

Sinusoids

$$f(x) = a \sin(bx + c) + d \quad \text{or} \quad f(x) = a \cos(bx + c) + d$$

Amplitude is half the height of the wave. $|a|$

Period is the length of one full cycle of the wave. $\frac{2\pi}{|b|}$

Frequency is the number of cycles of the wave per one radian. $\frac{|b|}{2\pi}$

1. Find the amplitude and describe the transformation of the graph of the function related to $y = \sin x$.

$$y = \frac{4}{5} \sin x$$

$$y = -\frac{7}{4} \sin x$$

2. Find the period and describe the transformation of the graph of the function related to $y = \cos x$.

$$y = \cos \frac{x}{5}$$

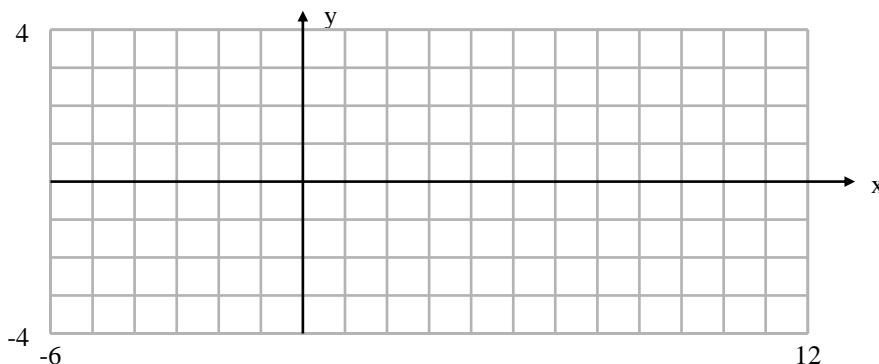
$$y = \cos (-0.7x)$$

Honors Pre-Calc

1-7-08

3. Find the amplitude, period, and frequency of the function. Then graph the function.

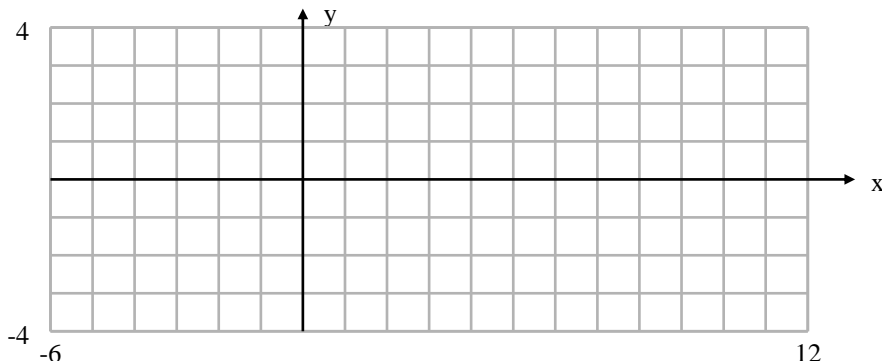
$$y = -4\sin \frac{2x}{3}$$



4. Graph one period of the function using your understanding of transformations.

$$y = 1.5\cos x$$

$$y = -3\sin x$$



5. Graph three periods of the function using your understanding of transformations.

$$y = 4\sin 3x$$

