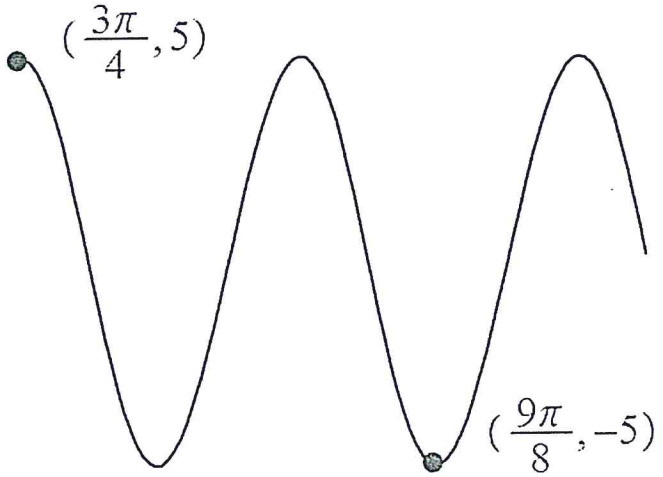
Algebra 2 Bellwork Wednesday, May 18, 2016

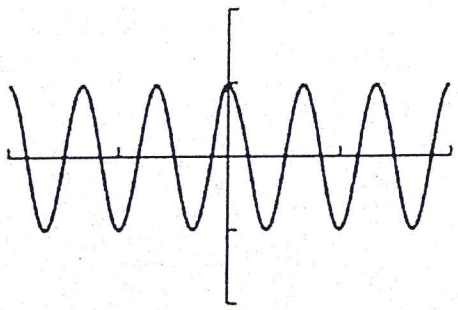
1. Graph one period of this Cosine Function. Label the coordinates of all Maximums, Minimums, and x-intercepts.

$y = -10\text{Cos}12x$

2. Write the equation of this Cosine Function:



3. Find the Period and Amplitude of the Cosine graph shown. At what values of x for $0 \leq x \leq 2\pi$ do the maximum value(s), minimum value(s), and zeros occur?



Xmin=-2π
Xmax=2π
Xscl=π
Ymin=-2
Ymax=2
Yscl=1

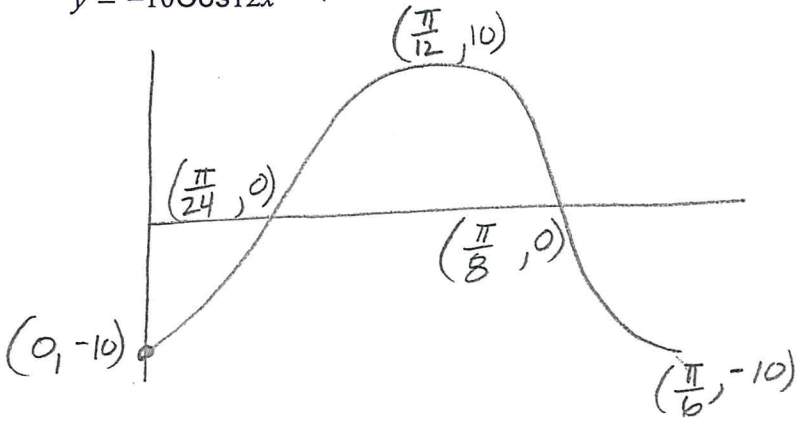
Period = Amplitude =

Maximums occur at: Minimums occur at: Zeros occur at:

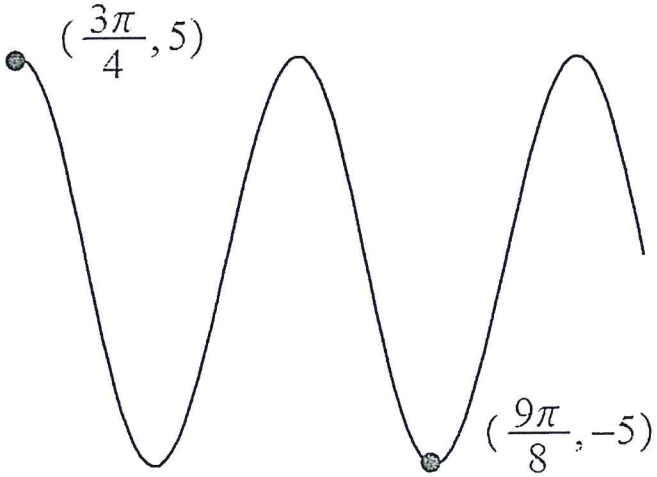
Algebra 2 Bellwork Wednesday, May 18, 2016 **Answers**

1. Graph one period of this Cosine Function. Label the coordinates of all Maximums, Minimums, and x-intercepts.

$y = -10\cos 12x$ upside down; Amplitude = 10 ; period = $\frac{2\pi}{12} = \frac{\pi}{6}$



2. Write the equation of this Cosine Function:



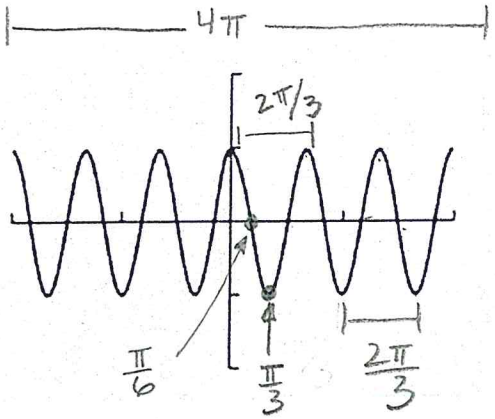
Period: $\frac{\frac{9\pi}{8} - \frac{3\pi}{4}}{1\frac{1}{2}} = \frac{\frac{9\pi}{8} - \frac{6\pi}{8}}{\frac{3}{2}} = \frac{3\pi}{8} \cdot \frac{2}{3} = \frac{\pi}{4}$

Amplitude = 5

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

$y = 5\cos 8x$

3. Find the Period and Amplitude of the Cosine graph shown. At what values of x for $0 \le x \le 2\pi$ do the maximum value(s), minimum value(s), and zeros occur?



Xmin=-2π
Xmax=2π
Xscl=π
Ymin=-2
Ymax=2
Yscl=1

Period = $\frac{4\pi}{6} = \frac{2\pi}{3}$

Amplitude = $\frac{2 - -2}{2} = \frac{4}{2} = 2$

Period = $2\pi/3$ Amplitude = 2

Maximums occur at:

$0, \frac{2\pi}{3}, \frac{4\pi}{3}, 2\pi$

Minimums occur at:

$\frac{\pi}{3}, \pi, \frac{5\pi}{3}$

Zeros occur at:

$\frac{\pi}{6}, \frac{\pi}{2}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{3\pi}{2}, \frac{11\pi}{6}$