

Please explain briefly but clearly your reasoning (unless it is totally obvious from your answer, i.e., when you have to list the elements of a set or to draw a set in the plane).

Please write the problems in the same order as they are given in the assignment.

Note that the odd-numbered problems have answers at the end of Hammack's book. I strongly suggest that you do *all* odd-numbered problems for practice; moreover, many of them are very similar to the assigned homework problems.

**Hammack, Chapter 7:** Exercise 22.

**Hammack, Chapter 8:** Exercises 4, 16, 20, 22, 30.

**Hammack, Chapter 9:** Exercises 4, 14, 26.

**Hammack, Chapter 10:** Exercises 6.

**Additional Problem 1.**

In class we proved one of the distributive laws for sets, namely

$$A \cup (B \cap C) = (A \cup B) \cap (A \cup C) .$$

Prove the other distributive law for sets,

$$A \cap (B \cup C) = (A \cap B) \cup (A \cap C) .$$