**FOM 12: Chapter 4 Assignment 2** 2017 **Name**:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mark:\_\_\_\_\_\_\_\_\_\_\_\_/

1. Suppose a container has 10 balls of which 3 are red and 7 are green. A sample of 5 balls are randomly selected.

a) How many different samples are possible?

b) How many different samples contain only green balls?

c) How many different samples contain 2 red and 3 green balls?

a)\_\_\_\_\_\_\_\_\_\_

b)\_\_\_\_\_\_\_\_\_\_

c)\_\_\_\_\_\_\_\_\_\_

1. There are 3 English books, 4 Science books, and 2 Math books to put on a shelf.
   1. How many different ways can the books be arranged if all the English books, Science Books, and math books are the same?
   2. What if all the English books, Science Books, and math books are different but the English books, Science books, and Math books must be together in on the shelf?

a)\_\_\_\_\_\_\_\_\_\_

b)\_\_\_\_\_\_\_\_\_\_

1. How many 5-card poker hands are there?

3)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How many 5 card poker hands are possible that have:
2. 3 kings and 2 aces?

a)\_\_\_\_\_\_\_\_\_\_

1. At most 2 face cards?

b)\_\_\_\_\_\_\_\_\_\_

1. All face cards?

c)\_\_\_\_\_\_\_\_\_\_

1. Full House (3 of a kind and a pair)?

d)\_\_\_\_\_\_\_\_\_\_

1. Four of a kind ( ex, 22229)?

e)\_\_\_\_\_\_\_\_\_\_

1. A committee of 5 people is to be formed from a group of 7 women and 4 men. How many possible committees can be formed if:
2. The committee has 3 women and 2 men?

a)\_\_\_\_\_\_\_\_\_\_

1. The committee has at least 2 men?

b)\_\_\_\_\_\_\_\_\_\_

1. The committee then must chose a President and Vice-President, how many ways could these two positions be chosen?

c)\_\_\_\_\_\_\_\_\_\_

1. a) A lottery in which a person selects five numbers from 1 – 50. How many ways can selection be made?

b) How many ways can a selection have 4 winning numbers? (hint: how many #s are winning/non-winning in total? How many of each ground do you need on your ticket)

a)\_\_\_\_\_\_\_\_\_\_

b)\_\_\_\_\_\_\_\_\_\_

1. A woman hosts a dinner party for six of her nine friends.
2. In how many ways can she choose her six guests?
3. In how many ways can she chose her six guests if Jane and June will not attend together? (hint: how many ways to force them to come together? Then total minus that.)

a)\_\_\_\_\_\_\_\_\_\_

b)\_\_\_\_\_\_\_\_\_\_