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Probability of Dependent Events worksheet

1. Determine which of the following are examples of dependent events.

a. Selecting a marble from a container and selecting a jack from a deck of cards.

b. Rolling a number less than 4 on a die and rolling a number that is even on the same roll.

c. Choosing a jack from a deck of cards and choosing another jack, without replacement.

2. Determine which of the following are examples of dependent events.

a. Selecting a book from the library and selecting a book that is a mystery novel.

b. Rolling a 2 on a die and flipping a coin to get tails.

c. Being lunchtime and eating a sandwich.

3. Thomas bought a bag of jelly beans that contained 10 red jelly beans, 15 blue jelly beans, and 12 green jelly beans. What is the probability of Thomas reaching into the bag and pulling out a blue or green jelly bean and then reaching in again and pulling out a red jelly bean? Assume that the first jelly bean is not replaced.

4. For question 3, what if the order were reversed? In other words, what is the probability of Thomas reaching into the bag and pulling out a red jelly bean and then reaching in again and pulling out a blue or green jelly bean without replacement?

5. What is the probability of drawing 2 face cards one after the other from a standard deck of cards without replacement?

6. There are 3 quarters, 7 dimes, 13 nickels, and 27 pennies in Jonah's piggy bank. If Jonah chooses 2 of the coins at random one after the other, what is the probability that the first coin chosen is a nickel and the second coin chosen is a quarter? Assume that the first coin is not replaced.

7. For question 6, what is the probability that neither of the 2 coins that Jonah chooses are dimes? Assume that the first coin is not replaced.

8. Jenny bought a half-dozen doughnuts, and she plans to randomly select 1 doughnut each morning and eat it for breakfast until all the doughnuts are gone. If there are 3 glazed, 1 jelly, and 2 plain doughnuts, what is the probability that the last doughnut Jenny eats is a jelly doughnut?

9. If the numbers 1 through 20 are each written on a slip of paper, and the slips of paper are placed in a hat, what is the probability that 2 slips of paper randomly chosen one after the other both have a prime number written on them? Assume that the first slip of paper is not replaced.

10. Steve will draw 2 cards one after the other from a standard deck of cards without replacement. What is the probability that his 2 cards will consist of a heart and a diamond?