## Math 131A Winter 2018: Homework 1, Due 1/18 1. Exercise 1.8.

2. Using induction, show that every integer n > 1 is either a prime or a product of primes.

3. Show that  $\sqrt{p}$ , where p is a prime number, is not a rational number.

4. Exercise 3.4.

5. Let (F, +, ; <) be an ordered field. Show that for given two elements  $x, y \in F$  which satisfies x, y > 0 we have x < y if and only if  $x^2 < y^2$ . Specify what axioms or theorems in the book you are using.

6-8. Exercise 4.7, 4.8, 4.10.