

Main Exercises Week 7

MATH 130: Calculus I, Section 4

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 Friday, March 3rd

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.

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 $f(x) = \sqrt{ax - b}$, where a and b are constants.
 - (a) Find $f'(x)$ using the **definition** of the derivative.
 - (b) Let $g(x) = \sqrt{17x - 9}$ and use part (a) to find $g'(x)$.
 - (c) Determine an equation of the line tangent to the graph of g when $x = 2$.