**Math 1914 — Fall 2015**
**Review for final exam**

The final exam will be comprehensive. In addition to the material on the first three exams, the final will also cover sections 5.1, 5.2, and 5.3 (see also Assignments 12 and 13 and Quiz 7).

As far as the material in chapters 1 through 4 of the text is concerned, you can use the review sheets for the three midterms to study for the final as well. The only changes to these review sheets for the final exam are:

• I won't ask for a proof of the product rule on the final exam, so you do not need to memorize that.

• On the final, since there is more time available, I might ask a graphing question in which you graph everything about a function — vertical and horizontal asymptotes, critical points, intervals of increase/decrease, intervals of concavity up/down, and inflection points.

• You might be asked to do definite integrals by substitution on the final.

Below is a list of what topics to review from sections 5.1, 5.2, and 5.3.

**5.1. Areas between curves.** You need only review pages 356 and 357, and Example 7 on pages 361 and 362. You can skip the remainder of the section.

**5.2. Volumes.** You should review the entire section. Note: All the questions about volumes that I will ask on the final will be about volumes of solids of revolution. I will not ask a question on the final like Examples 7, 8, and 9; so it's not strictly necessary to look at these examples. However, they are interesting examples, and looking at them should improve your overall understanding of what an integral is and what it does. So you should probably spend at least a few minutes looking at them anyway, especially if you're going on to Calculus II.

**5.3. Volumes by cylindrical shells.** You should review the entire section.