Reading Assignment for Section 3.1

MATH 130: Calculus I, Section 4
Spring Semester 2017

Follow the general guidelines for the Reading Assignment (the salmon colored handout). Be sure to include and label all four standard parts 1,2,3,4 of the Reading Assignment in what you hand in. Be sure to **staple** together pages if you have more than one, and include your **name** at the top of the page. Neatness is appreciated!!!

Due: at the beginning of class on Monday, February 20th

Read:

Section 3.1: Continuity, pages 126-132

Notes: 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. Be sure to answer all parts of each question!

Reading Questions for part (1), Response:

a) 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.)

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

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

Remember parts 2-4 on the salmon handout!