

7th Grade  
May 17, 2021

Today we will:

- Watch video
- Take notes in class
- Begin HW

HOMEWORK:

Complete Skills WS

ALEKS time and topics  
due TONIGHT at 11:59PM



In-Class Notes--Probability

Probability compares the number of favorable outcomes to the number of total outcomes. It is a ratio.

$$P(\text{event}) = \frac{\# \text{ favorable outcomes}}{\# \text{ total outcomes}} \rightarrow \text{simplified}$$

\* or a percent

Example:  $P(\text{blue}) = \frac{\text{number of blue marbles}}{\text{number of marbles in all}}$

Two events are complementary if one or the other must happen but not both.

Examples of complementary events:  
Cards: Ace or not an ace  
Spinner: 2 or not a 2

The Sum of the probability of an event and its complement is 1 or 100%.

Fill in the percent probabilities for the following likelihoods:

Certain: 100%

Likely: 50-100%

Equally likely: 50%

Unlikely: 0-50%

Impossible: 0%

## Probability Problem Solving

Below are six probability problems. Work by yourself or with a partner to solve the problems, but be sure to fill out your own sheet. Write your answer as a ratio, a decimal, and a percentage. Be prepared to discuss your responses in class.

1. Your sock drawer is a mess. There are 12 black socks and 6 red socks mixed together. What are the chances that, without looking, the one sock you pick out of the drawer is a red sock? What are the chances of the sock being a black one?

$$P(\text{red}) = \frac{6}{18} \div \frac{6}{6} = \frac{1}{3} \approx 0.33... \approx 33\%$$

$$P(\text{black}) = \frac{12}{18} = \frac{2}{3} = 0.66... \approx 66\%$$

2. You are rolling a regular die. What is the probability of rolling a 3?

$$P(3) = \frac{1}{6} = 0.166... \approx 16.6\% \text{ or } 17\%$$

3. If you are rolling a regular die, what is the probability of rolling an even number?

$$P(\text{even}) = \frac{3}{6} = \frac{1}{2} = 50\%$$

4. You are randomly choosing a card from a regular deck of 52 cards. What is the probability that the card you pick will be a king?

$$P(\text{king}) = \frac{4}{52} \div \frac{4}{4} = \frac{1}{13} \approx 0.0769... \approx 8\%$$

5. You are visiting a kennel that has three German shepherds, four Labrador retrievers, six Chihuahuas, five poodles, and four West Highland terriers. When you arrive, the dogs are taking a walk. What is the probability of seeing a German shepherd first?

$$P(\text{German Shepherd}) = \frac{3}{22} \approx 0.136... \approx 14\%$$

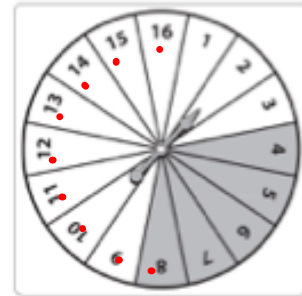




## Lesson 6 Skills Practice

### Probability of Simple Events

A spinner like the one shown is used in a game. Determine the probability of each outcome if the spinner is equally likely to land on each section. Express each probability as a fraction and as a percent. Then describe the likelihood of the event. Write *impossible*, *unlikely*, *equally likely*, *likely*, or *certain*.



1.  $P(10)$

$\frac{1}{16} = 0.0625 = 6.25\%$   
unlikely

2.  $P(\text{odd})$

0% 0-50% 50% 50-100% 100%

3.  $P(\text{greater than } 7)$

$\frac{9}{16} \approx 0.5625 = 56.25\%$   
likely

4.  $P(\text{prime})$

2, 3, 5, 7, 11, 13  
 $\frac{6}{16} = 0.375 = 37.5\%$   
unlikely

6.  $P(\text{less than } 5)$

5.  $P(1 \text{ or } 2)$

7.  $P(\text{shaded})$

8.  $P(\text{not shaded})$

A bag contains 6 red, 3 blue, 15 green, and 6 yellow marbles. A marble is selected without looking. Determine the probability of each outcome if it is equally likely to select each marble. Express each probability as a fraction and as a percent. Then describe the likelihood of the event. Write *impossible*, *unlikely*, *equally likely*, *likely*, or *certain*.

9.  $P(\text{blue})$

10.  $P(\text{red})$

11.  $P(\text{green})$

12.  $P(\text{not yellow})$

13.  $P(\text{not green})$

14.  $P(\text{black})$

15.  $P(\text{not blue})$

16.  $P(\text{not red})$

17.  $P(\text{red, blue, green, or yellow})$

A bag contains some tiles. Each tile has the number 1, 10, 100, or 1000 written on it. The table shows the frequency of each number in the bag. You choose a tile at random. Determine the probability of each outcome if it is equally likely to select each tile. Express each probability as a fraction and as a percent. Then describe the likelihood of the event. Write *impossible*, *unlikely*, *equally likely*, *likely*, or *certain*.

Number	1	10	100	1000
Frequency	22	16	7	5

18.  $P(10)$

19.  $P(\text{not } 100)$

20.  $P(1000)$

21.  $P(\text{even})$

22.  $P(\text{not } 1000)$

23.  $P(\text{not even})$