SchoolNova, Math 5c
Homework 15
More Permutations and Combinations
February 11, 2018

Please provide sufficient details about how you solved the problem. More difficult problems are marked with a $*$. If unable to solve a problem, please present your thoughts and any partial solution. **For these problems, refer to the section on Combinatorics in the previous homework.**

1. A committee of 2 people is to be formed out of 6 people. How many different committees are possible?

2. If 12 people are to be divided into 3 committees of sizes 3, 4 and 5, respectively, how many different divisions are possible?

3. How many different 7 character license plates are possible, if the first 2 characters are for letters and the last 5 are for numbers? Repetitions are allowed.

4. In a certain club of 30 people, they are choosing a president, a vice-president and a treasurer. They all must be different people. How many ways are there to do this?

5. Shuffle a deck of 52 cards. How many possible outcomes are there?

6. In how many ways can you distribute, that is, divide a deck of cards among 4 players?

7. (a) From a deck of 52 cards, in how many ways can you select 1 King and 1 Jack? List some of the cases, for example,
   K Spade J Diamond.
   (b)$*$ In how many ways can you select 2 Kings and 1 Jack? Again list a few cases.

8.$*$ We roll two dice, a blue and a green. List all 36 outcomes.