

Name: _____ Date: _____

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 green marble, and then a yellow 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, replacing it, and then 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 nickels, and 3 dimes in his pocket. If he randomly chooses 2 coins, what is the probability that they are both dimes 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.

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Determining if 2 Events are Independent

Check the following events and determine if they are independent.

$$P(A \cap B) = P(A) \bullet P(B)$$

10. $P(A) = 0.45$ $P(B) = 0.30$ $P(A \cap B) = 0.75$

Conclusion: _____

Check your calculations here.
Show ALL work.

11. $P(A) = 0.12$ $P(B) = 0.56$ $P(A \cap B) = 0.0672$

Conclusion: _____

Check your calculations here.
Show ALL work.

12. $P(A) = \frac{4}{5}$ $P(B) = \frac{3}{8}$ $P(A \cap B) = \frac{7}{40}$

Conclusion: _____

Check your calculations here.
Show ALL work.

13. $P(A) = \frac{7}{9}$ $P(B) = \frac{3}{4}$ $P(A \cap B) = \frac{7}{12}$

Conclusion: _____

Check your calculations here.
Show ALL work.