Compound Probability - _____
_____

Independent Probability - _____
_____

Dependent Probability - _____
_____

Probabilities with replacement and without replacement.

> _Experiment 1_: Suppose you have 2 bags with the exact same sets of marbles inside. Let's say there are 4 red, 5 blue and 9 yellow marbles in each bag. From the first bag, you reach in and make a selection. You record the color and then drop the marble back into the bag.
>
> _Experiment 2_: You then repeat the experiment a second time. From the second bag you do exactly the same thing EXCEPT, after you select the first marble and record it's color, you do NOT put the marble back into the bag, You then select a second marble, just like the other experiment.

The first experiment involves a process called _____. You put the object back into the bag so that the number of marbles to choose from is the same for both draws.

The second experiment involves a process called _____. You do not put the object back in the bag so that the number of marbles is one less than for the first draw.

Examples:

1. A jar contains 6 red balls, 3 green balls, 5 white balls, and 7 yellow balls. Two balls are chosen from a jar, **with replacement**. What is the probability that both balls chosen are green?

2. A jar contains 6 red balls, 3 green balls, 5 white balls, and 7 yellow balls. Two balls are chosen from a jar, **without replacement.** What is the probability that both balls chosen are green?

3. Two cards are chosen at random from a deck of 52 cards without replacement. What is the portability of choosing two kings?

4. A bag of candy contains 4 lemon flavored sour balls, and 5 lime flavored sour balls. If Tim reaches in, takes one out and eats it, and then 20 minutes later selects another and eats that one as well, what is the probability that they were both lemon flavored candies?

5. Mary has 4 dimes, 3 quarters and 7 nickels in her purse. She reaches in and pulls out a coin, only to have it slip from her fingers and fall back into the purse. She then picks out another coin. What is the probability that she picked a nickel on both tries?

6. A man who goes to work long before sunrise every morning gets dressed in the dark. In his sock drawer he has 6 black and 8 blue socks. What is the probability that his first pick was a black sock, but his second pick was a blue sock?

7. A box contains 5 purple marbles, 3 green marbles and 2 orange marbles. Two consecutive draws are made from the box without replacement of the first draw. Find the probability of each event.

   a. P(orange first, green second) _____

   b. P(both marbles are purple) _____

   c. P(the first marble is purple, and the second is ANY color EXCEPT purple) _____