

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Probability**

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**Probability is:** \_\_\_\_\_

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$$P(A) = \frac{\text{The number of ways an event can occur}}{\text{Total number of possible outcomes}}$$

**Example #1:** You roll a six-sided die whose sides are numbered from 1 through 6.

- What is the probability of rolling an ODD number?
- What is the probability of rolling a number that starts with the letter "t"?

**Practice #2:** A jar contains 6 red, 5 green, 8 blue, and 3 yellow marbles.

- What is the probability of pulling out a red marble?
- What is the probability of pulling out a green marble?
- What is the probability of pulling out a blue marble?
- What is the probability of pulling out a yellow marble?
- What is the probability of pulling out an orange marble?

**Practice #3** A deck of cards contains 52 cards made up of 4 different suits – Hearts, Diamonds, Spades, and Clubs.

- What is the probability of drawing a Heart?
  - What is the probability of drawing a 3?
  - What is the probability of drawing a face card?
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## Frequency Tables

A \_\_\_\_\_ a table listing two categorical variables whose values have been paired.

There are three types of relative frequencies that can be found using the table:

1. \_\_\_\_\_ are in the body (middle) of the table.
2. \_\_\_\_\_ are in the “total” column and in the “total” row.
3. \_\_\_\_\_ is a ratio of the joint frequency over the marginal frequency.

\_\_\_\_\_ shows the relationship between a piece of data and the grand total.

**Example: Using the table below, answer the following questions.**

	Basketball	Kickball	Volleyball	Total
Boys	50	30	12	92
Girls	18	32	58	108
Total	68	62	70	200

- a) What is the joint relative frequency of a girl that likes kickball?
- b) What is the joint relative frequency of a boy that likes volleyball?
- c) What is the marginal relative frequency of people that like basketball?
- d) What is the marginal relative frequency of someone who is boy?
- e) Out of the people who like volleyball, what is the conditional relative frequency of that person being a girl?

**Try It: Using the table below, answer the following questions.**

	<i>One or More Clubs</i>	<i>No Clubs</i>	<i>Total</i>
9 <sup>th</sup> Grade	6	14	20
12 <sup>th</sup> Grade	24	6	30
Total	30	20	50

- a) What is the relative frequency of choosing a 9<sup>th</sup> grader?
- b) What is the relative frequency of choosing a 12<sup>th</sup> grader involved with no clubs?
- c) Given that a student is a 9<sup>th</sup> grader, what is the relative frequency that they are involved with one or more clubs?