Additional Problems Assignment 6
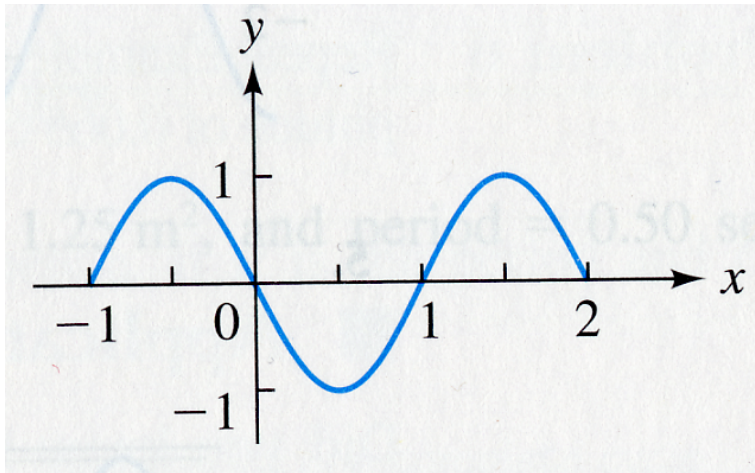
1. Consider the function $y = 5\sin(3x)$.
   (a) What is the amplitude and period of the function.
   (b) Graph the function over one period.

2. Construct a graph of each of the following:
   (a) $y = 2\sin(x) + 1$
   (b) $y = \sin(x) - 1$

3. Sketch the graph of each of the following for one period:
   (a) $y = 2\sin(x)$
   (b) $y = 4\sin(x/2)$
   (c) $y = 3\cos(x)$
   (d) $y = \sin(x - \pi/4)$

4. Write a function (involving the sin function) that describes the following:

5. The horizontal displacement, d, of the bob on a pendulum is given by $d = 8\sin(2\pi t)$, where d is expressed in centimeters, t in seconds.
   (a) What is the displacement after 2.5 seconds?
   (b) What is the displacement after 3.25 seconds?
   (c) What is the amplitude of the displacement of the bob on the pendulum?
   (d) What is the period of the displacement of the bob on the pendulum?