PROBABILITY

1. An urn contains 5 balls lettered A, B, C, D and E. A hat contains a slip of white paper and a slip of yellow paper. An experiment consists of choosing a ball from the urn and a slip of paper from the hat. What is the uniform sample space for this experiment?

2. The letters in the word "finite" are placed in a hat and a single letter is drawn. How many outcomes are in the uniform sample space for this experiment?

3. A bowl has 2 red and 3 green balls. A sample of 2 balls is chosen at random. What is the uniform sample space for this experiment?

4. An experiment has a sample space {a, b, c}. How many events are possible?

5. A single card is drawn from a standard deck of 52. What is the probability that the card is
      a) it is a 6 or a jack?
      b) it is a 6 and a jack?
      c) it is a heart and a queen?
      d) it is a heart or a queen?

6. Two die are rolled. What are the odds in favor of rolling a sum of 7 or at least one 6?

7. A bowl contains 6 red, 4 blue and 2 yellow marbles. A sample of 3 marbles is chosen. What is the probability that
      a) all the marbles are blue?
      b) at least one marble is yellow?
      c) exactly two red marbles?

8. A store buys sweaters from suppliers A and B. They buy 80% of their sweaters from A and 20% from B. They find that 4% of the sweaters from A are defective and 7% of the sweaters from B are defective. What is the probability that a defective sweater came from supplier A?

9. In problem #9 from Sets and Counting, what is the probability that a shopper who bought bread did not buy meat?

10. Given two events, A and B with $P(A) = 0.7$, $P(B|A) = 0.2$ and $P(B|A^c) = 0.3$, find
    a) $P(B)$ b) $P(A|B)$ c) $P(B^c|A)$

11. You have three computers available at your house. Suppose the probability of computer A failing is 2%, computer B failing is 3% and computer C failing is 1%. If these probabilities are independent, what is the probability that
      a) all will fail?
      b) at least one will fail?
      c) exactly one will fail?