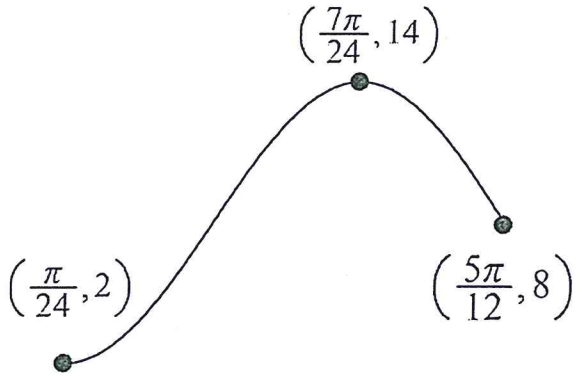
Bellwork Hon Alg 2 Monday, May 22, 2017

1. $y = -7\text{Sin}(3(x - \frac{7\pi}{6})) - 2$

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

2. Write a Sine Equation for this graph:



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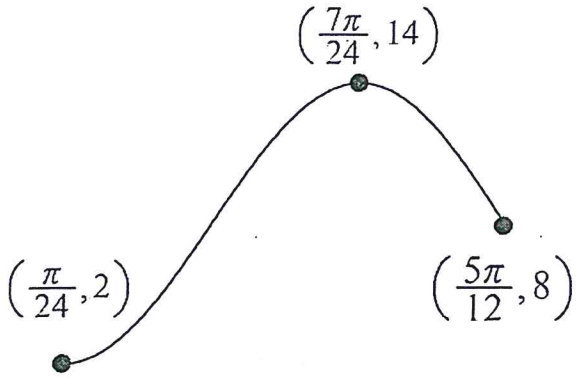
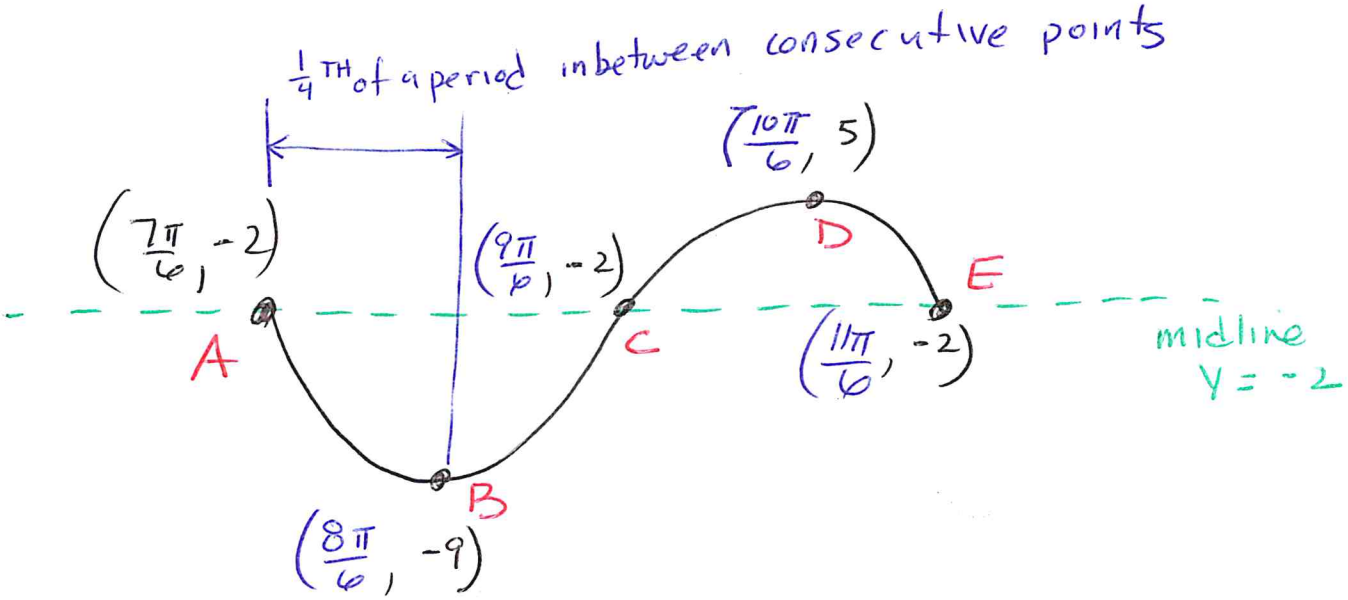


Hon ALG 2 Bellwork Mon 5-22-17 Answers

(1) $y = -7\sin(3(x - \frac{7\pi}{6})) - 2$

- Amplitude = 7
- Midline: $y = -2$
- period = $\frac{2\pi}{3}$
- phase shift: $\frac{7\pi}{6}$ RIGHT
- upside-down



$\frac{1}{4}$TH of a period = $\frac{1}{4} \cdot \frac{2\pi}{3} = \frac{\pi}{6}$

STARTING AT $\frac{7\pi}{6}$ add $\frac{\pi}{6}$ to get each of the next four X-coordinates

X-coord

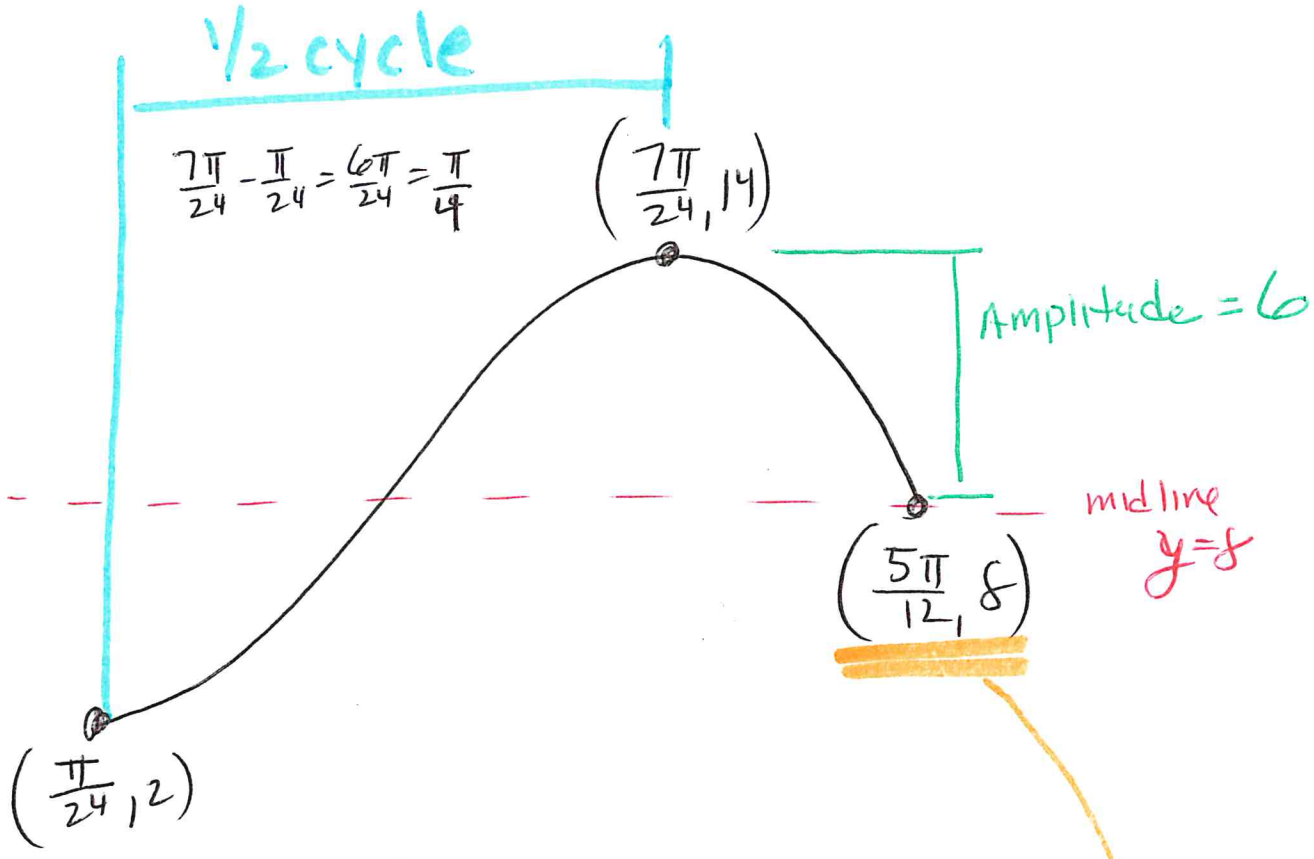
point B: $\frac{7\pi}{6} + \frac{\pi}{6} = \frac{8\pi}{6}$

point C: $\frac{8\pi}{6} + \frac{\pi}{6} = \frac{9\pi}{6}$

point D: $\frac{9\pi}{6} + \frac{\pi}{6} = \frac{10\pi}{6}$

point E: $\frac{10\pi}{6} + \frac{\pi}{6} = \frac{11\pi}{6}$

(2)



$\frac{1}{2}$ cycle $= \frac{\pi}{4} \rightarrow$ 1 cycle $= \frac{\pi}{4} \cdot 2 = \frac{\pi}{2}$

period $= \frac{\pi}{2} \rightarrow b = \frac{2\pi}{\pi/2} = 2\pi \cdot \frac{2}{\pi} = 4$

IF START AT $\left(\frac{5\pi}{12}, 8\right)$

phase shift is $\frac{5\pi}{12}$ RT and Graph is upside down

$$y = -6 \sin\left(4\left(x - \frac{5\pi}{12}\right)\right) + 8$$