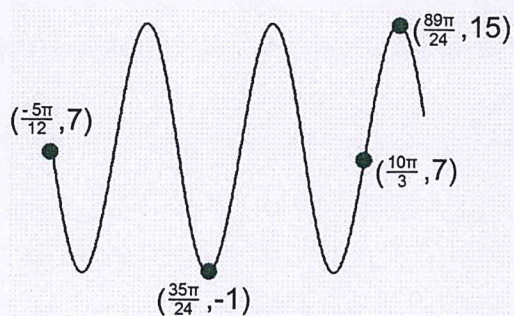


Bellwork Alg 2 Monday, April 29, 2019

1. Write both a Sine and Cosine equation for the graph shown below.



Sin EQ:

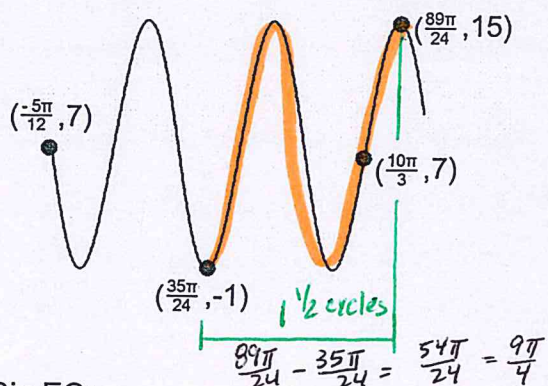
Cos EQ:

2. Graph one period of each function. Label the coordinates of all max, min, and pts on the midline.

a) $y = 4 \sin\left(3\left(x + \frac{7\pi}{6}\right)\right) - 9$

b) $y = -11 \cos\left(8\left(x - \frac{\pi}{5}\right)\right) + 1$

1. Write both a Sine and Cosine equation for the graph shown below.



Amplitude = $15 - 7 = 8$

midline: $y = 7$

Period: $\frac{9\pi/4}{1/2} = \frac{9\pi}{3/2} = \frac{9\pi}{4} \cdot \frac{2}{3} = \frac{3\pi}{2}$

$b = \frac{2\pi}{3\pi/2} = 2\pi \cdot \frac{2}{3\pi} = \frac{4}{3}$

Sin EQ:

if start at $(-\frac{5\pi}{12}, 7)$

$a = -8$
 $k = 7$
 $b = 4/3$
 phase shift:
 $\frac{5\pi}{12}$ left

$y = -8 \sin\left(\frac{4}{3}\left(x + \frac{5\pi}{12}\right)\right) + 7$

Cos EQ:

if start at $(\frac{35\pi}{24}, -1)$

$a = -8$
 $k = 7$
 $b = 4/3$
 phase shift:
 $\frac{35\pi}{24}$ right

$y = -8 \cos\left(\frac{4}{3}\left(x - \frac{35\pi}{24}\right)\right) + 7$

2. Graph one period of each function. Label the coordinates of all max, min, and pts on the midline.

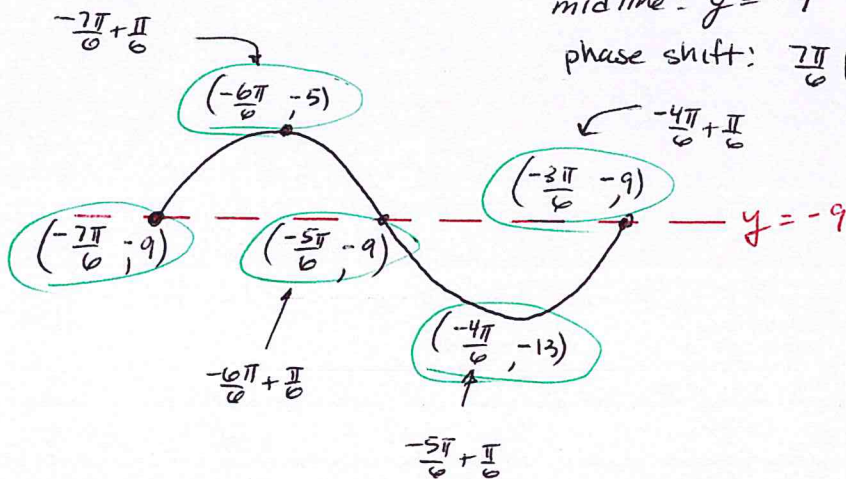
a) $y = 4 \sin(3(x + \frac{7\pi}{6})) - 9$

Amplitude = 4 (not upside down)

midline: $y = -9$

phase shift: $\frac{7\pi}{6}$ left

period = $\frac{2\pi}{3} \rightarrow \frac{1}{4}$ period
 $= \frac{1}{4} \cdot \frac{2\pi}{3} = \frac{\pi}{6}$



b) $y = -11 \cos(8(x - \frac{\pi}{5})) + 1$

Amplitude = 11 (upside down)

midline: $y = 1$

phase shift $\frac{\pi}{5}$ right

period = $\frac{2\pi}{8} = \frac{\pi}{4}$

$\frac{1}{4}$ period = $\frac{1}{4} \cdot \frac{\pi}{4} = \frac{\pi}{16}$

