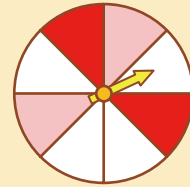


## Computing Probabilities

Before we get into the concept of probabilities, we will look at the following example of a spinner.

What is the probability of the pointer landing on a red area?



The calculation involves a few definitions:

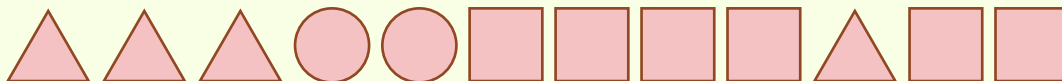
Definition	Example
An <b>experiment</b> is a situation involving chance or probability that leads to results called outcomes.	In the example above, the <b>experiment</b> is spinning the spinner.
An <b>outcome</b> is the result of a single trial of an experiment.	In the example above, the possible <b>outcomes</b> are landing on the red, pink, and white.
An <b>event</b> is the outcome(s) of an experiment.	In the example above, the <b>event</b> is to land on the red.
<b>Probability</b> is the measure of the likelihood of an event.	In the example above, the <b>probability</b> of the pointer landing on red is? <a href="#">See below for explanation.</a>

**Probability** of an event equals the number of the favorable outcomes divided by the total number of possible outcomes.

- In the example above, there are 9 sections on the compass and that is the total number of possible sections that the pointer could land on.
- We also observe that each section is of equal size. Therefore each section will have an equal chance of being landed on by the pointer.
- There are 2 red sections, so the probability of the pointer landing on a red section is 2 out of 9, or  $\frac{2}{9}$ .

### Another Example:

The shapes pictured below are placed in a bag and one is drawn randomly. What is the probability of drawing a triangle from the bag? Express the probability as a decimal. Round to the nearest hundredth if necessary.



Explanation

There are 12 figures, therefore the possible outcomes are **12**. We also know that there are **4** triangles, and since it is randomly chosen, each figure has an equal chance of being chosen. The probability of picking up a triangle is  $\frac{4}{12}$ .

Convert that to a decimal is:  $\frac{4}{12} = \frac{1}{3} \approx 0.33$

Therefore the probability of drawing a triangle is **0.33**.