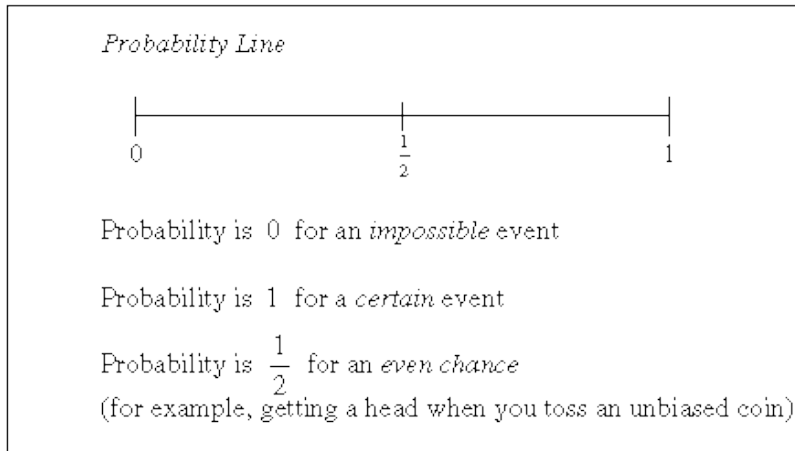


## Probability Guided Notes

Probability is \_\_\_\_\_.

All probabilities range from \_\_\_ to \_\_\_. Probabilities can be expressed as a \_\_\_\_\_, a \_\_\_\_\_, or a \_\_\_\_\_.



Events can be described as impossible, unlikely, having an even chance of happening, likely, or certain. How likely do you think the following events are to occur?

1. Thomas Jefferson, the third President of the United States, will visit the College of William and Mary tomorrow.

0	-	-	-	1
Impossible	Unlikely	Even Chance	Likely	Certain

2. You will ride the bus home from school today.

0	-	-	-	1
Impossible	Unlikely	Even Chance	Likely	Certain

3. School will be cancelled tomorrow due to bad weather.

0	-	-	-	1
Impossible	Unlikely	Even Chance	Likely	Certain

4. If you roll a standard die, it will show a number less than 7.

0	-	-	-	1
Impossible	Unlikely	Even Chance	Likely	Certain

5. If you flip a fair coin, you will get tails.

0	-	-	-	1
Impossible	Unlikely	Even Chance	Likely	Certain

Probability is a ratio. We read  $P(\text{event})$  as the "probability of an event." **The parentheses do not mean an operation, such as multiplication!!!**

\_\_\_\_\_

A favorable outcome is the outcome(s) \_\_\_\_\_.

In order to find the theoretical probability, we \_\_\_\_\_ the number of favorable outcomes by the total number of possible outcomes.

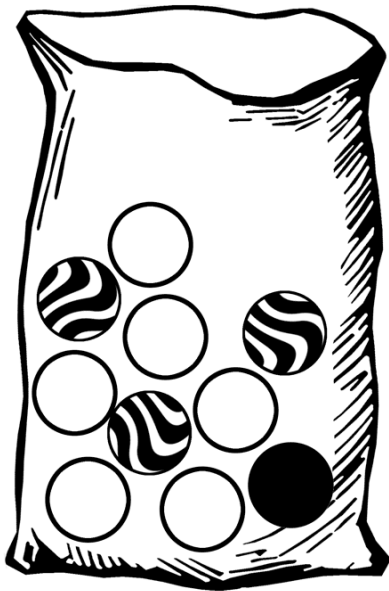


If you flip a coin, there are \_\_\_\_\_ possible outcomes. They are \_\_\_\_\_ or \_\_\_\_\_.

What is the probability of the coin landing on tails? \_\_\_\_\_

What is the probability of the coin NOT landing on tails? \_\_\_\_\_

The complement is the event not happening. It can be determined by counting the non favorable outcomes or by the following equation. We can write this as  $P(\bar{A})$  or  $P(\text{not } A)$



Refer to the bag of marbles to answer the following questions. Express your answer as a fraction and a decimal.

What are the possible outcomes? \_\_\_\_\_,  
\_\_\_\_\_, or \_\_\_\_\_.

What is the probability of pulling a ...

Striped marble \_\_\_\_\_

Black marble \_\_\_\_\_

Not a white marble \_\_\_\_\_

Polka dot marble \_\_\_\_\_



Probability is a ratio. We read  $P(\text{event})$  as the "probability of an event." **The parentheses do not mean an operation, such as multiplication!!!**

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A favorable outcome is the outcome(s) **we are looking for** \_\_\_\_\_. In order to find the theoretical probability, we **divide** the number of favorable outcomes by the total number of possible outcomes.

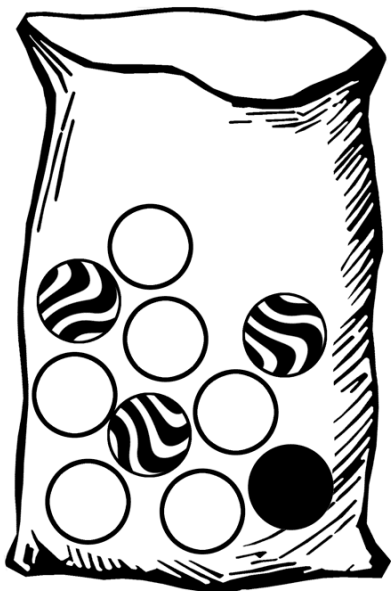


If you flip a coin, there are **2** possible outcomes. They are **Heads** or **Tails**.

What is the probability of the coin landing on tails?  **$1/2$**

What is the probability of the coin **NOT** landing on tails?  **$1/2$**

The complement is the event not happening. It can be determined by counting the non favorable outcomes or by the following equation. We can write this as  $P(\bar{A})$  or  $P(\text{not } A)$



Refer to the bag of marbles to answer the following questions. Express your answer as a fraction and a decimal.

What are the possible outcomes? **black, white, or striped.**

What is the probability of pulling a ...

Striped marble  **$3/10$**  \_\_\_\_\_

Black marble  **$1/10$**  \_\_\_\_\_

Not a white marble  **$4/10 = 2/5$**  \_\_\_\_\_

Polka dot marble **0** \_\_\_\_\_