4.5 Graphs of Sine and Cosine Functions

Name: Date: May 22, 2013

P 46. Sketch the graph of

$$y = \sin \frac{\pi x}{4}.$$

(Include one full period.) Find and Label x and y-intercepts (if any). Find the amplitude, period, phase shift, and midline.

P 55. Sketch the graph of

$$y = 2 + \frac{1}{10}\cos 60\pi x.$$

(Include one full period.) Find and Label x and y-intercepts (if any). Find the amplitude, period, phase shift, and midline.

P 60. Sketch the graph of
$$y = -3\cos(6x + \pi).$$

(Include two full periods.) Find and Label x and y-intercepts (if any). Find the amplitude, period, phase shift, and midline.

P 84. Write an equation for the function that is a sine curve with period 4π, amplitude 3, left phase shift of $\pi/4$, and a vertical translation down 1 unit.

P 94. A Ferris wheel is built such that the height h (in feet) above ground of a seat on the wheel at time t (in seconds) can be modeled by

$$h(t) = 53 + 50 \sin\left(\frac{\pi}{10}t - \frac{\pi}{2}\right).$$

(a) Find the period of the model. What does the period tell you about the ride?

(b) Find the amplitude of the model. What does the amplitude tell you about the ride?

(c) Graph one cycle of the model.