

Starter: Get out your NOTES...7.1 Graphing Sine & Cosine...Create & Fill in the following tables using your unit circle.

$$y = \sin x$$

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

$$y = \cos x$$

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

Next...Stamp
your notes
with 2 girds

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):

$$\text{amplitude: } |a|$$

b: Period Finder (horizontal):

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

h: Phase Shift(horizontal):

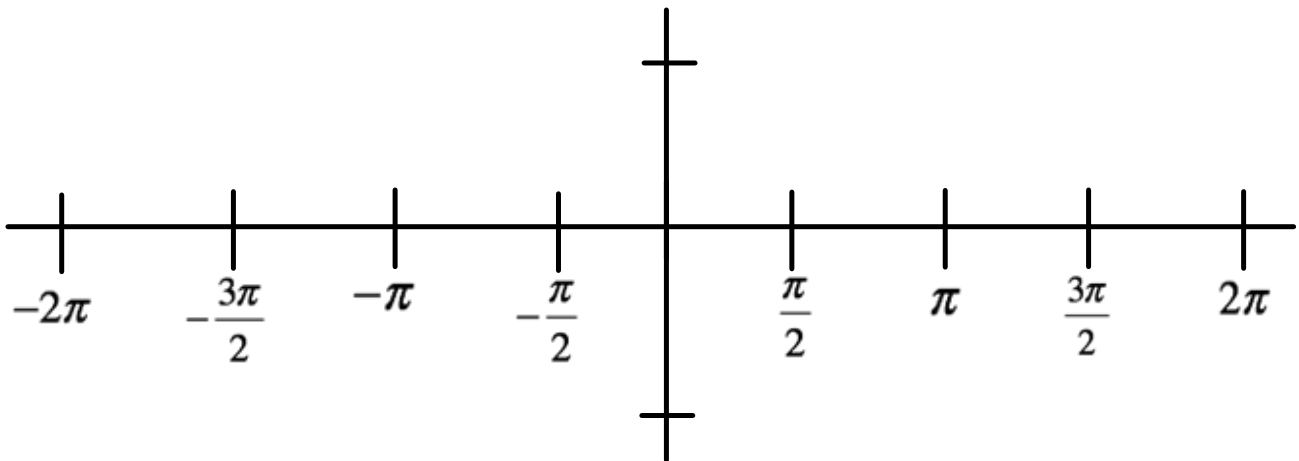
k: Vertical Shift(vertical):

Video of sin graph and unit circle:

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



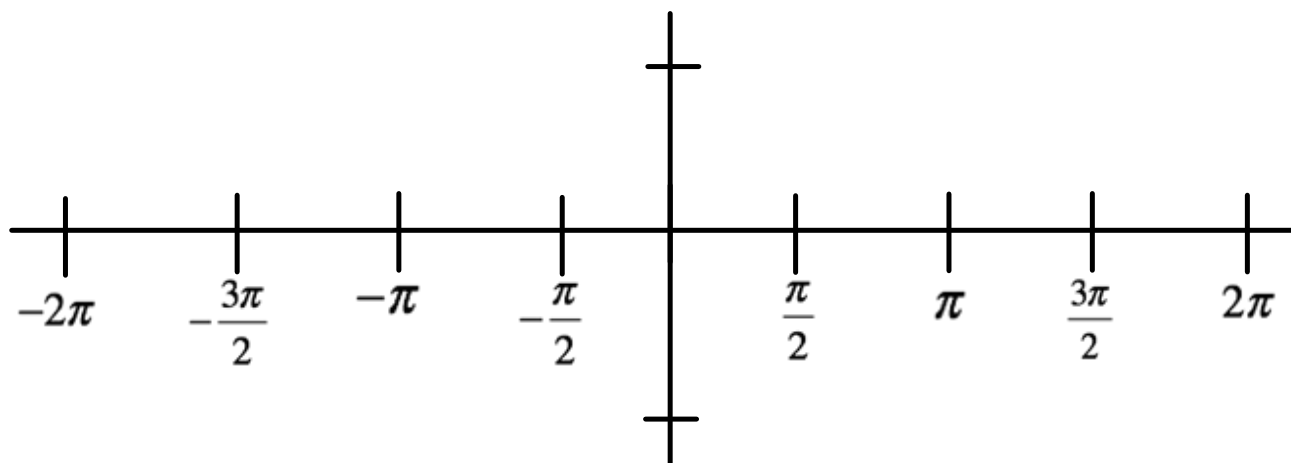
Graph $y=\sin x$



Amplitude:

Period:

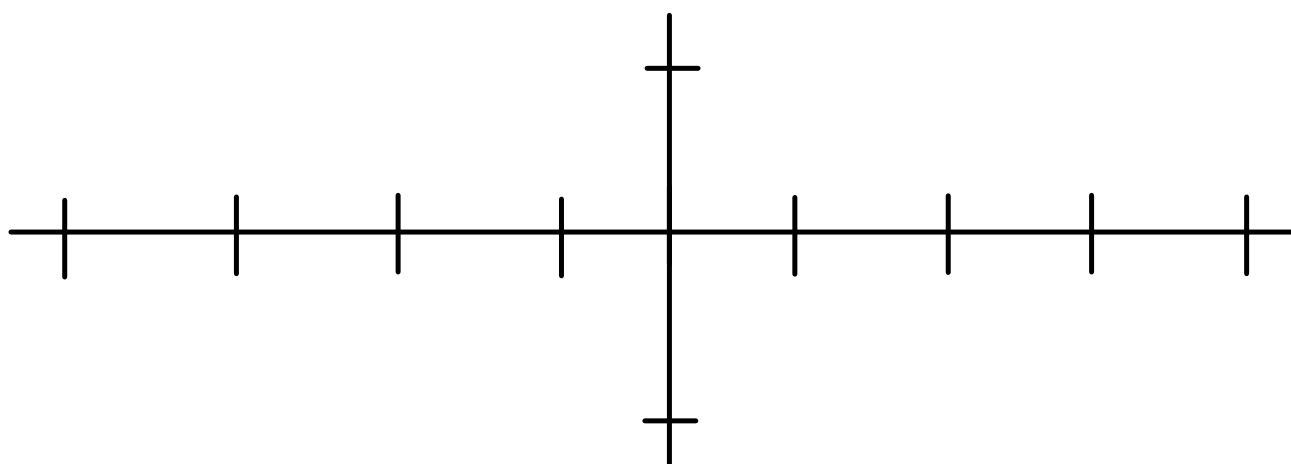
Graph $y=\cos x$



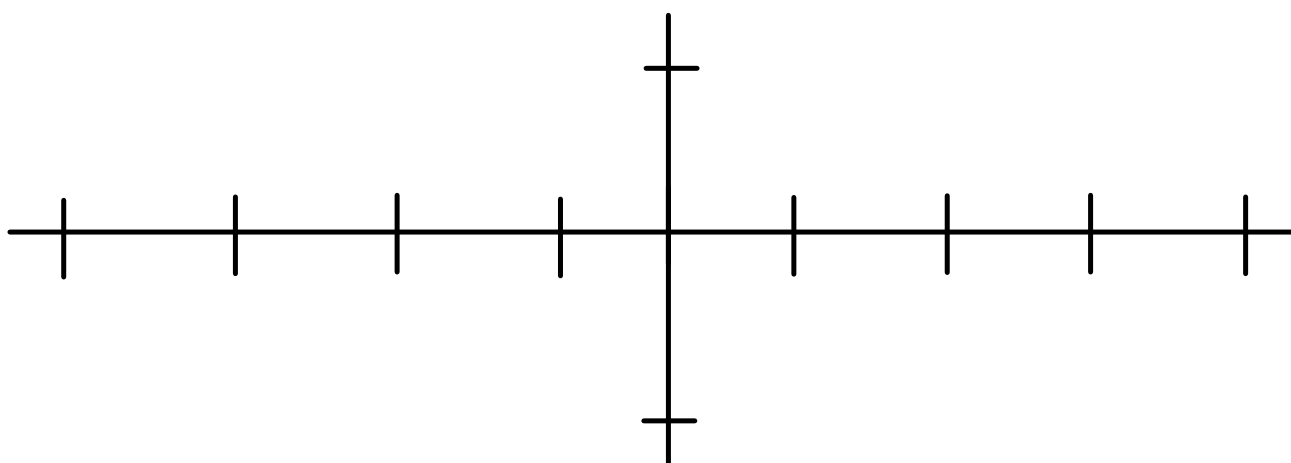
Amplitude:

Period:

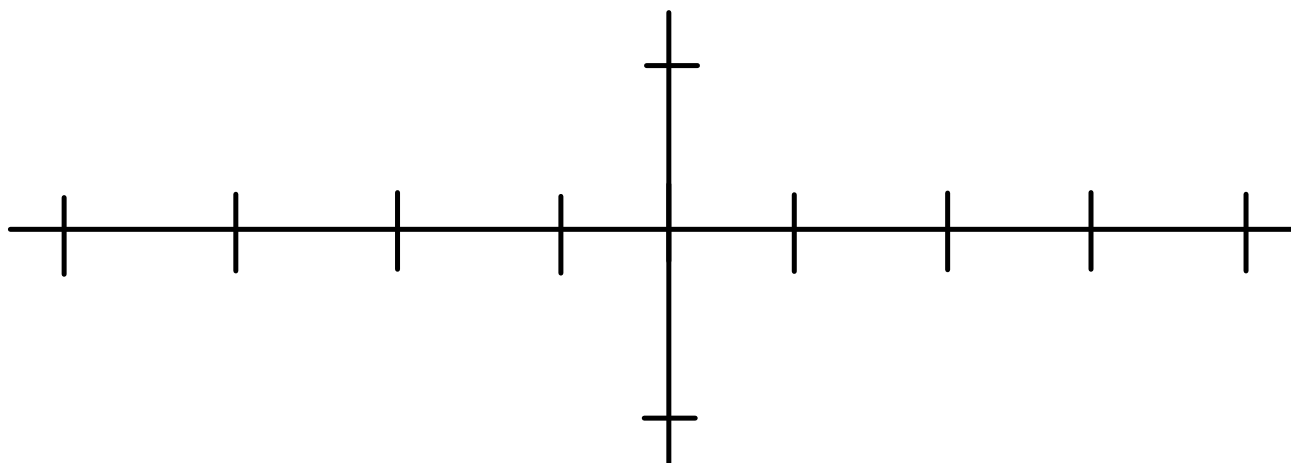
Graph $y = \cos x + 1$



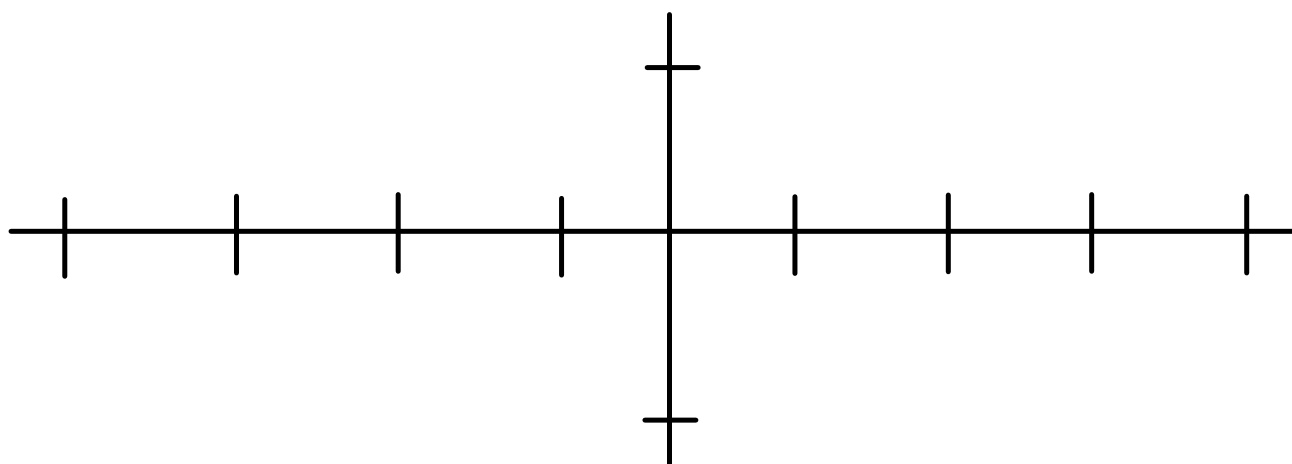
$$y = 2\sin \theta - 2$$



$$y = \sin 4\theta - 2$$



$$y = -4\cos \theta + 1$$



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

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

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

Amp:

Period:

Phase Shift:

Vertical Shift:

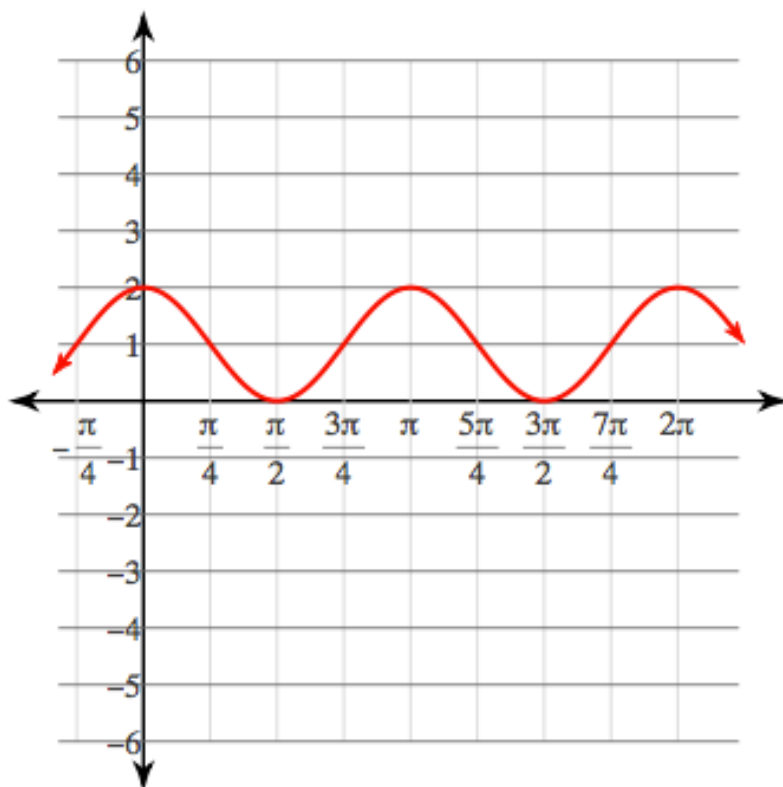
Amp:

Period:

Phase Shift:

Vertical Shift:

Write the equation for the following function



7-1 Graphing Trig.notebook

- 7. Amusement Parks** The height h in feet of a car on a different Ferris wheel can be modeled by $h(t) = -16\cos\frac{\pi}{45}t + 24$, 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.

