Main Exercises Week 8

MATH 130: Calculus I, Sections 2 and 3 Your Name (Print): _____

Follow the general guidelines for the Main Exercises assignments (the salmon colored handout). Be sure to **staple** together your pages if you have more than one, and include your **name** and which **section** of calculus you are in at the top. Neatness is appreciated and makes a good first impression!!!

Due: at the beginning of class on Friday, October 18th

Remember: Your write-up should be your own. You may discuss these problems, but you should be alone when you write them up, using only outlines of any group or TA discussions.

1. Evaluate $\lim_{x\to 0} \dfrac{\sin 6x \cos 6x}{\sin 3x}$. Be sure to show each step carefully.

2. Find the derivatives of the following functions. Simplify your answers by eliminating negative exponents and gathering like terms.

   (a) $f(x) = \dfrac{e^x \tan x}{5x^4 + 7x^2 - 9}$

   (b) $y = \sin(\sqrt[3]{x}) + \sqrt[3]{\sin x}$