Before beginning this homework assignment, please review the guidelines for submitting homework. Please write down the total amount of time spent working on the assignment at the top of what you turn in. Remember that at least one problem from each assignment must be written in \LaTeX.

1. First Theorems and Proofs

In this assignment you are being asked to read a fair amount of Houston’s book. Not all of it will make sense immediately and a good portion of it will be covered more slowly in the days ahead. The purpose of this assignment is to take our first steps towards reading and writing proofs.

1. Read Chapters 16 – 18, 20, and 21 of Houston’s book.

2. Do Exercise 16.1 (ii) on page 114 of Houston. Analyze the theorem following the outline given by Houston beginning on page 110. (You should address each of the tasks given in boldface by Houston.)

3. Do Exercise 18.2 (ii) on page 124 of Houston. Analyze the proof following the outline given by Houston in this chapter. (You should address each of the tasks given in boldface by Houston.)


   (Hint for (iii): Remember that a number such as 2971 is, by definition, equal to $2 \cdot 10^3 + 9 \cdot 10^2 + 7 \cdot 10 + 1$.)

5. Do Exercise 21.1 (i), (ii), (iii), (iv), (v). Be prepared to discuss your answers in class.