MATH 135, section 1 – Calculus 1
Review Sheet – Exam 2
October 11, 2013

General Information

- The second exam of the semester will be given in class on Friday, October 25 (this is the Friday of the week after October break).
- We have some TI-30 scientific calculators which do NOT have graphing capabilities, so be prepared to answer questions without a graphing calculator. (Note: Some of you may have one of these calculators purchased for use in Chemistry courses here. That is also OK.)
- Use of cell phones, I-pods, and all other electronic devices *is not allowed* during the exam. Please leave such devices in your room or put them away in your backpack (make sure cell phones are *turned off*).

What will be covered

This exam will cover all of Chapter 2, and sections 3.1, 3.2. This includes specifically:

1. Limits (including one-sided and two-sided versions); calculating limits via algebraic manipulations and the limit laws for sums, products, quotients, the "squeeze theorem" etc.
2. Continuity and properties of continuous functions
3. How to tell $\lim_{x \to a} f(x) = \pm\infty$, what $\lim_{x \to \pm\infty} f(x) = L$ means
4. Derivatives via the limit definition, derivative functions, interpretations of $f'(a)$ as the slope of the tangent to $y = f(x)$ at $x = a$, and as the rate of change of $f(x)$ with respect to x.
5. What f' says about f (relation of sign of f' to increasing or decreasing property of $f(x)$)
7. Derivative rules for powers, exponentials, sums, constant multiples, products, quotients.

How to prepare

You should go over the homework problems as well as your class notes. Many of the problems and questions we discuss in class are excellent examples of test questions. I have also listed some sample problems from the text below. Answers can be found in the text.

We are in the process of setting up a review session with Calculus Workshop tutors during the week before the exam. More on this later.

Suggested review problems

Section 1.7/9, 13, 29, 33
Chapter 2 Review Problems/1, 3 - 15 odds, 21, 23, 25, 27, 31, 33, 35ab,37, 39, 41, 43.
Section 3.1/3 - 23 odds, 43, 47
Section 3.2/3, 5, 7, 9, 11, 13, 35