

PC 4-5 Practice Problems

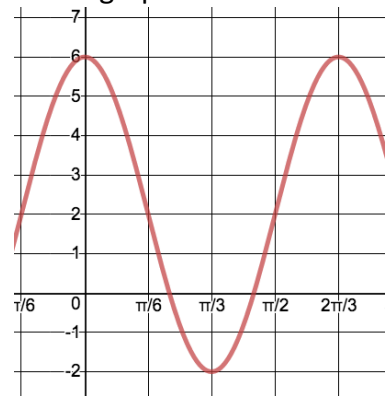
I can use the graph of a trigonometric function to find the zeros of the function

I can find an equation of a trigonometric function given a graph or description of the graph

1. Use the graph to find all the zeros on the interval $[0, 2\pi]$.

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

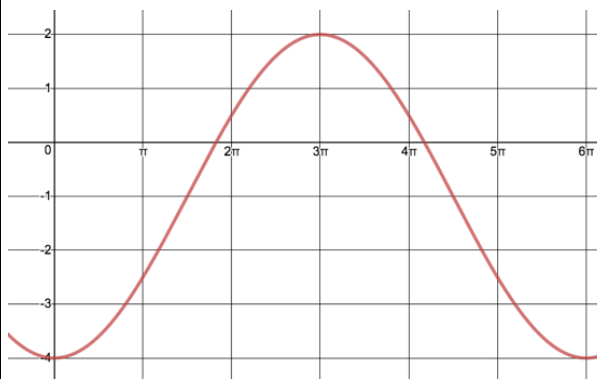
2. Write the equation given the graph.



3. Use the graph to find all the zeros on the interval $[0, 2\pi]$.

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

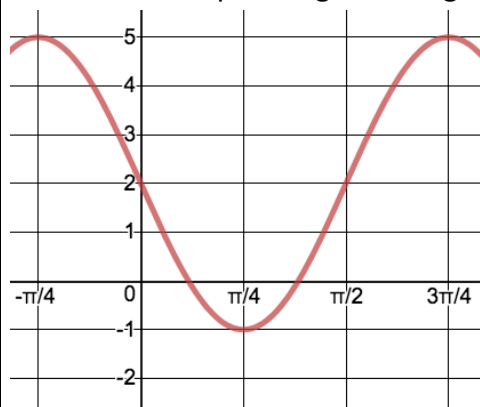
4. Write the equation given the graph.



5. Use the graph to find all the zeros on the interval $[0, 2\pi]$.

$$y = -8\cos\left(x - \frac{\pi}{9}\right)$$

6. Write the equation given the graph.



7. Find the equation of a negative sine function with amplitude 5, period = 4π , passing through the point $\left(\frac{\pi}{8}, 5\right)$.

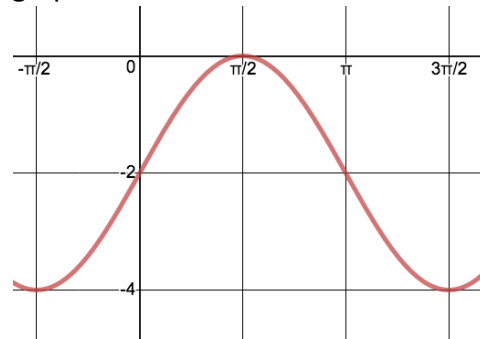
8. Find the equation of a negative cosine function with amplitude 2, period = π , passing through the point $\left(\frac{3\pi}{5}, -4\right)$.

9. Find the equation of a negative sine function with amplitude 3, period = 8π , passing through the point $\left(\frac{3\pi}{8}, -5\right)$.

10. Use the graph to find all the zeros on the interval $[0, 2\pi]$.

$$y = 3\cos\left(x - \frac{\pi}{12}\right)$$

11. Write the equation given the graph.



12. Find the equation of a negative cosine function with amplitude 8, period = π , passing through the point $\left(\frac{\pi}{2}, -3\right)$.

The general form of a sine function is $y = a \cdot \sin b(x - h) + k$. The format for cosine is identical. For each of these basic functions, **amplitude**=1, **period (wavelength)**= 2π , and **frequency** (# waves per 2π)=1.

13) Find the amplitude, period, and frequency of each equation shown below.

Equation	Amplitude	Period	Frequency
a) $y = 3\sin(2x)$			
b) $y = 4\sin(x - \pi) + 3$			
c) $y = \cos\frac{1}{3}x$			
d) $y = -3\cos 3\left(x + \frac{\pi}{2}\right)$			

14) Create an equation with the amplitude and period shown below. State the frequency of each.

Equation	Amplitude	Period	Frequency
a)	2.5	4π	
b)	3	π	
c)	1	$\pi/3$	
d)	4	10π	