Write the equation of this function.

Parent function: Cosx

Phase Shift: $\frac{3\pi}{5}$ right

Graph is upside-down

Midline: y = 7

Amplitude = 13

Period = $\frac{4\pi}{9}$

$b = \frac{2\pi}{\frac{4\pi}{9}} = 2\pi \cdot \frac{9}{4\pi} = \frac{9}{2}$

$y = -13\cos\left(\frac{9}{2}\left(x - \frac{3\pi}{5}\right)\right) + 7$

$y = 1.5\sin\left(\frac{1}{4}\left(x + \frac{6\pi}{11}\right)\right) - 37$

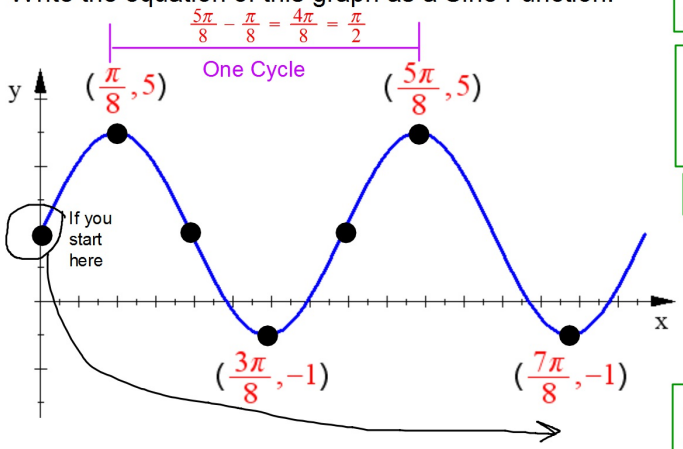
Period = $\frac{2\pi}{\frac{1}{4}} = 8\pi$

Amplitude = 1.5

Phase Shift: $\frac{6\pi}{11}$ Left

Eq of Midline: $y = -37$

Write the equation of this graph as a Sine Function:



Amplitude= 3

Period = $\pi/2$

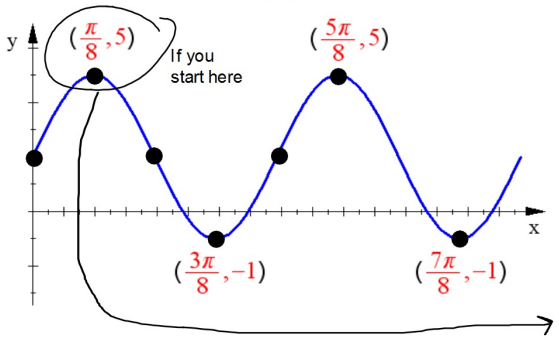
$b = \frac{2\pi}{\frac{\pi}{2}} = 2\pi \cdot \frac{2}{\pi} = 4$

Midline: y=2

Phase Shift: None

EQ:
$y = 3\sin 4x + 2$

Write the equation of this graph as a Cosine Function:

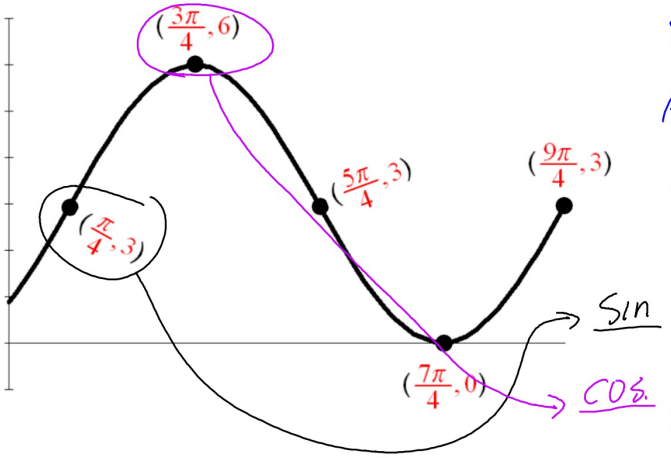


Same as Sine:
- Amplitude= 3
- Period = $\pi/2$
- Midline: y=2

Phase Shift: $\frac{\pi}{8}$ to the right

EQ:
$y = 3\cos(4(x - \frac{\pi}{8})) + 2$

Write both a Sine and a Cosine equation for this graph.



period $= 2\pi$

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

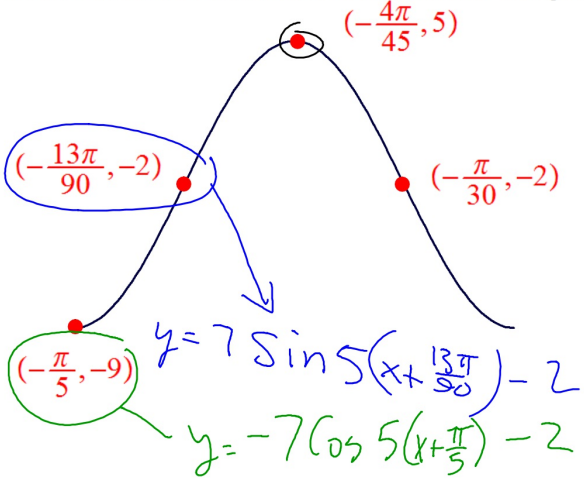
Amp $= 3$

midline $y = 3$

Sin $y = 3\sin(x - \frac{\pi}{4}) + 3$

Cos $y = 3\cos(x - \frac{3\pi}{4}) + 3$

Write both a Sine and a Cosine equation for this graph.



period $= \frac{-4\pi}{45} - \frac{-\pi}{5} = \frac{-4\pi}{45} + \frac{9\pi}{45}$

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

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

Amp $= 7$

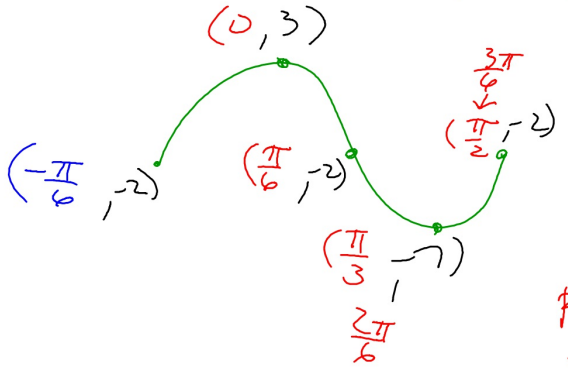
midline: $y = -2$

$y = 7\sin 5(x + \frac{13\pi}{90}) - 2$

$y = -7\cos 5(x + \frac{\pi}{5}) - 2$

Graph one period of this function. Label the coordinates of all maximums, minimums, and x-intercepts.

$y = 5\text{Sin}(3(x + \frac{\pi}{6})) - 2$



midline $y = -2$

Amp $= 5$

phase shift $\frac{\pi}{6}$ Left

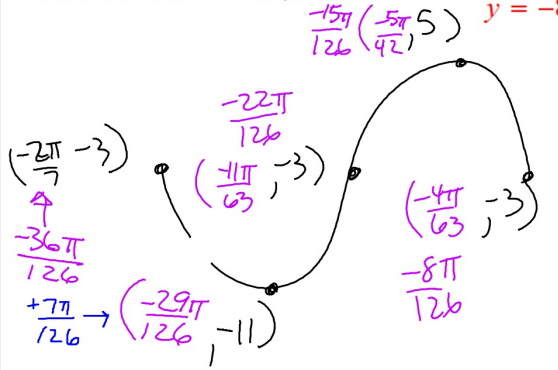
period $= \frac{2\pi}{3}$

$\frac{1}{4}$ of a period $= \frac{\pi}{6}$

Add $\frac{\pi}{6}$ to one x-coordinate to get the next one. Reduce when possible.

Graph one period of this function. Label the coordinates of all maximums, minimums, and x-intercepts.

$y = -8\text{Sin}(9(x + \frac{2\pi}{7})) - 3$



Amp $= -8$

midline $y = -3$

phase shift $\frac{2\pi}{7}$ Left

period $= \frac{2\pi}{9}$

$\frac{1}{4}$ of a period

$\frac{2\pi}{9} \cdot \frac{1}{4} = \frac{\pi}{18} \cdot \frac{7}{7}$

$\frac{7\pi}{126}$

Add $\frac{7\pi}{126}$ from one x-coordinate to get the next one. Reduce when possible.