Reading Assignment for Section 3.1

MATH 130: Calculus I, Sections 2 and 3
Fall Semester 2013

Follow the general guidelines for the Reading Assignment (the salmon colored handout). Be sure to include and label all four standard parts a,b,c,d of the Reading Assignment in what you hand in. Be sure to **staple** together each assignment, and include your **name** and which **section** of calculus you are in at the top. Neatness is appreciated!!!

Due: at the beginning of class on Monday, September 30th

Read:

Section 3.1, pages 121-131: Derivatives!

We have talked about the idea of the slope of the tangent line several times before in class. Now we will get to start calculating it using the formula we derived at the beginning of Chapter 2.

Remember that your answers should include complete sentences for every question.

Reading Questions for part (a):

1. The derivative can represent many different things. If we are talking about functions in general, a derivate is the same thing as what? (You should have **two** different answers for this and remember to write in complete sentences. Check out the top of page 125.)

2. (a) If f is continuous at $x = a$, must f be differentiable at $x = a$? (b) If f is differentiable at $x = a$ must f be continuous at $x = a$? Explain both parts carefully and use graphs of functions to illustrate your answers where possible.

3. Suppose $f(x)$ has a horizontal tangent line at $x = 3$. (a) What is the value of $f'(3)$? Explain. (Think about your answer for number 1 to consider the relationship between tangent lines and the derivative.) (b) How would this help you begin to draw the graph of $f'(x)$?

Remember parts b-d on the salmon handout!