**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**September 20th, 2012**

**AP Calculus 1, Mrs. Sulkes**

**More Practice with Limits, Continuity, and IVT**

1. List the intervals on which  is continuous:

1.  b. 

2. Find the value of  that would make  **continuous** for all values of . Show work.



3. Given 

1. Graph the function:
2. At what value is this function discontinuous? Explain why it is discontinuous using the definition of continuity.

c. Is this function continuous on the interval ? If yes, prove using the definition of continuity on a closed interval. If no, explain why it is not continuous using the definition as well.

4. Use the Intermediate Value Theorem to show that  has a zero in the interval [1,2]. Then find the zero.

5. Using the Intermediate Value Theorem, prove that  has at least one solution. (Hint: First find a closed interval on which you suspect that a solution exists)