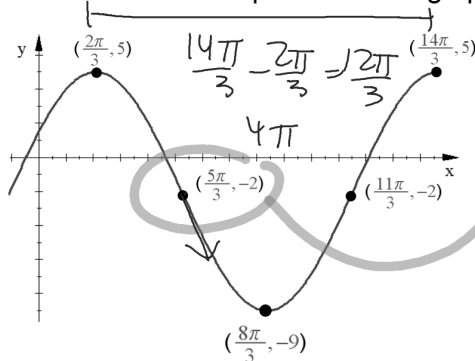


3. Write a Sine equation of this graph



Amplitude = 7

Eq of Midline: $y = -2$

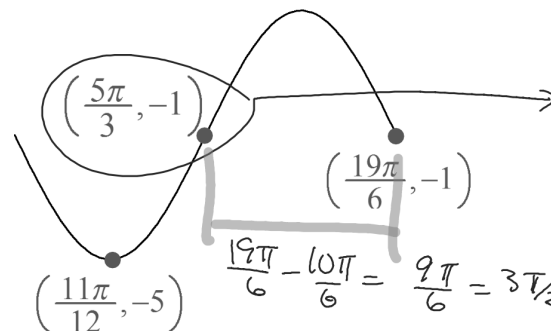
Phase Shift: $\frac{5\pi}{3}$ RT

Period = 4π

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

$$\text{EQ: } y = -7 \sin\left(\frac{1}{2}\left(x - \frac{5\pi}{3}\right)\right) - 2$$

Write a Sine equation for this graph.



Amplitude = 4

Eq of Midline: $y = -1$

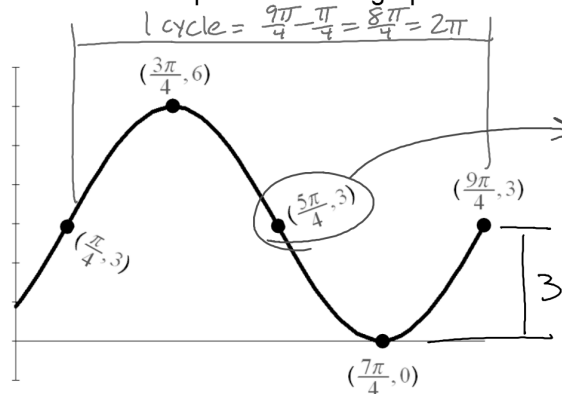
Phase Shift: $\frac{5\pi}{3}$ RT

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

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

$$\text{EQ: } y = 4 \sin\left(\frac{2}{3}\left(x - \frac{5\pi}{3}\right)\right) - 1$$

Write a Sine equation for this graph.



Amplitude = 3

Eq of Midline: $y = 3$

Phase Shift: $\frac{5\pi}{4}$ RT

Period = 2π

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

$$\text{EQ: } y = -3 \sin\left(x - \frac{5\pi}{4}\right) + 3$$

Skills needed to graph a transformed Sine Function:

Find this sum:

$$\frac{3}{8} \cdot \frac{\pi}{8} + \frac{5\pi}{6} \cdot \frac{4}{4}$$

$$\frac{3\pi}{24} + \frac{20\pi}{24}$$

$$\frac{23\pi}{24}$$

Find this product:

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

Sketch one period of the graph of

$$y = 7\sin\left(2\left(x + \frac{2\pi}{3}\right)\right) - 1$$

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

$$\text{Amp} = 7$$

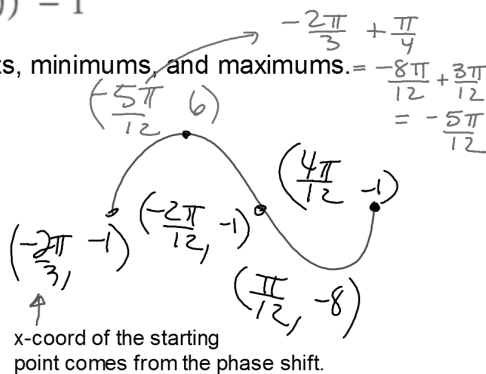
$$\text{midline} = y = -1$$

$$\text{phase shift: } \frac{2\pi}{3} \text{ left}$$

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

$$\frac{1}{4} \pi \text{ A period:}$$

$$\frac{1}{4} \cdot \pi = \frac{\pi}{4} = \frac{3\pi}{12} \rightarrow \text{if you add this amount to any x-coord you will find the next x-coord}$$



Sketch one period of the graph of

$$y = 2\sin\left(x - \frac{\pi}{6}\right) - 5$$

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

$$\text{Amp} = 2$$

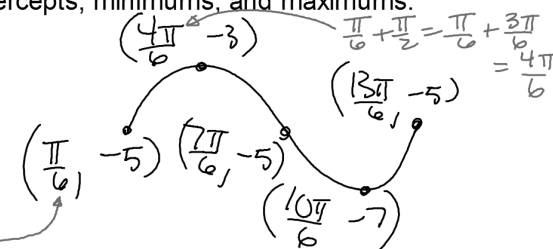
$$\text{midline } y = -5$$

$$\text{phase shift}$$

$$\frac{\pi}{6} \text{ RT}$$

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

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



You can now finish Hwk #32

Practice Sheet Sec 13-7