Week in Review #6

Section 7.4: Use of Counting Techniques in Probability.

- If S is an uniform sample space
  - $P(E) = \frac{n(E)}{n(S)}$
  - $n(E)$ is the number of ways to get what we want.
  - $n(S)$ is the number of possible outcomes in S.

1. Three couples are going to an Aggie football game. They have tickets next to each other all in the same row. If the tickets are randomly given to the 6 people, what is the probability of each couple standing together?

2. A committee of 6 students are to be chosen from a group of 9 freshmen, 10 sophomores, and 7 juniors. Find the probability that

   (a) The committee has all sophomores.

   (b) The committee has a majority of freshmen.

   (c) Bill, Sue, Sara and Jim are on the committee.

   (d) Only two of Bill, Sue, Sara and Jim are on the committee.

3. Jim is taking an exam where he has to answer 10 of the 15 question on the exam. What is the probability that Jim answers at most 4 of the first 7 questions?

4. Your 4 year old nephew is playing with some blocks. The blocks are identical except for the letter on the block: one block has an M, four blocks have an I, 4 blocks have an S, and 2 blocks have a P. If your nephew places all of the blocks in a row, what is the probability that he spells the word MISSISSIPPI?

5. Two cards are drawn without replacement from a standard deck of cards. What is the probability that both cards are aces?

6. Fifteen people are all applying for three different scholarships. What is the probability that John, who is one of the 15 people, get at least 2 scholarships?