

## Assignment two, MATC44, 2012

*Each problem is 10 points*

**Problem 1.** Take a random arrangement of the word BANANA. What is the probability that B is followed by an A?

**Problem 2.** In how many ways can we divide 15 people into 3 basketball teams (each team has 5 players)?

**Problem 3.** How many arrangements of five 0's, five 1's and five 2's are there with no pair of consecutive 0's.

**Problem 4.** How many ways are there to distribute 20 different books among 4 students? (5p) How many ways can we distribute the books if 2 students get 4 books and the other two get 6 books? (5p) (Remark: It is prescribed which two students get 4 books.)

**Problem 5.** How many non negative integer solutions are there to the pair of equations:  $x_1 + x_2 + \cdots + x_7 = 24$  and  $x_1 + x_2 + x_3 = 10$ ?