Reading Assignment for Section 3.4

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 Wednesday, October 9th

Read:

Section 3.4, pages 155-160: Derivatives of Trigonometric Functions!

Notes:

This reading discusses some special limits involving $\sin x$ and $\cos x$. Then we use these special limits to derive the formulas for the derivatives of these trigonometric functions using the definition of the derivative. Since the other four trigonometric functions can be written in terms of $\sin x$ and $\cos x$, the derivatives of the rest can be determined using the quotient rule. Make sure that you address all parts of each question.

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

Reading Questions for part (a):

1. (a) There is a special limit involving $\sin x$ in this section. What is it? (b) What theorem is used to prove the value of this limit? (c) What three things are used to create the inequalities for the proof? Briefly show with a diagram why you know these three fulfill the inequality. You do NOT need to explain where the formulas come from or even mention the formulas. Just show what things are being compared and how they relate to each other.

2. Use the quotient rule to determine the derivative of $\sec x$. (See Example 3 on page 159 for how this is done for $\tan x$.)

Remember parts b-d on the salmon handout!