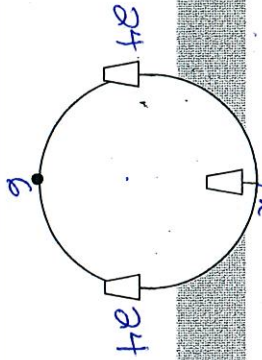
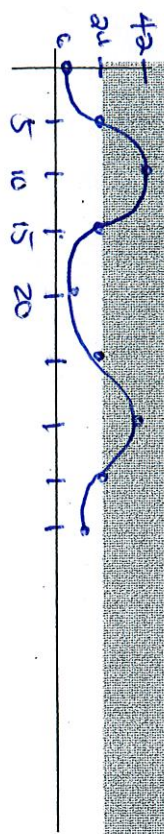


A ferris wheel is 36 feet in diameter and boarded from a platform that is 6 feet off the ground. You make two rotations in 40 minutes. Make a table and graph the function. Find the midline and amplitude.



T	0	5	10	15	20	25	30	35	40
F(t)	6	24	42	24	6	24	42	24	6

Graph the ferris wheel function.



Amplitude = 18 and represents height from middle to bottom/top  
 Midline = y = 24  
 Period = 20 min and represents on ride

Write a cosine function to model this curve:

*neg*  
 $y = -18 \cos\left(\frac{\pi}{10} \theta\right) + 24$

*pos*

$$y = 18 \cos\left(\frac{\pi}{10} \theta - \pi\right) + 24$$

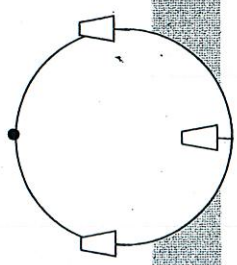
$$\frac{2\pi}{B} = 20$$

$$\frac{\pi}{10} = B$$

$$\frac{-C}{10} = 10$$

$$C = -10$$

A ferris wheel is 36 feet in diameter and boarded from a platform that is 6 feet off the ground. You make two rotations in 40 minutes. Make a table and graph the function. Find the midline and amplitude.



T									
F(t)									

Graph the ferris wheel function.

Amplitude = \_\_\_\_\_ and represents \_\_\_\_\_  
 Midline = \_\_\_\_\_  
 Period = \_\_\_\_\_ and represents \_\_\_\_\_

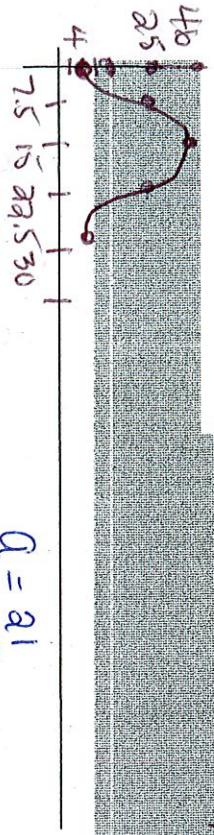
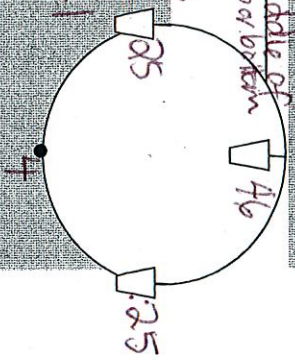
Write a cosine function to model this curve:



A Ferris wheel with diameter 42 feet completes 2 rotations in 60 minutes. You board the wheel from a platform that is 4 feet from the ground.

T	0	7.5	15	22.5	30	37.5	45	52.5	60
F(t)	4	25	46	25	4	25	46	25	4

Amplitude = 21 and represents height from middle of ride to top or bottom  
 Midline =  $y = 25$   
 Period = 30 and represents time it takes for 1 ride on ferris wheel



$a = 21$   
 $y = 25$

$\frac{2\pi}{b} = 30$   
 $b = \frac{2\pi}{30}$

$\frac{\pi}{15} = b$

$-\frac{c}{\frac{\pi}{15}} = 22.5$   
 $-\frac{c}{\pi} = 22.5 \cdot \frac{15}{\pi}$   
 $-\frac{c}{\pi} = \frac{7.5\pi}{2}$   
 $-\frac{c}{\pi} = 7.5$

$-\frac{c}{\pi} = \frac{7.5\pi}{2}$   
 $c = \frac{15\pi}{2}$

$-\frac{c}{\pi} = \pi$   
 $c = -\pi$

Write a sine function to model the graph

$y = 21 \sin\left(\frac{\pi}{15}t - \frac{\pi}{2}\right) + 25$

$y = -21 \sin\left(\frac{\pi}{15}t - \frac{3\pi}{2}\right) + 25$

Write a cosine function to model the graph

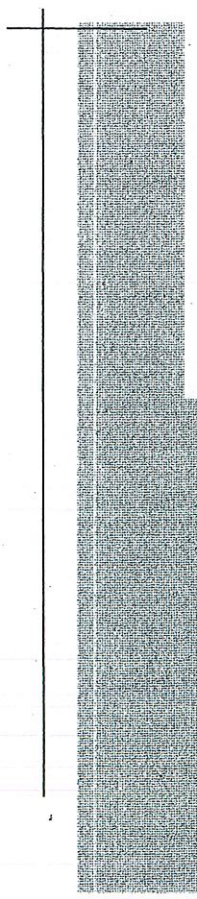
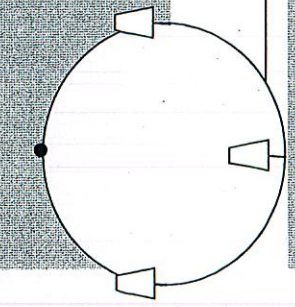
$y = -21 \cos\left(\frac{\pi}{15}t\right) + 25$

$y = 21 \cos\left(\frac{\pi}{15}t - \pi\right) + 25$

A Ferris wheel with diameter 42 feet completes 2 rotations in 60 minutes. You board the wheel from a platform that is 4 feet from the ground.

T									
F(t)									

Amplitude = \_\_\_\_\_ and represents \_\_\_\_\_  
 Midline = \_\_\_\_\_  
 Period = \_\_\_\_\_ and represents \_\_\_\_\_



Write a sine function to model the graph

Write a cosine function to model the graph