{1}{2})} = 2\pi \left(\frac{2}{1}\right) = 4\pi$

Midline: $y = 1$



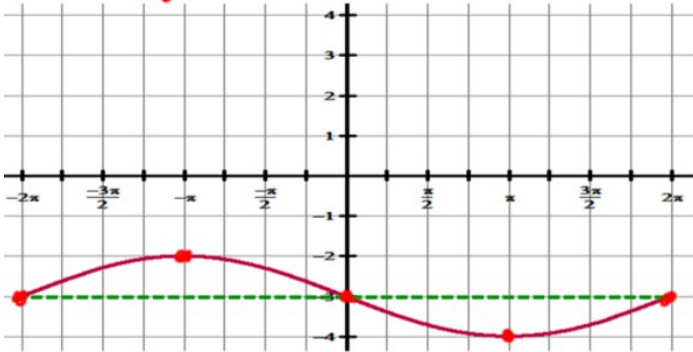
Identify the given information and graph the trig function.

8. $f(x) = -\sin\left(\frac{1}{2}x\right) - 3$

Amp: 1

Period: $\frac{2\pi}{(\frac{1}{2})} = 2\pi(\frac{2}{1}) = 4\pi$

Midline: $y = -3$

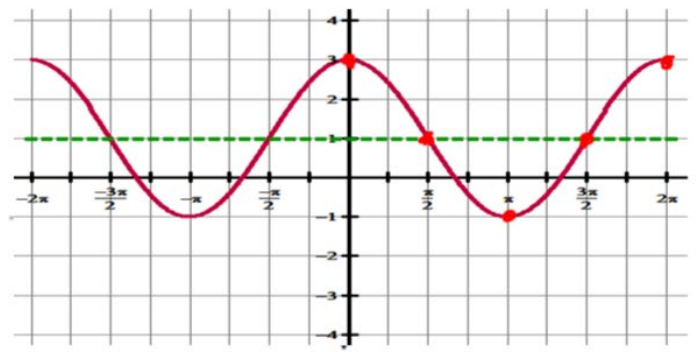


9. $g(x) = 1 + 2\cos(x) = 2\cos(x) + 1$

Amp: 2

Period: 2π

Midline: $y = 1$



Use the given information to create a sine function.

10.

Amplitude: 6

Period: 4π

Vertical Shift: down 4

$b \cdot 4\pi = \frac{2\pi}{b} \cdot b$
 $\frac{b \cdot 4\pi}{4\pi} = \frac{2\pi}{4\pi}$
 $b = \frac{1}{2}$

$y = 6 \sin\left(\frac{1}{2}x\right) - 4$

11.

Amplitude: 2

Period: 2π

Vertical Shift: up 9

$b \cdot 2\pi = \frac{2\pi}{b} \cdot b$
 $\frac{b \cdot 2\pi}{2\pi} = \frac{2\pi}{2\pi}$
 $b = 1$

$y = 2 \sin(x) + 9$

12.

Amplitude: 1

Period: 2

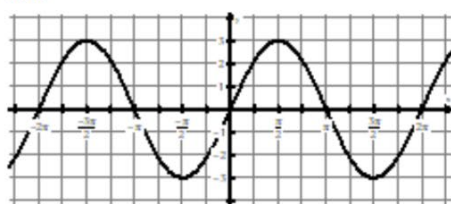
Vertical Shift: up 1

$b \cdot 2 = \frac{2\pi}{b} \cdot b$
 $\frac{b \cdot 2}{2} = \frac{2\pi}{2}$
 $b = \pi$

$f(x) = \sin(\pi x) + 1$

Write the equation of the following sine curves.

13.



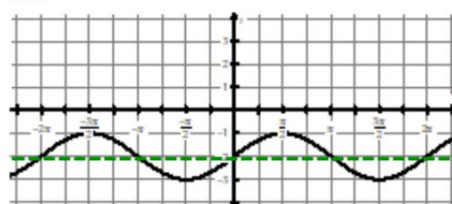
Amplitude: 3 $b \cdot 2\pi = \frac{2\pi}{b} \cdot b$

Period: 2π $\frac{b \cdot 2\pi}{2\pi} = \frac{2\pi}{2\pi}$

Midline: $y = 0$ $b = 1$

$y = 3 \sin(x)$

14.



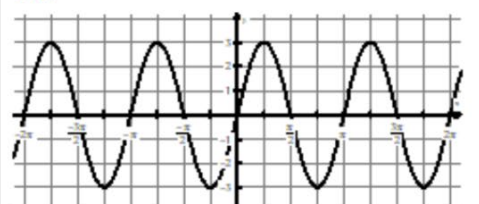
Amplitude: 1

Period: 2π

Midline: $y = -2$

$y = \sin(x) - 2$

15.



Amplitude: 3 $b \cdot \pi = \frac{2\pi}{b} \cdot b$

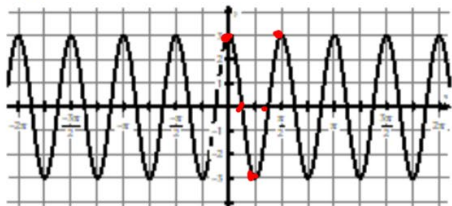
Period: π $\frac{b \cdot \pi}{\pi} = \frac{2\pi}{\pi}$

Midline: $y = 0$ $b = 2$

$y = 3 \sin(2x)$

Write the equation of the following *cosine* curves.

16.



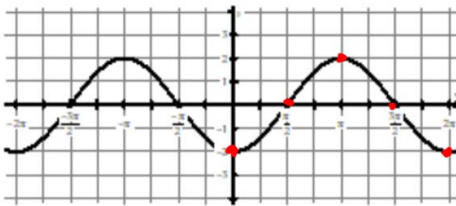
amp = 3
period = $\frac{\pi}{2}$

$$b \cdot \frac{\pi}{2} = \frac{2\pi}{c} \cdot b$$

$$b \cdot \frac{\pi}{2} = \frac{2\pi}{\frac{\pi}{2}}$$

$y = 3 \cos(4x)$ $b = 2\pi \left(\frac{2}{\pi}\right)$
 $b = 4$

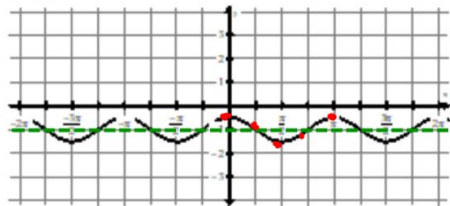
17.



amp = 2
period = 2π
Negative!

$y = -2 \cos(x)$

18.



amp = $\frac{1}{2}$ $b \cdot \pi = \frac{2\pi}{b} \cdot b$

period = π $b \cdot \pi = \frac{2\pi}{\frac{\pi}{b}} \cdot b$

midline: $y = -1$ $b = 2$

$y = \frac{1}{2} \cos(2x) - 1$