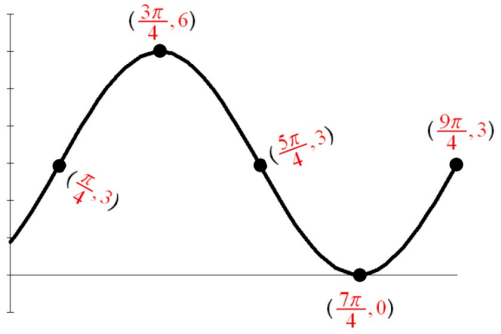
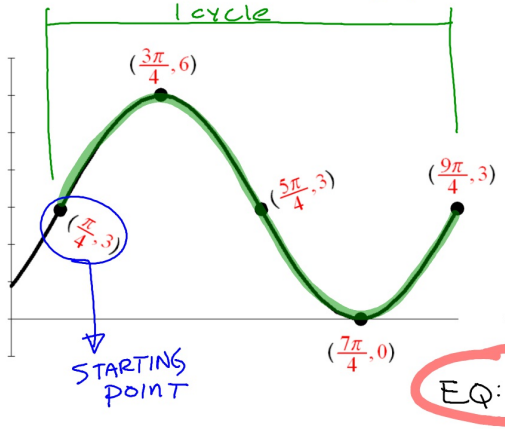
Write a Sine equation for this graph.



See next screen for answer.

Write a Sine equation for this graph.



period $= \frac{\frac{9\pi}{4} - \frac{\pi}{4}}{1} = \frac{8\pi}{4} = 2\pi$

$b = 1$

MIDLINE: $y = 3$ $K = 3$

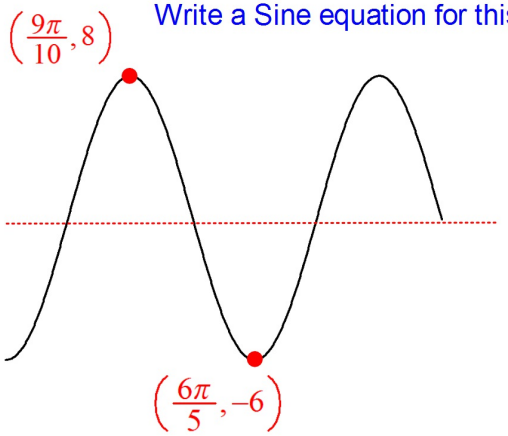
phase shift: $\frac{\pi}{4}$ RT $\left(x - \frac{\pi}{4}\right)$

Amplitude $= 6 - 3 = 3$

$a = 3$

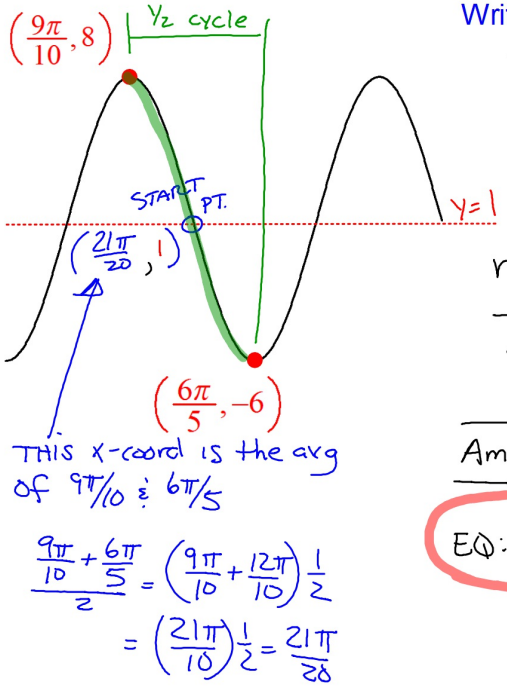
EQ: $y = 3\sin\left(x - \frac{\pi}{4}\right) + 3$

Write a Sine equation for this graph.



See next screen for answer.

Write a Sine equation for this graph.



$\frac{\frac{9\pi}{10} + \frac{6\pi}{5}}{2} = \left(\frac{9\pi}{10} + \frac{12\pi}{10}\right)\frac{1}{2}$

$= \left(\frac{21\pi}{10}\right)\frac{1}{2} = \frac{21\pi}{20}$

period $= \frac{\frac{6\pi}{5} - \frac{9\pi}{10}}{1/2} = \left(\frac{12\pi}{10} - \frac{9\pi}{10}\right)2$

$= \left(\frac{3\pi}{10}\right)2 = \frac{3\pi}{5}$

$b = \frac{2\pi}{3\pi/5} = 2\pi \cdot \frac{5}{3\pi} = \frac{10}{3}$

midline: $y = \frac{8 + -6}{2} = 1$

$K = 1$

phase shift: $\frac{21\pi}{20}$ RT $\left(x - \frac{21\pi}{20}\right)$

Amplitude $= 8 - 1 = 7$ $a = -7$

EQ: $y = -7\sin\left(\frac{10}{3}\left(x - \frac{21\pi}{20}\right)\right) + 1$

Sketch one period of the graph of

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

See next screen for answer.

Label the coordinates of all minimums, maximums, and points on the midline.

The first x-coordinate will come from the Phase Shift.
Two ways to find the remainding x-coordinates when graphing a Sine Function are:

1. The distance from one point to the next point is 1/4 of a period. Find 1/4 of the period, get a common denominator with the first point and keep adding this 1/4 of the period to move from one x-coordinate to the next.

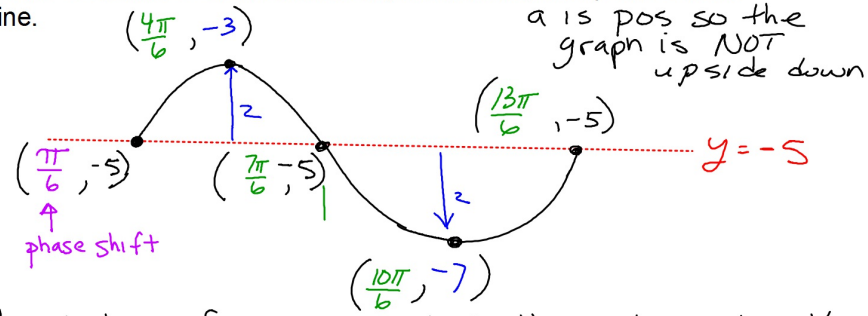
2. The distance from the first point to the last point of a cycle is 1 period. Find the period, get a common denominator with the first point and add to get the x-coordinate of the last point.
To find the x-coordinate of the 3rd point you can average the 1st and 5th point.
To find the x-coordinate of the 2nd point you can average the 1st and 3rd point.
To find the x-coordinate of the 4th point you can average the 3rd and 5th point.

Sketch one period of the graph of

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

Amplitude = 2
period = $\frac{2\pi}{1} = 2\pi$
midline: $y = -5$
phase shift: $\frac{\pi}{6}$ RT

Label the coordinates of all minimums, maximums, and points on the midline.



The distance from any point to the next point is 1/4 of a period. Find 1/4 of a period & begin at the first pt and keep adding this amount to move to each of the next pts.

period = 2π
1/4 period = $2\pi/4 = \pi/2$
get common denominator w/ 1st pt: $\pi/2 = \frac{3\pi}{6}$

Sketch one period of the graph of

$$y = 7\text{Sin}(5(x + \frac{2\pi}{3})) - 1$$

Label the coordinates of all minimums, maximums, and points on the midline.

See next screen for answer.

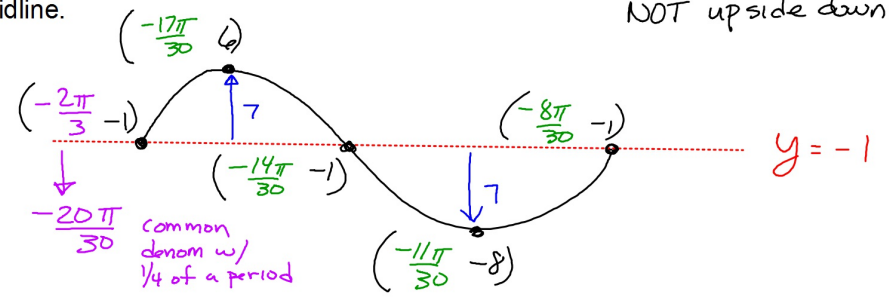
Sketch one period of the graph of

$$y = 7\text{Sin}(5(x + \frac{2\pi}{3})) - 1$$

Amp = 7
period = $\frac{2\pi}{5}$
midline: $y = -1$
phase shift: $\frac{2\pi}{3}$ Left

Label the coordinates of all minimums, maximums, and points on the midline.

NOT upside down



period = $\frac{2\pi}{5}$
1/4 of a period = $\frac{2\pi}{5} \cdot \frac{1}{4} = \pi/10$
get common denominator with 1st pt: $\frac{\pi}{10} \rightarrow \frac{3\pi}{30}$