Use the relationships between circular revolutions, degrees, and radians to complete the following.

$250\left(\frac{\pi}{180}\right)$ $\frac{250}{360}$

250 degrees = $\frac{25\pi}{18}$ Radians = $\frac{25}{36}$ Revolutions

$\frac{31\cancel{\pi}}{18}\left(\frac{180}{\cancel{\pi}}\right)$ $\frac{310}{360}$

$\frac{31\pi}{18}$ = 310° Degrees = $\frac{31}{36}$ Revolutions

$306\left(\frac{\pi}{180}\right)$

$\frac{\angle}{360} = rev$

$\angle = rev(360)$

.85 = 306 Degrees = $\frac{17\pi}{10}$ Radians

$.85(360)$

Find the reference angle. Leave your answer in the form that it was given.

$180 - \theta$ $\pi - \theta$	ref
$\theta - 180$ $\theta - \pi$	$360 - \theta$ $2\pi - \theta$

$207°$

$207° - 180°$

$27°$

$\frac{54\pi}{35} = \frac{16\pi}{35}$

$-230°$

$360 - 230$

$130°$

$180° - 130° = \underline{50°}$

$-\frac{3\pi}{7} + \frac{14\pi}{7}$

$\frac{11\pi}{7}$

$\frac{3\pi}{7}$

$415°$

$415 - 360$

$\boxed{55°}$

$-\frac{79\pi}{36}$

$\frac{72\pi}{36} - \frac{65\pi}{36}$

$\frac{72\pi}{36} - \frac{79\pi}{36} = -\frac{7\pi}{36} = \frac{65\pi}{36}$

$\frac{7\pi}{36}$

Find the exact value.

$-300+360$

$\cos 210° = -\frac{\sqrt{3}}{2}$

$\frac{y}{x}$

$\tan\frac{5\pi}{6} = \frac{\frac{1}{2}}{-\frac{\sqrt{3}}{2}}$

$\frac{1}{\cancel{2}}\cdot\frac{\cancel{2}}{\sqrt{3}} = -\frac{1}{\sqrt{3}}$

$\sin -300°$

$\sin 60° = \frac{\sqrt{3}}{2}$

$\tan 750° = \frac{1}{\sqrt{3}}$

$750-360$

$390-360$

30

$\tan 30° = \frac{y}{x}$

$= \frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}}$

$\frac{1}{\cancel{2}}\cdot\frac{\cancel{2}}{\sqrt{3}}$

$\sin -\frac{2\pi}{3} = -\frac{\sqrt{3}}{2}$

$\sin\frac{4\pi}{3}$

$\frac{-2\pi}{3}+\frac{6\pi}{3}$

$\cos\frac{15\pi}{6} = 0$

$\frac{15\pi}{6} - \frac{12\pi}{6}$

$\frac{3\pi}{6} = \frac{\pi}{2}$

Write the equation of the SINE curve that has a period of 10π, a maximum of 8 and a minimum of -4, and a phase shift of $\frac{\pi}{2}$ to the left.

$$A = \frac{max - min}{2} = 6$$

$$D = \frac{max + min}{2} = 2$$

$$B = \frac{2\pi}{Per} \quad \frac{2\pi}{10\pi} = \frac{1}{5}$$

$$y = A \sin B(x - c) + D$$

$$y = 6 \sin \tfrac{1}{5}\left(x + \tfrac{\pi}{2}\right) + 2$$

Write the equation of the cosine curve that has an amplitude of 3, a period of $\frac{2}{3}$, a phase shift of 2 to the right, a vertical shift down 5, and a reflection of the x-axis.

$$A = 3$$

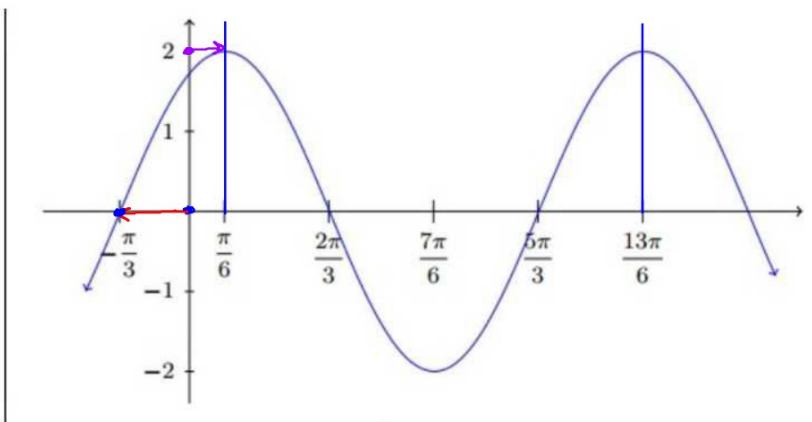
$$B = \frac{2\pi}{Per} = \frac{2\pi}{\frac{2}{3}} = \frac{2\pi}{1} \cdot \frac{3}{2} = 3\pi$$

$$y = A \cos B(x - c) + D$$

$$y = -3 \cos 3\pi (x - 2) - 5$$

Write a SINE and COSINE equation for the given graph.

A, B, + D same for Both curves



Per $= 2\pi$

$B = \frac{2\pi}{2\pi} = 1$

$A = 2$

$D = 0$

$\frac{13\pi}{6} - \frac{\pi}{6}$

$\frac{12\pi}{6}$

$y = 2\sin\left(x + \frac{\pi}{3}\right)$

$y = 2\cos\left(x - \frac{\pi}{6}\right)$

$y = -2\sin\left(x - \frac{2\pi}{3}\right)$

Measuring 520 feet in diameter, the High Roller eclipses both the London Eye and Singapore Flyer. Facing north and south parallel to Las Vegas Boulevard, the wheel turns counterclockwise, takes 30 minutes to complete one full revolution, and features 28 glass-enclosed cabins with broad views of Las Vegas and the Strip. Each spherical cabin can hold up to 40 people, with benches on either side of the cabin and plenty of floor space in between-but we imagine you'll want to stand and admire the view. Allow your body and mind to soar 550 feet in the sky above the Las Vegas Strip.

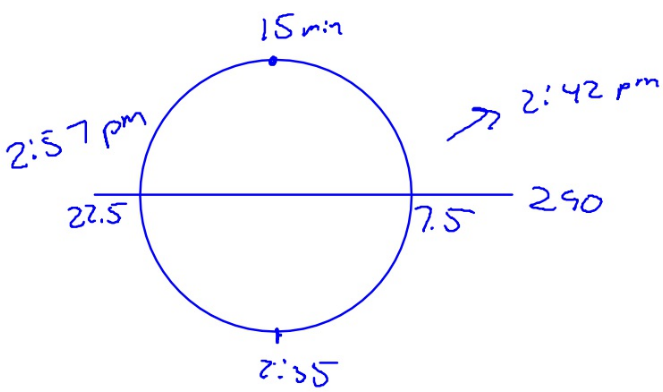
$A = \frac{max - min}{2}$ Per = 30 min

$D = \frac{max + min}{2}$ $B = \frac{2\pi}{30} = \frac{\pi}{15}$

Will, Wesley, Jenavieve, and Dylan enter the Ferris Wheel directly below the center. Write a function rule to model the path of the Ferris Wheel.

$y = -260 \cos \frac{\pi}{15} x + 290$

If they enter the ride at 2:35 pm, at what times will they be even with the center of the the ride?



Provide the given information and then graph each equation. **MAKE SURE YOU ACCURATELY LABLE YOUR X AND Y AXIS.**

$y = -2 + 5\cos 6x$

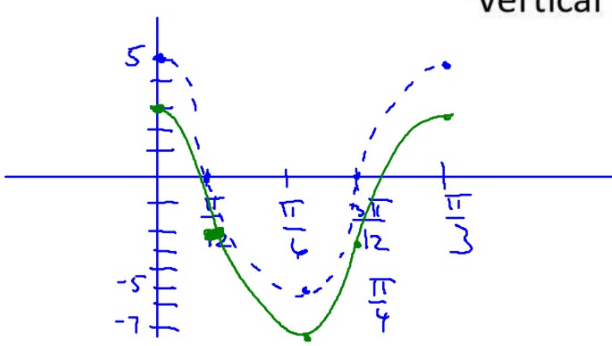
$y = 5\cos 6x - 2$

Amplitude 5

Period $\frac{2\pi}{B} = \frac{2\pi}{6} = \frac{\pi}{3}$

Phase Shift None

Vertical Shift Down 2



Provide the given information and then graph each equation. **<u>MAKE SURE YOU ACCURATELY LABLE YOUR X AND Y AXIS.</u>**

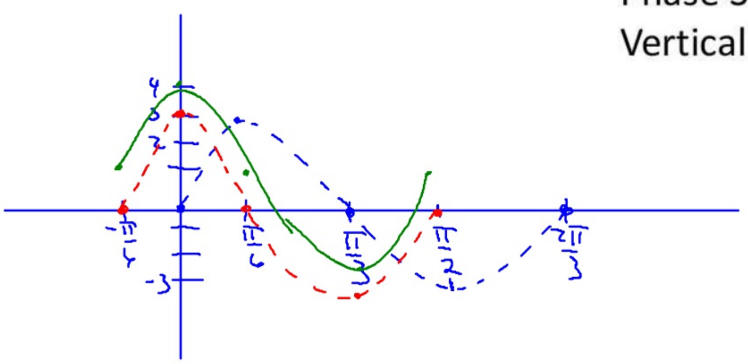
$y = 3\sin 3\left(x + \frac{\pi}{6}\right) + 1$

Amplitude 3

Period $\frac{2\pi}{3}$

Phase Shift $\frac{\pi}{6}$ Left

Vertical Shift Up 1



Provide the given information and then graph each equation. **MAKE SURE YOU ACCURATELY LABLE YOUR X AND Y AXIS.**

Reflection over x-axis

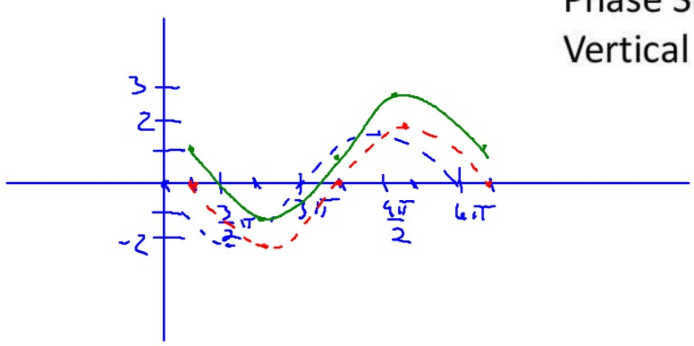
$$y = -2\sin\frac{1}{3}\left(x - \frac{3\pi}{4}\right) + 1$$

Amplitude 2

Period 6π

Phase Shift $\frac{3\pi}{4}$ Right

Vertical Shift up 1



Provide the given information and then graph each equation. **MAKE SURE YOU ACCURATELY LABLE YOUR X AND Y AXIS.**

$y = 2\cos\frac{\pi}{2}(x-1) - 2$

Amplitude

Period

Phase Shift

Vertical Shift