Review

1. Sketch the shape of this function then state the characteristics that describe it. (ideas: odd/even/neither, continuous/discont, increasing/decreasing, asymptotes/zeros)

$$y = 2^{1-x} - 1$$

2. A certain cell phone company charges $40 for the first 500 minutes of a month. After that, each minute costs $0.20.
a) Write a piecewise function that represents the cell phone bill amount according to how many minutes are used.
b)Sketch the function.

3. A particle moves along the real number line, and its position after t seconds is given by the function $s(t) = t^2 - 12t + 35$, where $t \geq 0$.
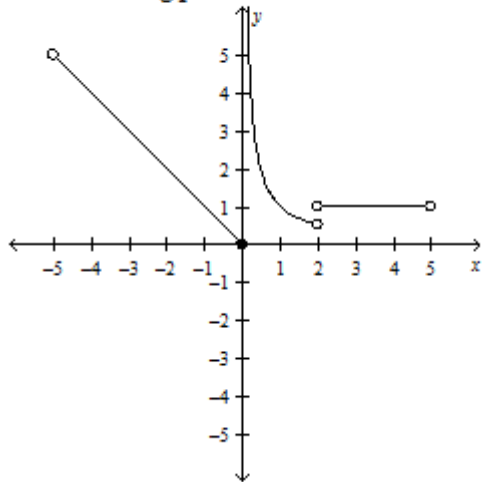a)At what times is the particle positioned at the number 0?
b) What is the inverse of this function and what does it represent?

4. For the following piecewise function.

$$h(x) = \begin{cases} 5x - a, & x < -20 \\ \dfrac{x^2}{6}, & -20 \leq x < 10 \end{cases}$$

Find "a" that will make this function continuous.

5. Determine the algebraic representation of the following piecewise function.

6. Suppose that half of a piece of wire is bent to construct a perfect square.
   a. Express the area of the square as a function of the length of the original piece of wire.
   b. What is the inverse of the function? What does it represent?