Math 1513 - College Algebra
Quiz #10 - 2011.09.20
Solutions

1. What makes a piecewise function a piecewise function? Give an example.

   A piecewise function is a function made up of a collection of functions (pieces) on different domains. As an example, the absolute value function is defined piecewise as

$$|x| = \begin{cases} -x, & x < 0 \\ x, & x \geq 0 \end{cases}$$

2. Sketch the graph of a function $f(x)$ which satisfies the following properties:

   - The domain of $f(x)$ is $[-10, 10)$
   - The function is positive and decreasing on $[-10, -5)$
   - $f(-5) = 0$
   - The function is constant on $[-5, 0]$
   - $f(0) = 0$
   - The function is negative on $(0, 5)$
   - The function is decreasing on $(0, 3)$
   - The function is increasing on $(3, 10)$
   - The function is positive on $(5, 10)$

   Answers will vary, but here is an example of a function that works: