

Math 109 Fall 2016 Homework 2, due 10/7/2016 in HW boxes
in the basement of AP&M by 3 pm

1 Reading and practice

Read Chapters 5-6 of Eccles. Do the end of chapter exercises as you read, and check your work against the answers in the back. These exercises are to test your understanding and they are not to be written up and handed in.

2 Exercises to submit on Friday 10/7

2.1 exercises from the text

In the Problems I which begin on page 53, do #8, 9, 11, 12, 13, 14, 16, 17, 19.

(See problem 18 for the definition of the notation used in problem 19.)

2.2 additional exercise not from the text

A. Let x and y be real numbers. Recall that x is rational if $x = a/b$ for some integers a and b with $b \neq 0$. A real number which is not rational is called irrational. We proved in class that $\sqrt{2}$ is irrational.

(a). Prove that if x is rational and y is irrational, then $x + y$ is irrational.

(b). Suppose that we know that x and y are both irrational numbers. Can we say for sure if $x + y$ is rational or irrational? Justify your answer.