Main Exercises Week 6

MATH 131: Calculus II, Section 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** at the top. Be **NEAT** and **SHOW YOUR WORK**!!!

Due: at the beginning of class on Friday, October 9th

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. Be sure to show your work! How you get there is more important than the final answer. Make sure you read the complete question with all the directions and hints before starting a problem. **If you use u-substitution, SHOW IT, no matter how small; do not just do it in your head.**

1. Do Exercise 10 from Section 6.3 in the text (page 430). Even though they already provide you with a diagram, be sure to include at least a diagram of your base in your solution, labeling your points of intersection and showing your estimating rectangle.

2. Find the volume of the solid of revolution formed by revolving the region bound by $y = \sqrt{\tan x}$, $y = 1$, and $x = 0$ about the x-axis. (Hint: $y = \sqrt{\tan x}$ looks a lot like $y = \tan x$ but will only be defined for values of x that make $\tan x$ positive.) Be sure to include a graph in your solution, label your points of intersection and show your estimating rectangles. Which method should you use? There is only one whose integral you would know how to solve at this point! Note that this integral will require you to think carefully about integrating! Remember all the tools in your toolbox - old and new!