

Warm Up

$$y = \sin x$$

x	y
0	
$\frac{\pi}{2}$	
π	
$\frac{3\pi}{2}$	

$$y = \cos x$$

x	y
0	
$\frac{\pi}{2}$	
π	
$\frac{3\pi}{2}$	

7-1 Graphing Trigonometric Functions

Objectives:

7-1a: I can recognize the parent graph of basic sine and cosine functions.

7-1b: I can use transformations to graph sine and cosine functions.

7-1c: I can identify characteristics of trigonometric functions.

$$f(x) = a \sin(b(x - h)) + k$$

a : Amplitude (vertical):

amplitude: $|a|$

b : Period Finder (horizontal):

Period: $\frac{2\pi}{|b|}$

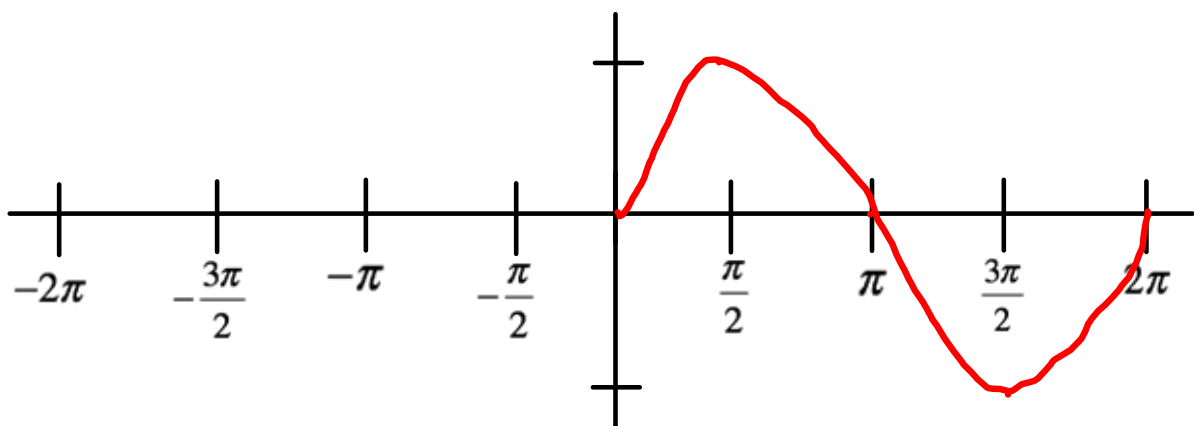
h : Phase Shift(horizontal):

k : Vertical Shift(vertical):

Video of sin graph and unit circle:

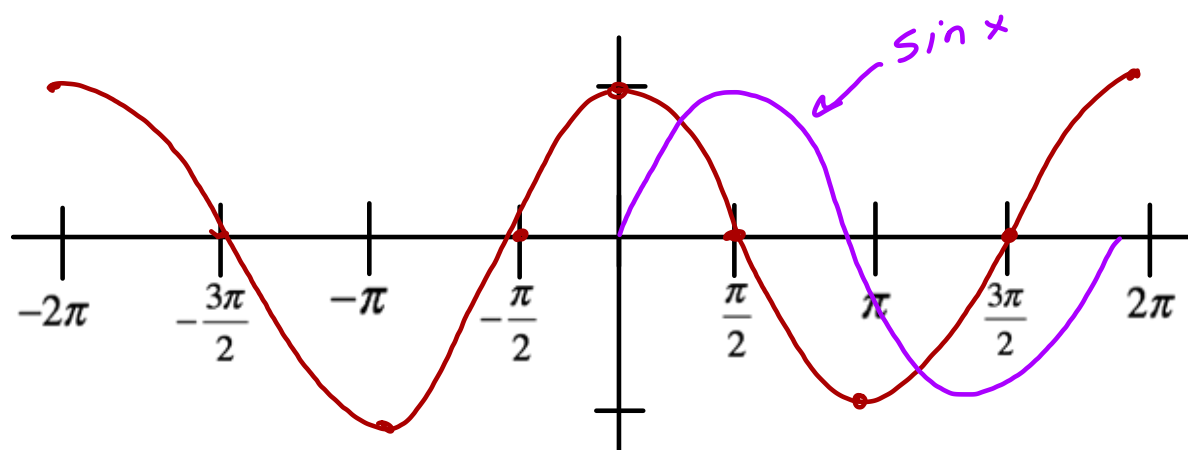
https://www.youtube.com/watch?v=Ohp6Okk_tww

Graph $y = \sin x$



Amplitude:

Period:

Graph $y = \cos x$ 

Amplitude:

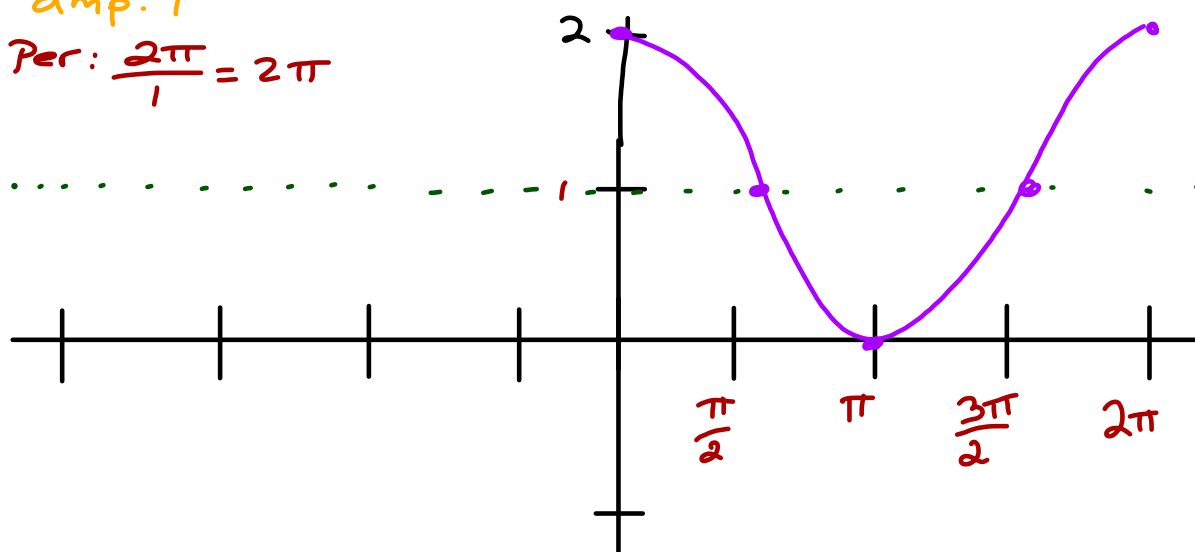
Period:

Feb 9-4:13 PM

<https://www.youtube.com/watch?v=-SeinqDcSq4>

Graph $y = \cos x + 1$

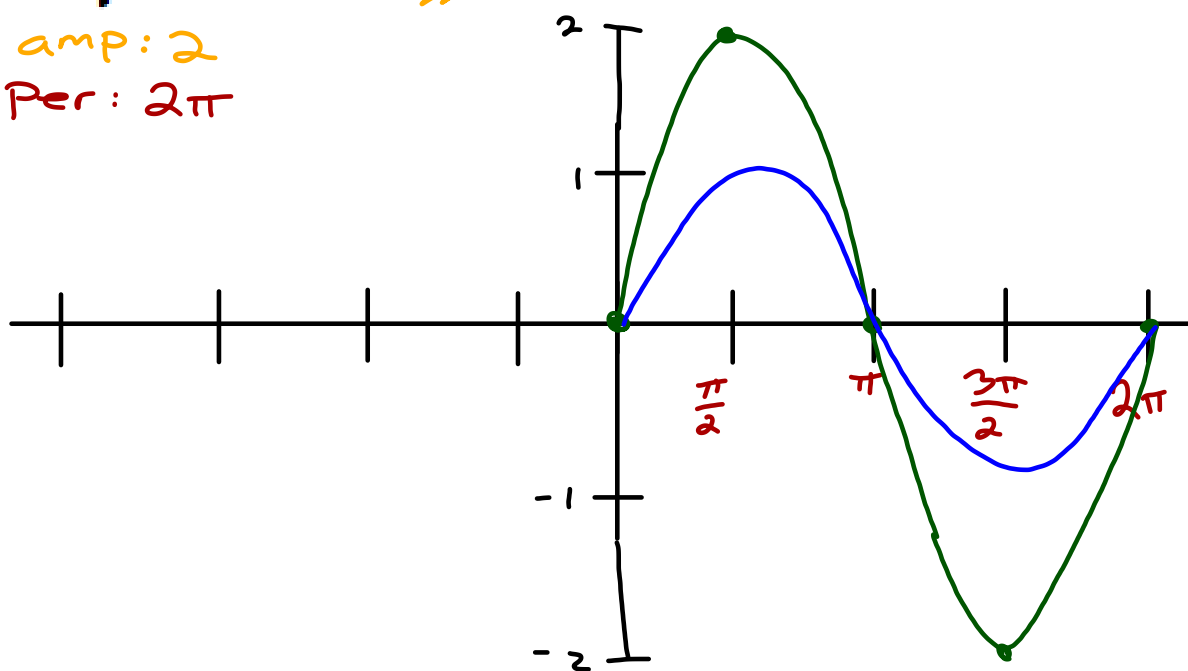
amp: 1
 Per: $\frac{2\pi}{1} = 2\pi$



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Graph $y = 2\sin \theta$

amp: 2
 Per: 2π

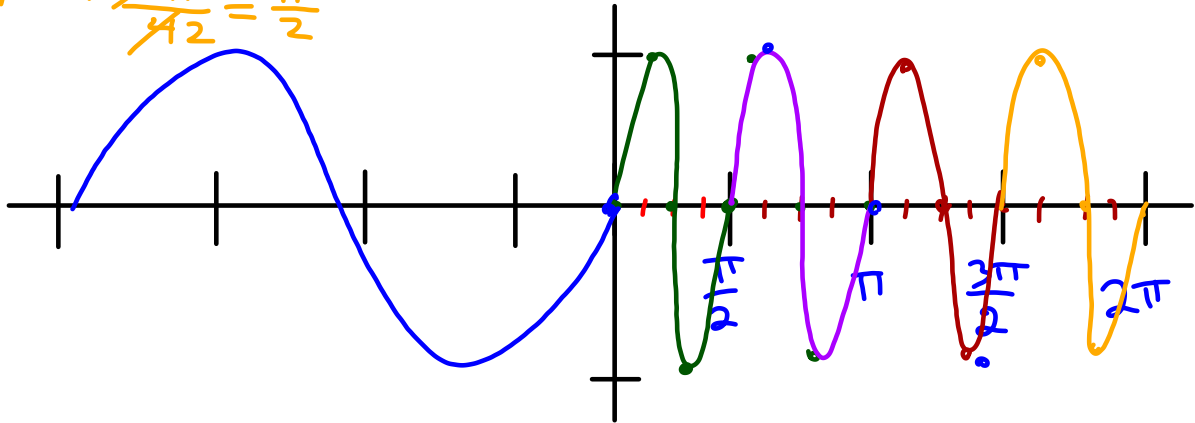


Feb 9-10:47 AM

$y = \sin(4\theta)$

amp: 1

Per: $\frac{2\pi}{4} = \frac{\pi}{2}$

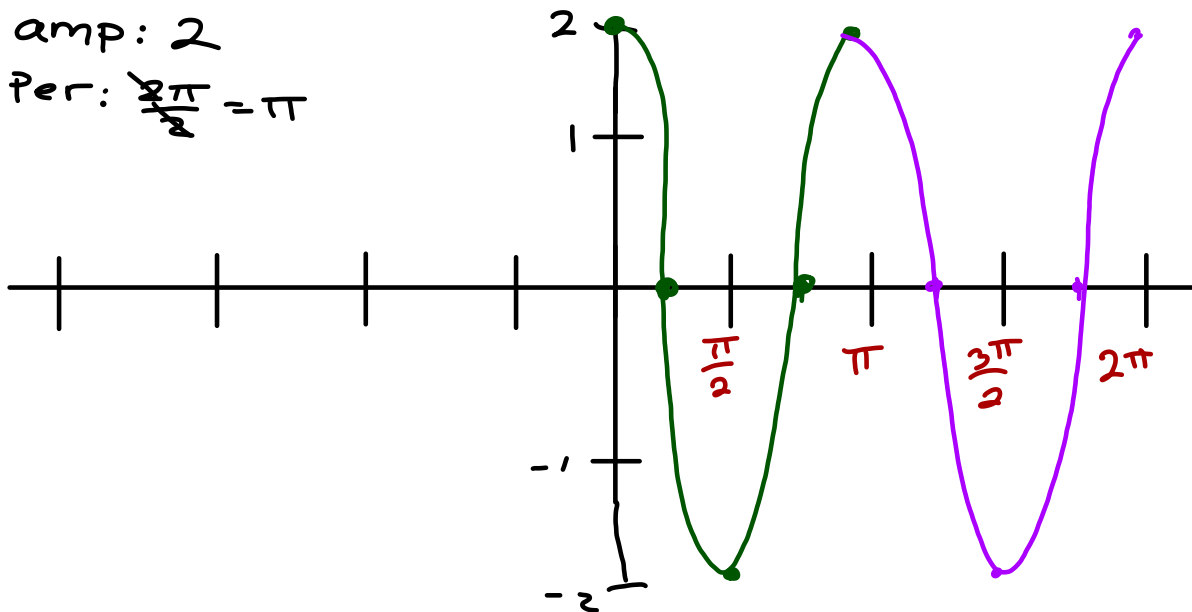


Jan 18-11:37 AM

$y = 2 \cos 2\theta$

amp: 2

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



Jan 18-11:40 AM

State the amplitude, period, phase shift, and vertical shift of each function.

$$y = 4\cos 2\theta + 2$$

$$y = 3\sin(2x) - 1$$

Amp:

Amp:

Period:

Period:

Phase Shift:

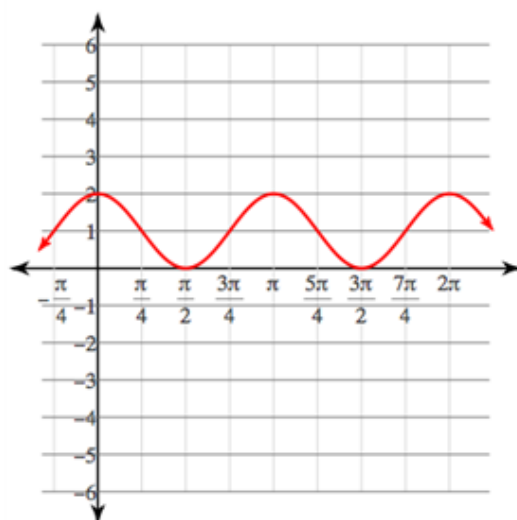
Phase Shift:

Vertical Shift:

Vertical Shift:

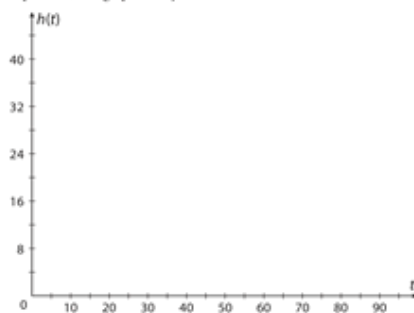
Jan 7-10:04 AM

Write the equation for the following function



Jan 18-11:36 AM

7. **Amusement Parks** The height h in feet of a car on a different Ferris wheel can be modeled by $h(t) = -16\cos\left(\frac{\pi}{25}t\right) + 24$, where t is the time in seconds. Identify the period, midline, amplitude, and maximum and minimum values of the graph. For one cycle starting from $t = 0$, find all points where the graph intersects its midline and the coordinates of any local maxima and minima. Interpret these points in the context of the problem, and graph one cycle.



Feb 1-5:34 PM