Math 161 10/24/13

Quiz 4 25 Minutes

Name: _____

Student ID: _____

Show all work to receive full credit.
Cross out all work you don't want graded.
Circle your final answer.

1. Determine if the following statements are true or false. If true, explain your answers. If false, provide an example when the statement is false.

   (a) If $f'(c) = 0$, then f has a local maximum or minimum at c.

   (b) If f is continuous on (1,5), the f attains an absolute maximimum value $f(c)$ and an absolute minimum value $f(d)$, for some c, d in $(1, 5)$.

2. Find the absolute maximum and absolute minimum values of the function $f(x) = 2x^3 - 3x^2 - 12x + 1$ on the interval $[-2, 3]$.

3. (a) State the Mean Value Theorem .

   (b) State Rolle's Theorem.

(c) Show that the equation $x^3 + 4x + 15 = 0$ has exactly one real root.