Name:_____
Date: _____
Block: _____

Algebra 2A
Probability Unit

Answer. (3 points)

1.) What is the formula used to find the number of combinations?

Evaluate the following by showing all work (as shown in class before we used the calculator). (5 points)

2.) $\binom{7}{4}$

3.) ${}_{11}C_7$

Answer each question. Express each probability as a fraction, decimal, and percent. (8 points)

4.) In a bag of M&M's, there are 45 pieces of candy. Of the 45 pieces, 9 are orange. If you reach into a bag and pull out four pieces at random, what is the probability that exactly one of them will be orange?

5.) A poker hand consists of 5 cards. There are 52 cards in a standard deck. What is the probability that the poker hand will consist of exactly three diamonds?

6.) Tina made a coffee run and picked up 10 cups of coffee for her friends. Of the 10 cups, 4 are black with no sugar and 6 are light with sugar. Unfortunately, the cups are not marked. If she chooses two cups at random, what is the probability that they will both be black with no sugar?

7.) In the MegaMillions Lottery, a player selects a group of 5 numbers from 1-56 and then one megaball number from 1-46. What is the probability of matching 4 of the 5 numbers and also matching the megaball number?

8.) In a bag, there are 15 marbles. Five are red, five are blue, and five are green. Without looking, Susie grabs a handful of 3 marbles. What is the probability that there will be one red, one blue, and one green in the handful?

BONUS (+2): What is the probability that all the marbles will be the same color?