Main Exercises Week 3

MATH 130: Calculus I, Section 2   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** at the top. Neatness is appreciated, makes a good first impression, and can earn you a bonus point!!!

Due: at the beginning of class on Monday, February 4th

Remember: Your write-up should be **your own**. You may discuss these problems with others, but **you should be alone when you write them up**, using only outlines of any group or Intern discussions. EXPLAIN and SHOW YOUR WORK!!! Final answers will not receive full credit without supportive explanations. You may use your own paper on which to write these up.

1. Let $f(x) = 5x^2 - 3x + 2$. Simplify the expression $\dfrac{f(x+h) - f(x)}{h}$.

2. Assume $\log_a x = 0.21$, $\log_a y = 0.57$ and $\log_a z = 0.42$. Evaluate $\log_a \dfrac{a^3 x^{\frac{5}{6}}}{\sqrt{yz}}$. Be sure to show all steps clearly – don't skip any! (Hint: be sure to break the expression down using log rules before you start plugging in!)

3. Assuming $x > 0$, simplify the following: $\sec\left(\arctan\left(\dfrac{x}{\sqrt{36 - x^2}}\right)\right)$.