Name: _____

Probability using Combination

1)   A student has an exam, the teacher gives 30 questions and 10 of the 30 will be on the final exam. if the student knows how to solve 25 of the 30, what is:

a) the probability he will get perfect

b) the probability he will get at least 8 questions right

2)   This is a form of Keno. There are 80 possible numbers. You select 6 numbers. The State then selects 20 numbers. To win, your 6 numbers must be included in the 20 numbers selected by the State.

1) What is the probability of winning?

2) What is the probability of having exactly 5 of your selected numbers be drawn by the State?

3)   You have 11 people. 6 Girls and 5 Boys. You want to make a 5 person committee.

a) The probability that you will get all Girls?

b) The probability that you will get all Boys?

c) The probability that you will get at least 2 Girls?

4)   Three roses will be selected for a flower vase. The florist has 1 red rose, 1 white rose, 1 yellow rose, 1 orange rose and 1 pink rose from which to choose.
1) How many different three rose selections can be formed from the 5 roses?

2) What is the probability that 3 roses selected at random will contain 1 red rose, 1 white rose, and 1 pink rose?

3) What is the probability that 3 roses selected at random will *not* contain an orange rose?

5) Paul orders a pizza. Chef Carl randomly chooses two different toppings to put on the pizza from the following: pepperoni, onion, sausage, mushrooms, and anchovies. If Paul will not eat pizza with mushrooms, determine the probability that Paul will *not* eat the pizza Chef Carl has made.

6) Sal has a small bag of candy containing three green candies and two red candies. While waiting for the bus, he ate two candies out of the bag, one after another, without looking. What is the probability that both candies were the same color?

7) Alexi's wallet contains four $1 bills, three $5 bills, and one $10 bill. If Alexi randomly removes two bills without replacement, determine whether the probability that the bills will total $15 is greater than the probability that the bills will total $2.

8) A bookshelf contains six mysteries and three biographies. Two books are selected at random without replacement.
   a What is the probability that both books are mysteries?
   b What is the probability that one book is a mystery and the other is a biography?