COMP 550
Algorithms and Analysis
Spring 2020
Homework 3
Due Tuesday, February 4, 2020

1. Suppose you have a fair 6-sided die with the numbers 1 through 6 on the sides and a fair 5-sided die with the numbers 1 through 5 on the sides. What is the probability that a roll of the six-sided die will produce a value larger than the roll of the five-sided die?

2. What is the expected number of rolls until a fair five-sided die rolls a 3? Justify your answer briefly.

3. Extra Problem for no credit:
Prove that it is possible to make a fair five-sided die.

For this homework you may work in groups of up to four people and groups are encouraged to turn in only one paper with everyone's names in the group on it. This will make the work of the grader easier. However, people in different groups may not collaborate.

Those who want to be part of a group and can't find others may meet in the front after class and form groups, if you desire to. You may also send email to the TA and he will assign people to groups.