Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_ Block: \_\_\_\_

**A*nswer the following questions. Show work! Write each probability as a fraction, a decimal, and a percent***

1) Identify whether each event is a dependent or an independent event.

a) Rolling a number cube twice \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) Choosing a card and then flipping a coin \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c) Choosing a card, not replacing it and choosing another card \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d) Choosing a red candy and a blue candy without replacement \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e) Choosing a number and then another number when the numbers cannot be repeated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) Use the following to answer questions a – d. These events occur with replacement of the candy. Express your answer as a fraction, a decimal, and a percent.

Paul opened a bag of candy and found the following colors of candy: 6 red, 5 blue, 12 green, 9 yellow, and 13 orange.

* 1. P(red and blue) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. P(orange and blue) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  3. P(2 not yellow) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  4. P(yellow, blue, and red) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) Use the following to answer questions a – d. These events occur without replacement of the candy. Express your answer as a fraction, a decimal, and a percent.

Paul opened a bag of candy and found the following colors of candy: 6 red, 5 blue, 12 green, 9 yellow, and 13 orange.

a. P(red and not blue) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. P(yellow and orange) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. P(green and not green) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. P(orange and orange) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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4) Sarah will win a game if she draws a red card from a standard deck of cards and then flips a heads on a coin. Write your answer as a fraction, a decimal, and a percent.

What is the probability of winning the game? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the probability of losing the game? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5) When using a standard deck of cards, what is the probability of choosing an Ace and then a face card if the first card is replace?

What is the probability of choosing an ACE and then a face card if the first card is not replaced?

Which one is more likely? Explain.

6) Sandy has cards that are numbered 0 – 10.

a) If she chooses a number card at random, what is the probability that she will choose a prime number, set it to the side and then choose an odd number?

b) If she chooses a number card at random, what is the probability that she will choose a perfect square, put it back, and then choose an even number?

7) Nicole has tiles that are the same size and shape.

\* The probability of selecting a red tile is 25%

\* The probability of selecting a green tile is 40%.

a. What is the probability that Nicole will randomly select a tile that is green, replace it, and then select a tile that is **not** red?

b. Plot the value of this probability on a number line.

0 ½ 1