



LESSON 10.1b  
Rolling, Rolling Rolling...

7.SP.5

Objective Defining and Representing Probability

Warm-Up



Convert each fraction to a decimal and a percent.

1.  $\frac{3}{4}$

2.  $\frac{9}{100}$

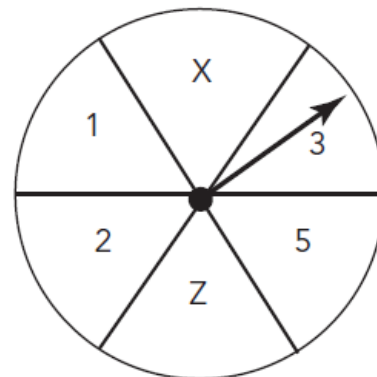
3.  $\frac{3}{8}$

4.  $\frac{1}{5}$



Consider the spinner shown. All sections of the spinner are the same size. An experiment consists of spinning the spinner one time.

1. How many possible outcomes are there in the experiment?  
How did you determine your answer?



2. List the sample space for the experiment.

3. Determine the probability that the spinner lands on a letter.

a. Describe the event and the possible outcomes of the event.

b. Calculate  $P(\text{letter})$ .

c. Describe the complement of this event and the possible outcomes of the complement.

d. Calculate  $P(\text{not a letter})$ .

4. Determine the probability that the spinner lands on an odd number.

a. Describe the event and the possible outcomes of the event.

b. Calculate  $P(\text{odd number})$ .

c. Describe the complement of this event and the possible outcomes of the complement.

d. Calculate  $P(\text{not an odd number})$ .

5. Determine the probability that the spinner lands on a vowel.

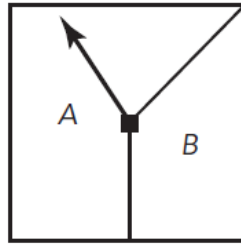
a. Describe the event and the possible outcomes of the event.

b. Calculate  $P(\text{vowel})$ .

c. Describe the complement of this event and the possible outcomes of the complement.

d. Calculate  $P(\text{not a vowel})$ .

The Spinning Square Game is a game at the Kid Zone. The game consists of spinning the square spinner. If a player takes a spin and the spinner lands on B, the player wins a prize. If the spinner lands on A, the player does not receive a prize.



6. Predict each probability.

a.  $P(A) =$

b.  $P(B) =$

7. Britney predicts the probability that the spinner will land on A to be  $\frac{5}{8}$ . Is Britney correct? Explain your reasoning.



1. What is the greatest possible probability in any experiment?  
Explain your reasoning.

2. What is the least possible probability in any experiment?  
Explain your reasoning.

3. What is the probability of an event that is just as likely to occur as not occur? Explain your reasoning.

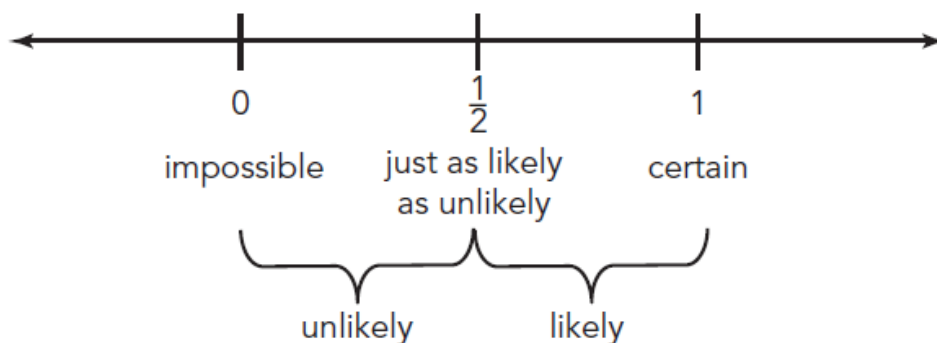
The probability of an event occurring is a number between 0 and 1. If the event is certain to happen, then the probability is 1. If an event is impossible to happen, then the probability is 0. If an event is just as likely to happen as not happen, then the probability is 0.5, or  $\frac{2}{7}$ .

Copy and complete the chart representing the different probabilities.

4.

	Fraction	Decimal	Percent
P(certain event)			
P(event that is just as likely as unlikely to occur)			
P(impossible event)			

The number line shown represents the probabilities, from 0 to 1, of any event occurring.



5. Estimate the probability of each event occurring. Then, place the letter corresponding to the estimated probability of the event on the number line.

	Fraction	Decimal	Percent
a. The next baby born at your local hospital will be a boy.	_____	_____	_____
b. Your neighbors will get a pet dinosaur.	_____	_____	_____
c. You will have a test in one of your classes this month.	_____	_____	_____
d. A seventh grader is more than 6 feet tall.	_____	_____	_____



Suppose there are 2 blue, 3 green, and 5 yellow marbles in a bag.

One marble will be drawn from the bag.

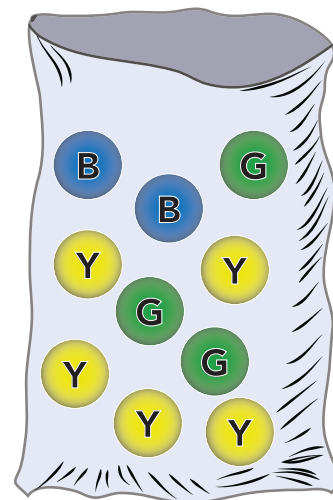
1. List the sample space for the experiment.

2. Calculate each probability.

a.  $P(B) =$

b.  $P(G) =$

c.  $P(Y) =$



When the probabilities of all the outcomes of an experiment are equal, then the outcomes are called equally likely.

3. Are the outcomes in the marble experiment equally likely? Explain your reasoning.

4. Determine the sum of all the probabilities.

$P(B) + P(G) + P(Y) =$  \_\_\_\_\_

5. Determine the sum of the probabilities for all the outcomes of the first spinner in Explore 3.

$P(1) + P(2) + P(3) + P(5) + P(X) + P(Z) =$

6. Do you think the sum of the probabilities for all outcomes of any experiment will always be 1? Explain your reasoning.

**Show You  
KNOW**

Absolutely/Never

1. Can the sum of the probabilities for all outcomes of some experiment ever be greater than 1? Explain your reasoning.
2. Write an event that has a probability of 1.
3. Write an event that has a probability of 0.
4. If  $P(\text{not event } X) = 1$ , what is  $P(\text{event } X)$ ?
5. If  $P(\text{not event } Y) = 0$ , what is  $P(\text{event } Y)$ ?





## LESSON 10.1b Rolling, Rolling Rolling...



Objective Defining and Representing Probability

### Practice

1. Rasheed is getting dressed in the dark. He reaches into his sock drawer to get a pair of socks. He knows that his sock drawer contains six pairs of socks, and each pair is a different color. Each pair of socks is folded together. The pairs of socks in the drawer are red, brown, green, white, black, and blue.

a. How many possible outcomes are there in the experiment?

b. What are the possible outcomes of the experiment?

c. List the sample space for the experiment.

d. Calculate  $P(\text{blue})$ .

e. Calculate  $P(\text{green})$ .

f. Calculate  $P(\text{not red})$ .

g. Calculate  $P(\text{not purple})$

