Main Exercises Week 15

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, December 6th

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 TA discussions.

1. A rectangular poster is to have an area of 180 in^2 with 1-inch margins at the bottom and sides and a 2-inch margin at the top. What dimensions will give the largest printed area?

Be sure to include all steps in your solution. Note 1: there are two different areas to consider here – the area of the whole poster and the area of the printed portion. Note 2: you will have some choices to make as to what your variables represent; it is beneficial to make your constraint equation the LESS complicated equation and this can be done with the choice of variable assignments.

2. Solve the following indefinite integral: $\displaystyle\int \frac{\sqrt{x} + 2x^2 - x^6}{x^3} dx.$