Homework 8

April 15th
Due April 22nd

Your assignment may be handwritten or typeset, but in any case it should be neat and readable. Your name, class number and assignment number should be clearly visible (like on this document for example).

You are encouraged to work in groups for this assignment. However, the redaction should be done on one's own: do not copy some other student's work, or give your assignment to some other student. To consult textbooks or online resources is fair game; on the other hand, to look up the exact exercise and its solution is not.

Exercises from the book

Included in this homework are exercises 2.42, 2.46, 2.48, 3.1, 3.4, 3.5, 3.14, 4.1, 4.5, 4.6 and questions (a,b,c) of 4.9.

Exercise 1

This is a rewriting of exercise 3.1 of the book.

1. Let (X,Y) be uniform on the four points (0,0), (1,0), (1,1) and (2,1). Find the marginal probability mass functions of X and Y. What are their ranges?

2. Find all distributions of (X',Y') such that the marginals X' and Y' are uniform with the same range as X and Y.