

Main Exercises Week 4

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

Follow the general guidelines for the Main Exercises assignments (the salmon colored hand-out). 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!!! Remember that your write up should be your own.

Due: at the beginning of class on Friday, October 4th

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. If $f(x) = x^3 - 2x^2 + x - 2$, show that there is a number c such that $f(c) = 7$. Be sure your explanation is detailed (this does not mean long necessarily!).

2. Let $f(x) = \sqrt{x^2 - 7}$ and $a = 4$.

(a) Find $f'(a)$ using the second definition of the derivative on page 123.

(b) Determine an equation of the line tangent to the graph of f at $(a, f(a))$.