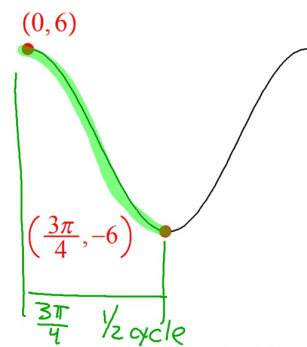


Write the equation of this Cosine Function.

EQ:



$$\text{Amp} = \frac{6 - (-6)}{2} = \frac{12}{2} = 6$$

STARTS AT A MAX $\boxed{a = +6}$

$$\text{midline: } y = \frac{6 + (-6)}{2} = 0$$

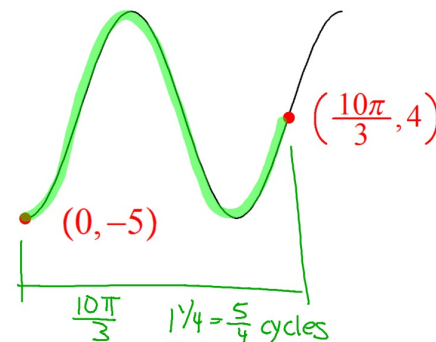
$\boxed{k = 0}$

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

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

$$y = 6 \cos \frac{4x}{3}$$

Write the equation of this Cosine Function.



$$\text{Amp} = 4 - (-5) = 9$$

STARTS AT A MIN $\boxed{a = -9}$

$$\text{midline: } y = 4$$

$\boxed{k = 4}$

$$\text{period} = \frac{\frac{10\pi}{3}}{\frac{5}{4}} = \frac{10\pi}{3} \cdot \frac{4}{5} = \frac{8\pi}{3}$$

$$b = \frac{2\pi}{\frac{8\pi}{3}} = 2\pi \cdot \frac{3}{8\pi}$$

$$\boxed{b = \frac{3}{4}}$$

$$y = -9 \cos\left(\frac{3x}{4}\right) + 4$$

Graph one period of: $y = -7\cos\left(\frac{x}{3}\right)$

Label the coordinates of all x-intercepts, maximums, and minimums.

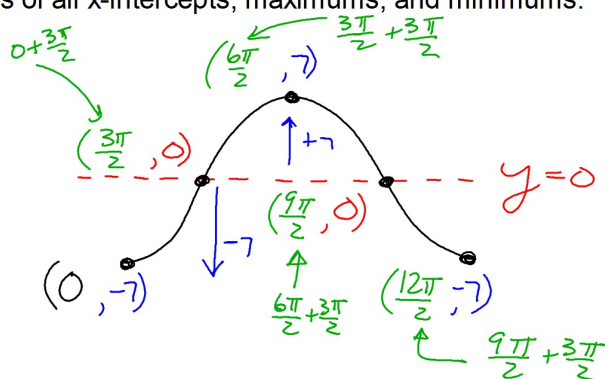
Amp = 7
upside down

midline $y = 0$

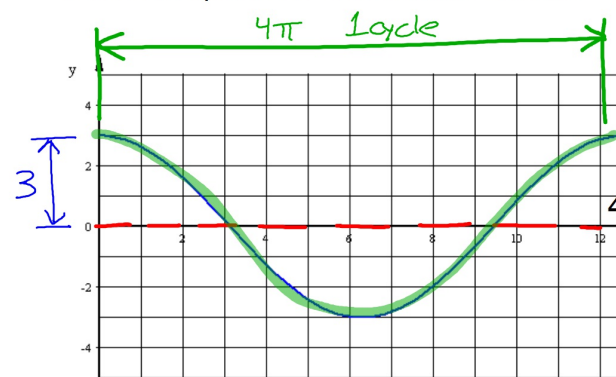
$$\text{period} = \frac{2\pi}{\frac{1}{3}} = 6\pi$$

$$\frac{1}{4} \text{ of the period} = \frac{1}{4} \cdot 6\pi = \frac{3\pi}{2}$$

This is the amount you can add to any x-coord to get the next x-coord.



Write the equation of this Cosine Function.



$$\text{Amp} = 3$$

STARTS AT A MAX $\boxed{a = +3}$

$$\text{midline: } y = 0$$

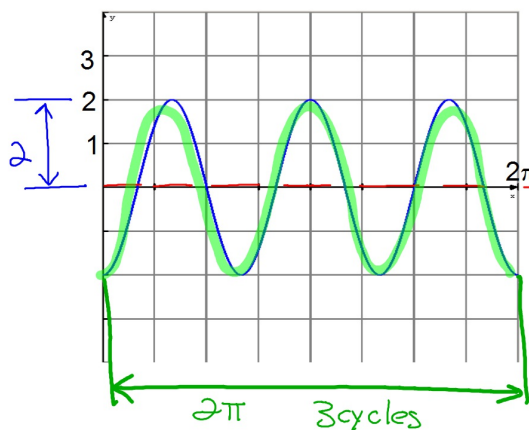
$\boxed{k = 0}$

$$\text{period} = 4\pi$$

$$b = \frac{2\pi}{4\pi} \quad \boxed{b = \frac{1}{2}}$$

$$y = 3 \cos \frac{x}{2}$$

Write the equation of this Cosine Function.



Amp = 2
STARTS AT A MIN
 $a = -2$

midline: $y = 0$

$k = 0$

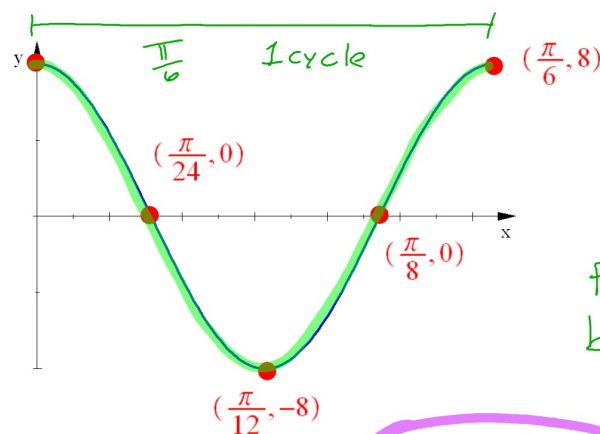
period = $\frac{2\pi}{3}$

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

$b = 3$

$$y = -2 \cos 3x$$

Write the equation of this Cosine Function:



Amp = $8 - 0 = 8$
START AT A MAX
 $a = +8$

midline: $y = 0$

$k = 0$

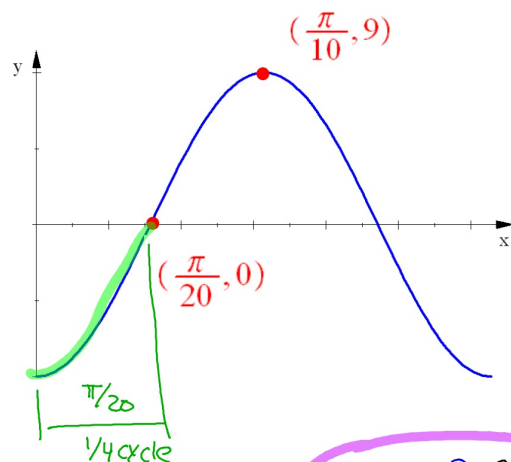
period = $\frac{\pi}{6}$

$b = \frac{2\pi}{\frac{\pi}{6}} = 2\pi \cdot \frac{6}{\pi}$

$b = 12$

$$y = 8 \cos \frac{1}{2} x$$

Write the equation of this Cosine Function:



Amp = $9 - 0 = 9$
START AT A MIN
 $a = -9$

midline: $y = 0$

$k = 0$

period: $\frac{\pi}{\frac{\pi}{20}} = \frac{\pi}{20} \cdot \frac{4}{1}$
 $= \frac{\pi}{5}$

$b = \frac{2\pi}{\frac{\pi}{5}} = 2\pi \cdot \frac{5}{\pi}$

$b = 10$

$$y = -9 \cos 10x$$

You can now do Hwk #20

Sec 13-5

Practice Sheet

Due Tomorrow