Name _____ Date _____

Day 5 - Independent and Dependent Events

1. A bag contains 5 red, 3 green, 4 blue, and 8 yellow marbles. Find the probability of randomly selecting a blue marble, and then a red marble if the first marble is replaced.

2. A sock drawer contains 5 pairs of each color socks: white, green and blue. What is the probability of randomly selecting a pair of blue socks and then, without replacing, randomly selecting a pair of white socks?

3. In a standard deck of cards, what is the probability of picking a diamond and then another diamond without replacement?

4. Randy has 4 pennies, 2 nickles, and 3 dimes in his pocket. If he randomly chooses 2 coins, what is the probability that they are both pennies if he doesn't replace the first one?

5. Two students are chosen at random from a class of 30. What is the probability that both you and your friend are chosen?

6. A test includes several multiple choice questions, each with 5 choices. Suppose you don't know the answers for three of these questions, so you guess. What is the probability of getting all three correct?

7. Using the letters in the state ARKANSAS. Find the probability of picking an **S** and then an **A** without replacement.

8. Using the letters in the state ARKANSAS. Find the probability of picking a **K** and then a **N** without replacement.

9. Using the letters in the state ARKANSAS. Find the probability of picking a **R** and then a **S** without replacement.

Paola is playing a word game in which she draws letter tiles from a bag without looking.

- ★ ***The bag contains 7 tiles: 2 As, 3 Es, and 2 Rs.***
- ★ **Find the probability of getting an E first and getting an E second.**
- ★ **In each problem, state whether the events are independent, and find the probabilities.**

_____ 1. Paola takes a tile, then replaces it, and then takes a second tile.

☐ *Independent or Dependent?* _____

_____ 2. Paola takes a tile, does not replace it, and then takes a second tile.

☐ *Independent or Dependent?* _____

The following chart shows favorite subjects of students based on their gender.

	Math	Science	English	History	
Male	46	42	13	25	
Female	12	21	45	36	

_____ 1. What is the probability that a randomly chosen student likes history the most?

_____ 2. What is the probability that a randomly chosen student is a female?

_____ 3. What is the probability that a randomly chosen student is a male or likes Math?

_____ 4. What is the probability that a randomly chosen student both likes science and is a male?

_____ 5. What is the probability that a randomly chosen student likes history given that they are a female?

_____ 6. Does the probability of liking a subject depend on whether the students are male or female? Use calculations (use at least 3 examples).