## MATH 416: Probability – Homework 3

(maximal points = 50)

## Due: Tuesday, September 10

(Turn in class or in my office until 4pm)

Each point is worth 10 points and five of them will be graded. You can work on these problems in small groups, but you need to write down your own solution set and hand it separately. Show your work and appropriate steps of each problem in order to receive full credits.

## From the textbook <u>Problems</u> section:

Chapter 3. 11, 22, 30, 34, 39, 48, 57, 59, 83

## Additional Problem.

1. Consider the following 7 door version of the Monty Hall problem. There are 7 doors, behind one of which there is a car (which you want), and behind the rest of which there are goats (which you don?t want). Initially, all possibilities are equally likely for where the car is. You choose a door. Monty Hall then opens 3 goat doors, and offers you the option of switching to any of the remaining 3 doors. Assume that Monty Hall knows which door has the car, will always open 3 goat doors and offer the option of switching, and that Monty chooses with equal probabilities from all his choices of which goat doors to open. Should you switch? What is your probability of success if you switch to one of the remaining 3 doors?