Exam 3 Review Topics

3.11 Linearization and Differentials

- will focus on linearization only

4. 1 Extreme Values of Functions

- Finding All Critical Points (HW #45—55 odd)

- Finding The Minimum and Maximum Value Over an Interval (HW #21—29 odd, 83, 85) (make sure you check all critical points within the interval and also the endpoints of the interval)

4. 2 The Mean Value Theorem

- Applying the Mean Value Theorem: Finding the value(s) of c that satisfy the conclusion of the MVT. (HW #1, #7)

4. 3 and 4.4 Derivatives and Curve-Sketching (4.3 1-33 odd, 4.4 #1, 3, 11, 13, 29, 33, 35, 37, 41, 51, 57, 91, 93)

- Critical Points
- Intervals of Increase and Decrease
- Concavity
- The First-Derivative Test
- The Second Derivative Test
- Sketching Functions using this information

4. 5 L'Hôpital's Rule 4.5 (1, 3, 5, 11, 19, 41, 45, 75)

- Know when and how to apply L'Hôpital’s rule.

4.6 Applied Optimization 4.1—15 odd

- There will likely be an applied optimization problem on the exam.

4.8 Anti-Derivatives

- Be able to guess an example of an anti-derivative for a simple function with polynomial, sin, cos or e^x terms. 4.8 (3, 7, 19, 25, 41, 43)
- Solve an anti-derivative initial value problem. 4.8 (89, 91, 97)