Probability

1. a) Write out the sample space when flipping one coin.
   b) What is the probability of flipping a head?
   b) What is the probability of flipping a tail?

2. a) Write out the sample space when flipping two coins.
   b) What is the probability of flipping two heads?
   b) What is the probability of flipping a head and then a tail in that order?
   b) What is the probability of flipping a head and a tail?
   b) What is the probability of flipping two tails?

3. a) Write out the sample space when flipping three coins.
   b) What is the probability of flipping three heads?
   b) What is the probability of flipping two heads and then a tail?
   b) What is the probability of flipping a head, then a tail and then a head?
   b) What is the probability of flipping two heads and a tail?
   b) What is the probability of flipping anything but three tails?

4. a) Write out the sample space when rolling one die.
   b) What is the probability of rolling a three?
   b) What is the probability of rolling a five?
   b) What is the probability of rolling an even number?
   b) What is the probability of rolling an odd number?
   b) What is the probability of rolling a prime number?

5. a) Write out the sample space when rolling two dice?
   b) What is the probability of rolling a ten?
   b) What is the probability of rolling a six?
   b) What is the probability of rolling a prime number?
   b) What is the probability of rolling a number greater than seven?
   b) What is the probability of rolling a number greater than 4 but less than or equal to 10?
   b) What is the probability of rolling a number that is even?

6. A box contains 6 red, 4 green and 4 blacks marbles. What is the probability of drawing the following:
   a) a red marble?, a green marble?, a black marble?, a white marble?, a marble that is either red, green or black?
   a) a red then a green marble?
   a) a red and a green marble?

a) a red, green and black marble in that order (with replacement)? Without replacement?
a) Write out the ways in which a red, a green and a black marble may be drawn from the box replacement)?, without replacement?
a) of drawing a red, a green and a black in any order (with replacement)?, without replacement?
a) of drawing three red marbles?
a) of drawing 2 green marbles?
a) of drawing 4 black marbles?
a) of drawing 3 white marbles?

7. Using a regular bridge deck (52 cards), determine the probability of the following:
   a) drawing a heart?, a diamond?
   a) drawing a black card?
   a) drawing a queen?, a ten?, an ace?, a seven?
   a) drawing a red card on the first card and a black card on the second?
   a) drawing a queen on the first card and a ten on the second card?
   a) drawing a face card on the first card and a two on the second card?
   a) drawing a two, three or five on the first card?
   a) drawing a king or queen on the first card and a four or seven on the second card?

8. If the probability of Norman passing Math 30 is 4/7, of Bill passing Math 30 is 3/5 and of Joan passing math 30 is 7/9, find the probability that:
   a) that all three will pass?
   a) Norman will pass but Bill and Joan will not?
   a) Joan will pass but Norman and Bill will not?
   a) that no one will pass?
   a) Write out the possibilities of only one passing.
   a) that only one will pass?
   a) that two out of the three will pass?

9. If the probability that the snow will melt today is 3/7,
   a) what is the probability that it will not melt today?
   a) what are the odds of the snow melting?
   a) what are the odds of the snow not melting?

10. If the odds of being successful in this class are 6/11
    a) What is the probability of being successful?
    b) What is the probability of not being successful?