

Experiment – _____

Outcome - _____

Favorable Outcome - _____

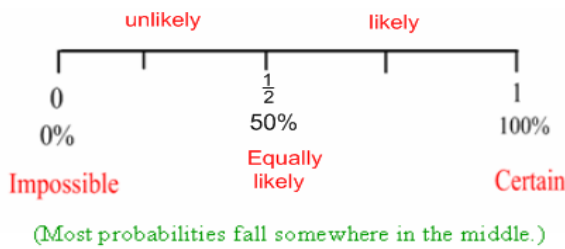
You roll a die. (This is the experiment)

a.) What are the possible outcomes?

b.) What are the favorable outcomes of rolling an even number?

Probability – _____

Probabilities can range from **0 to 1 (fractions)**
or from **0% to 100% (percents)**.



Probability of an event:

$P(E) =$ _____

Example 1: A bag contains marbles: 4 white, 3 red and 1 blue. Find the following probabilities.

P(red) =

P(white)=

P(not blue)=

P(red or blue)=

P(purple)=

P(red, white or blue)=

Example 2: You roll a die.

What is the probability of rolling an odd number?

What is the probability of rolling a number greater than 2?

What is the probability of rolling a 7?



Two Types of Probability:

<p>Theoretical: tells what is supposed to happen “in theory”</p>	<p>Experimental: shows the probability based on data collected (or an experiment that you actually performed)</p> <p><i>It will come very close to theoretical probability the more times you do the experiment (millions of times)</i></p>
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Example 1: What is the **theoretical** probability of flipping a coin and landing on tails? _____

What is the **experimental** probability of flipping a coin **10 times** and landing on tails? _____

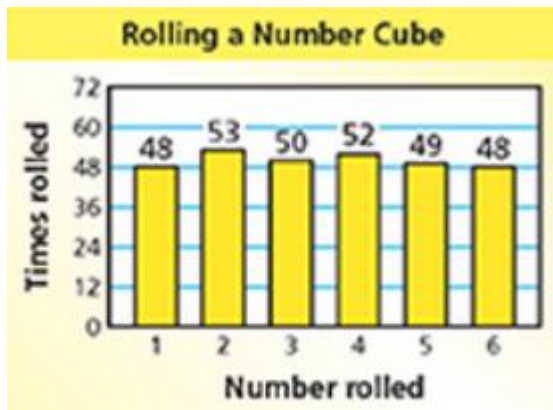
Example 2: What is the **theoretical** probability of rolling a number cube and getting a 5? _____

What is the **experimental** probability of rolling a number cube **6 times** and getting a 5? _____

Example 3:

a.) In a candy store, you have three options of payment: cash, debit card, or credit card. What is the *theoretical* probability that the next customer will pay with cash?

b.) In the candy store, last week 54 customers paid with cash, 42 paid with a debit card, and 153 paid with a credit card. What is the *experimental* probability that the next customer will pay with cash?



Example 4: The bar graph shows the results of rolling a number cube 300 times.

a. What is the experimental probability of rolling an odd number?

b. How does the experimental probability compare with the theoretical probability of rolling an odd number?

You spin the spinner shown.

1. How many possible results are there?



2. Of the possible results, in how many ways can you spin an even number?

Using the picture below, find the probability of each event.



3. Choosing a 6

4. Choosing an odd number

5. Choosing a number greater than 5

6. Choosing an odd number less than 5.

7. Choosing a number less than 3.

8. Choosing a number divisible by 3.

The bar graph shows the results of spinning the spinner 200 times. Compare the theoretical and experimental probabilities of each event.

9. Spinning a 4.

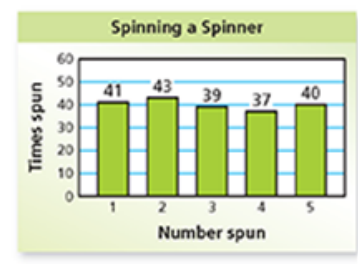
Theoretical:

Experimental:

10. Spinning a 3.

Theoretical:

Experimental:



11. Spinning number > 4 .

Theoretical:

Experimental:



12. Should you use theoretical or experimental probability to predict the number of times you will spin a 3 in 10,000 spins?