

Name: _____ Academic Integrity Signature: _____

I have abided by the UNCG Academic Integrity Policy.

Note: Correct numerical answers without justification will receive little or no credit.

1. (6 points) Complete the Statement of the *First Derivative Test for Local Extrema*.

Suppose that c is a of a function f , and that f is at every point in some interval containing c except possibly at c itself. Then Moving across this interval from left to right,

1. if f' changes from negative to positive at c , then

2. if f' changes from positive to negative at c , then

3. if f' does not change sign at c , then

2. (4 points) Complete the statement of the *Mean Value Theorem*.

Suppose f is on $[a, b]$ and in the interval's interior (a, b) . Then there is at least one point c in (a, b) at which

$$\frac{f(b) - f(a)}{b - a} = f'(c).$$