

What's Going On?

Checking In

Minds on

Hypothesize

Action!

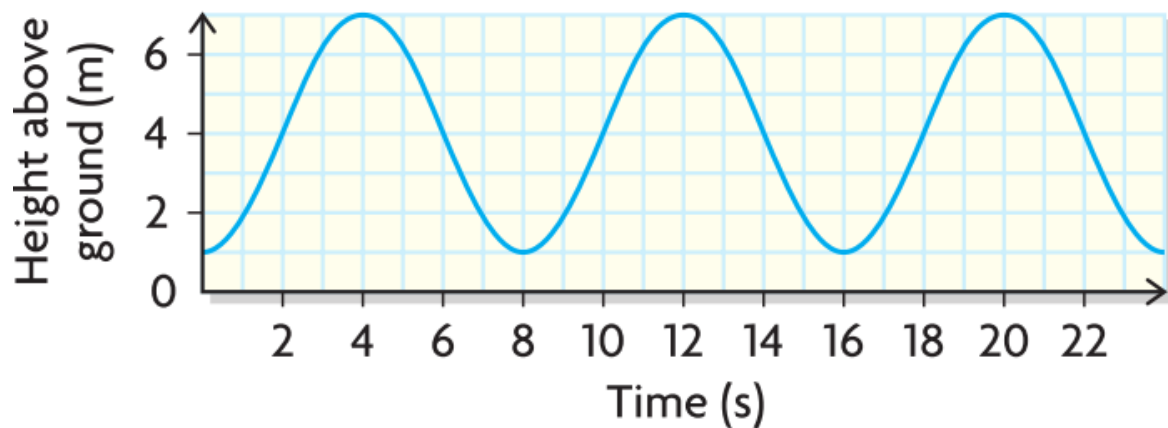
Investigate

Consolidation

Follow Up

Learning Goal - I will be able to describe the effects of a , k , c , and d on the graphs of sinusoidal functions.

Given the graph below, of the height of a person on a Ferris wheel over time, determine the speed at which the wheel is turning.



$$\text{Speed} = \text{Distance} \div \text{Time}$$

Distance is circumference of wheel

$$C = \pi d$$

$$C = \pi(6) = 18.85 \text{ m}$$

Time is the time to complete one rotation

$$\text{Time} = 8 \text{ s}$$

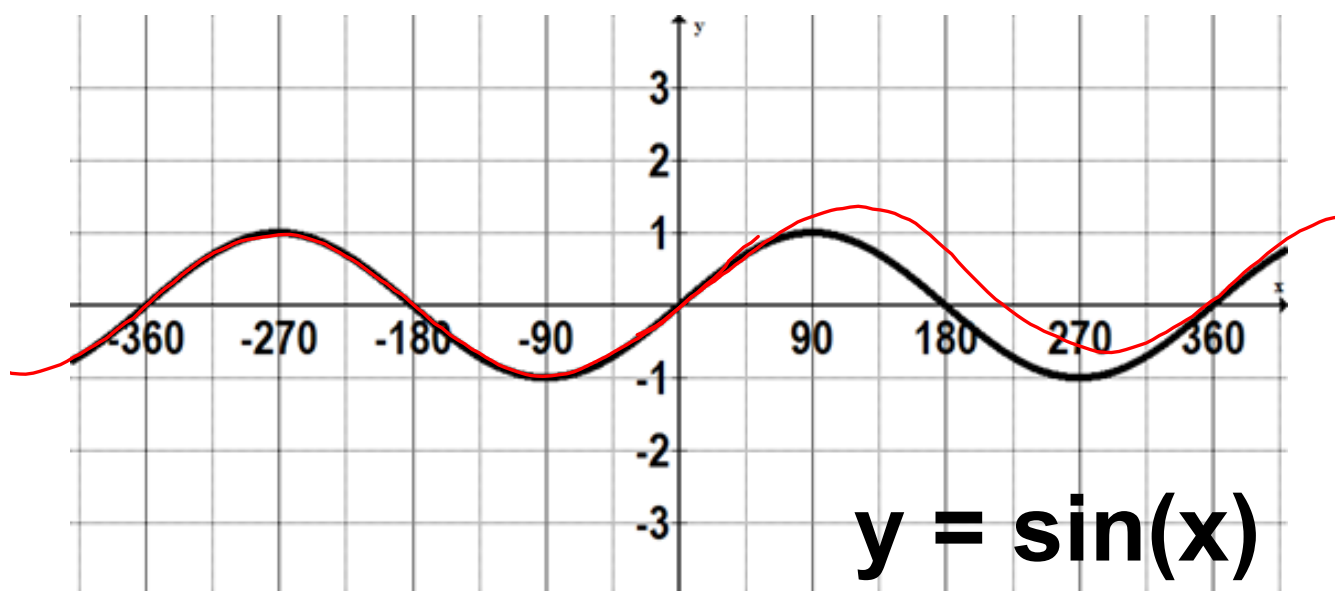
$$\text{Speed} = 2.36 \text{ m/s}$$

Minds on

Hypothesize!

What do you think the values of a , k , c , and d in the equation below do to the graph of $\sin(x)$?

$$a \sin(k(x - d)) + c$$



Action!

Investigation!

Get an iPad with a partner.

Go to our unit page on gilbertmath.com

With today's stuff is a Desmos Graph

Open it!

Consolidation

Follow-Up

Effects of k

- k changes the period
- the period is $\frac{360}{k}$

* changing k
does not change
the y-intercept

Effects of d

Shifts the graph left and right

Effects of a

- changes the amplitude
- * amplitude is a

Effects of c

- shifts the graph up and down
- c is the equation of the axis

