

## STA 200A: Homework 3

Note, the “Problems” and “Theoretical Exercises” are listed in separate sections at the end of the chapter.

The problem numbers are based on the **9th edition**. (A copy of these problems is available on the course webpage under the folder ‘book problems’.) Below the notation 3.T11 means Chapter 3, Theoretical Exercise 11. Similarly, the notation 4.P21 means Chapter 4, Problem 21.

1. Three cooks A,B,C, bake a special cake and with probabilities 0.02, 0.03, 0.05 respectively the cake fails to rise. In the restaurant where they work, A bakes this cake 50% of the time, B bakes it 30%, and C bakes it 20%. What proportion of the failures are caused by A?
2. 3.T11
3. 3.P66
4. 4.P21
5. 4.P26
6. 4.T13
7. 4.T17
8. 4.T25
9. Two boys play basketball in the following way. They take turns shooting and stop when a basket is made. Player A goes first and has probability  $p_1$  of making a basket on any throw. Player B, who shoots second, has probability  $p_2$  of making a basket. The outcomes of the successive trials are assumed to be independent.
  - (a) Find the frequency function for the total number of attempts.
  - (b) What is the probability that player A wins?