Name: _____ Block: _____ Date: _____

Probability
STUDY GUIDE

I CAN CALCULATE THE PROBABILITY OF SIMPLE EVENTS AND ITS COMPLEMENT.

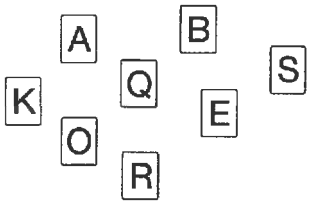
Calculate the probability of the simple event and its complement. Simplify.

1. Rolling a 6-sided die.

a.) P (2) = $\frac{1}{6}$ **b.)** P (odd) = **c.)** P (not 4) =

2. Picking a card, at random, from the deck to the the right.

a.) P (vowel) = **b.)** P (q or b) =



1a. $\frac{1}{6}$

1b. $\frac{3}{6} = \frac{1}{2}$

1c. $\frac{5}{6}$

2a. $\frac{3}{8}$

2b. $\frac{2}{8} = \frac{1}{4}$

I CAN FIND THE THEORETICAL PROBABILITY OF AN EVENT.

A spinner with four equal-size sections marked M, A, T, and H is spun 100 times.

3. What is the theoretical probability of landing on A?

3. $\frac{25}{100} = \frac{1}{4}$

A cooler has 14 iced teas and 28 water bottles in it.

4. What is the theoretical probability of randomly picking an iced tea?

4. $\frac{14}{42} = \frac{1}{3}$

I CAN FIND THE EXPERIMENTAL PROBABILITY OF AN EVENT.

A spinner with four equal-size sections marked M, A, T, and H is spun 100 times. The results are shown below.

Section	Frequency
M	21
A	26
T	25
H	28

5. What is the experimental probability of landing on a vowel?

5. $\frac{26}{100} = \frac{13}{50}$

I CAN USE THEORETICAL AND EXPERIMENTAL PROBABILITY TO MAKE PREDICTIONS ABOUT FUTURE EVENTS.

Answer the question using the experimental probability from the following problem.

A spinner with four equal-size sections marked M, A, T, and H is spun 100 times. The results are shown below.

Section	Frequency
M	21
A	26
T	25
H	28

6. Using the experimental probability, what is the probability of landing on A if the same spinner was spun 283 times?

$100x = 26(283)$

$x = 73.58$

$\frac{26}{100} = \frac{x}{283}$

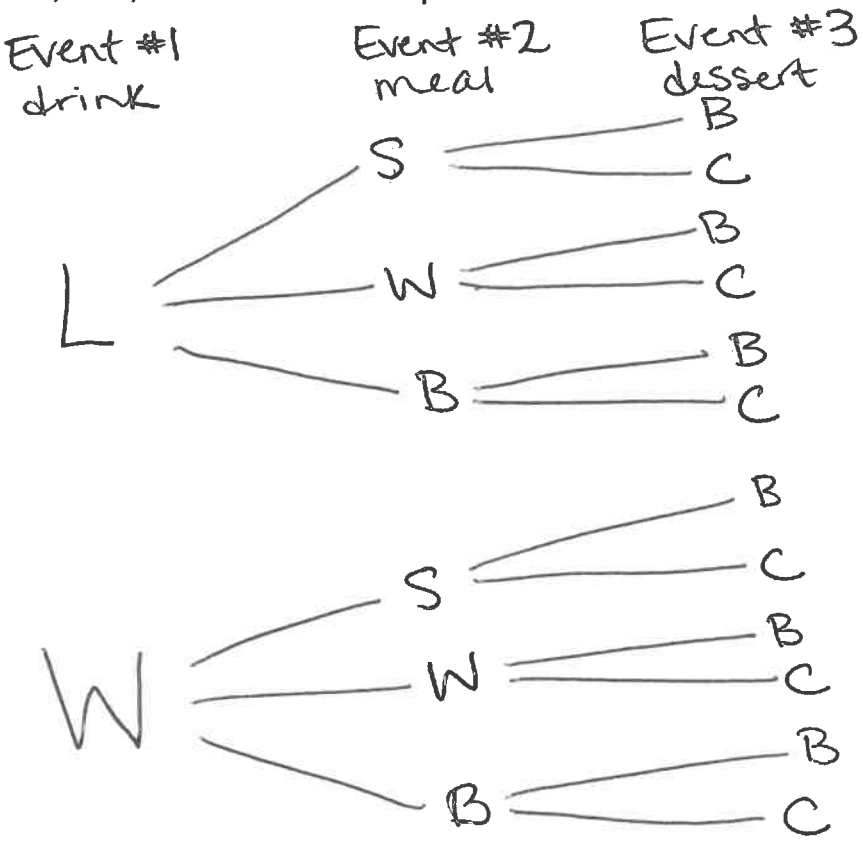
6. 74 times or $\frac{74}{283}$

I CAN FIND THE PROBABILITY OF A COMPOUND EVENT.

Answer the question below. Show all your work!

7. Alexis is going on a picnic and has two drink options (lemonade or water), three meal options (sandwich, wrap, or burger), and two dessert options (brownie or cookie). Create a tree, table, or list to show all the possible outcomes:

7. Complete in open space ←



LSB
LSC
LWB
LWC
LBB
LBC

WSB
WSC
WWB
WWC
WBB
WBC

8. What is the probability that the meal she chooses includes a burger?

8. $\frac{4}{12} = \frac{1}{3}$

I CAN FIND THE NUMBER OF OUTCOMES POSSIBLE IN A SITUATION.

Answer the following questions using the Fundamental Counting Principle. Show all your work!

9. Find the number of different outfits that can be made from 5 sweaters, 3 pants, and 3 pairs of socks.

$5 \times 3 \times 3 =$

9. 45

10. Find the number of different bagel and cream cheese combinations if Mr. Bagel has 14 different kinds of bagels and 8 different kinds of cream cheese.

$14 \times 8 =$

10. 112

11. A restaurant offers four sizes of pizza, two types of crust, and eight toppings. How many possible combinations of pizza with one topping are there?

$4 \times 2 \times 8 =$

11. 64

I CAN CALCULATE THE PROBABILITY OF INDEPENDENT EVENTS.

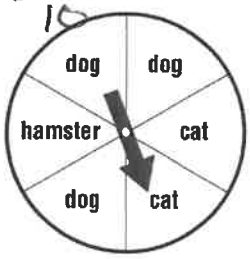
Answer the following question. Show all your work!

12. A number cube labeled one through six is rolled and a letter is randomly selected from the word MUSIC. Find *P*(6 and consonant).

$\frac{1}{6} \cdot \frac{3}{5} = \frac{3}{30} = \frac{1}{10}$

12. $\frac{1}{10}$

13. If you spin the spinner twice, what is the probability of spinning dog then hamster?



$P(\text{dog, hamster}) = \frac{3}{6} \cdot \frac{1}{6} = \frac{3}{36} = \frac{1}{12}$

13. $\frac{1}{12}$

I CAN CALCULATE THE PROBABILITY OF DEPENDENT EVENTS.

Answer the following question. Show all your work!

14. A jar contains 5 blue marbles, 6 yellow marbles, and 4 green marbles. What is the probability of randomly choosing a yellow marble, not replacing it, and then choosing a blue marble?

$P(\text{yellow, blue}) = \frac{6}{15} \cdot \frac{5}{14} = \frac{1}{7}$

14. $\frac{1}{7}$

15. Kevin had 6 nickels and 4 dimes in his pocket. If he took out one coin and then a second coin (without replacing the first coin)...

a. *P* (nickel, nickel) = $\frac{6}{10} \cdot \frac{5}{9} = \frac{1}{3}$

15a. $\frac{1}{3}$

b. What is the probability that the first coin was a nickel and the second a dime?

$P(\text{nickel, dime}) \quad \frac{6}{10} \cdot \frac{4}{9} = \frac{4}{15}$

15b. $\frac{4}{15}$