

**Week in Review #6**

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**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?