Review for Final Exam

Part I: Previous Exams

Most of the test will look very much like your first four exams, except that there will NOT be any Chapter 1 problems. Chapter 1 material can and will show up inside other problems, so you still have to know it all.

- Your first priority is to make sure that you can work all the problems on the old exams (except for Chapter 1 problems). Blank exams are posted on the final exam web page.

- Note that Chapter 2 requires you to compute derivatives using the limit definition. You MUST know the definition and you WILL see this problem on the final. You should also know that you CANNOT use L’Hospital’s rule on such a problem. This is the one time I will require you to use a specific technique.

- After you make sure you can do all the problems on old exams you should look through the first four review sheets to make sure you are not forgetting anything.

- The website has a copy of the last final I gave. As one of the last things you do to study for your final, you should work the old one as a practice exam with a two hour time limit.

Part II: Section 5.5

There will be one or two problems from this section.

- Know that you MUST substitute in order to antidifferentiate a function inside a function.

- Know that you MAY substitute to simplify the denominator of a quotient.

- Know that once you write down \( u = \) something, you are locked into the following procedure:

  1. Find \( \frac{du}{dx} \)
  2. Solve for \( dx \)
  3. Substitute as much as possible in the original problem.
  4. Change limits if the problem is a definite integral.
  5. Get rid of any extra \( x \)'s
  6.

- After that you have to hope you can do the new antiderivative.

- If you can, great. Don’t forget to change back to \( x \)'s.

- You also need to be able to do definite integrals that involve substitution. Don’t forget to change the limits of integration.