Topics for Chapter 4 Test 2

1) Rates of Change

    a. Position, velocity, and acceleration

    b. The Mean Value Theorem $\quad f'(c) = \dfrac{f(b) - f(a)}{b - a}$

$$m_t \quad = \quad m_s$$

    c. The Mean Value Theorem $\quad v(c) = \dfrac{s(b) - s(a)}{b - a}$

$$V_{inst.} \quad = \quad V_{avg}$$

2) Behavior of Functions

    a. The Mean Value Theorem $f'(c) = \dfrac{f(b) - f(a)}{b - a}$

$$m_t \quad = \quad m_s$$

    b. Finding relative and absolute extrema

    c. Finding points of inflection

    d. Using the graph of f' to interpret f

3) Optimization Problems

4) Linearization

5) Related Rates; *of all kinds*
        a. Establish an equation that you will use to find the rate of change
        b. Eliminate any "third" variables(can you make a substitution?)
        c. Remember, every rate of change is with respect to t so use the chain rule when differentiating.

All topics highlighted in green are on the in class test. All 5 main topics are covered on the take-home test. No notes are allowed for the in class test.