1. (1 pt each) Determine which of the following examples describe a function.
   (a) \{ (7, -2), (5, 6), (3, -8), (4, -8), (10, -2) \}

   (b) 
   \[
   \begin{array}{c}
   -3 \\
   6 \\
   5 \\
   8 \\
   \end{array}
   \rightarrow
   \begin{array}{c}
   12 \\
   \\
   3 \\
   -5 \\
   \end{array}
   \]

   (c) \( 3x^2 + 7y = 11 \) where \( x \) is the input.

2. (1 pt each) The daily profit \( P \) from producing and selling Blue Chief Bicycles is given by
   \[
P(x) = 32x - 0.1x^2 - 1000,
   \]
   where \( x \) is the number of bicycles produced and sold and \( P(x) \) is in dollars.

   (a) Find \( P(100) \) and explain what it means.

   (b) Find the daily profit from producing and selling 160 bicycles.
3. (2 pts each) Find the domain of each of the following functions.

(a) \( f(x) = \frac{3x - 2}{6x^2 + 7x - 20} \)

(b) \( g(x) = \frac{\sqrt{8 - 3x}}{x + 9} \)

4. (1 pt) Find the slope of the line passing through \((-3, 5)\) and \(\left( \frac{1}{2}, -7 \right)\).
5. (1 pt each) In seawater, the pressure $p$ is a function of the depth $d$ according to the model

$$33p - 18d = 496,$$

where $d$ is the depth in feet and $p$ is in pounds per square inch.

(a) What is the slope of the graph of this function?

(b) Interpret this slope as a rate of change.

6. (1 pt each) Let $f(x) = 4x^2 - 3x + 1$.

(a) Find $f(-2)$.

(b) Find $f(3)$. 

7. (2 pts each) A dam is built on a river to create a reservoir. The water level $W$ in the reservoir is given by the equation 

$$W(t) = 4.5t + 28,$$

where $t$ is the number of years since the dam was constructed and $W(t)$ is measured in feet.

(a) Find $W(10)$ and explain what it means.

(b) Find the slope and interpret its meaning in the context of the problem.

(c) Find and interpret the vertical intercept of the function.

8. (5 pts) The profit $P$ from the production and sale of $x$ digital cameras is given by the function 

$$P(x) = 1500x - 8000 - 0.01x^2,$$

where $x$ is the number of units produced and sold. Use Excel to graph this function (connected with a smooth curve with no points) on a viewing window with $x$ between 0 and 500. A printout of your excel sheet must be accompanied with this homework. Include your name in the title of the graph.