

Math 305 Fall 2011
Assignment #2

This assignment is due at the beginning of class on Tuesday, September 20, 2011.

1. Read Sections 1 and 2 on pages 1–17 as a reminder of some basics of logic. This material will appear throughout the course as we prove mathematical statements. I did not think that it was necessary to devote class time to study it directly. In fact, I think this is even covered in Math 221 so you've probably seen most of it before. In Section 2, the symbols \forall , \exists , \ni , and \implies are introduced. I prefer to have you write things out without symbols at the beginning of the course to get used to constructing mathematical arguments.
2. Problem #1.4 on page 8 and Problem #1.10 on page 9.
3. Problem #2.5 on page 15 and Problem #2.8 on page 16. Seriously. This is why I want you to write things out without symbols at the beginning of the course.
4. Read Sections 3 and 4 on pages 17–35 as a reminder of some basic techniques of proof. I think this was all covered in Math 221. We will, however, encounter all of these techniques throughout the course.
5. Problem #4.15 on page 34.
6. Read over Section 6 on pages 50–55 to get a feel for the material covered in this section. We will return to it later in the course as needed.
7. Read Section 7 on pages 60–71.
8. Problem #7.7 on page 74.
9. Prove Theorem 7.15 on page 66. Note that solutions to (c) and (f) are outlined as part of Practice Problem 7.16, and the solution to (d) is given on page 366 as the answer to Problem 7.15.