



Probability

Graham Middle School Math Olympiad Team



$$\sqrt{x} = 3, 14$$
$$3 \times 3 = 9$$



PROBABILITY

You are throwing fair six-sided dice. What is the chance that your number of dots would be 5?

There are 6 possible outcomes and since they have equal chances to happen, that means that about once per every 6 throws you will get 5. So your chances to get 5 dots would be $\frac{1}{6}$. We say that *probability* of getting 5 dots is $\frac{1}{6}$.

A **probability** is a number that represents the likelihood of an uncertain event.

$$P = \frac{(\text{number of successful attempts})}{(\text{total number of events})}$$

Probabilities are always between 0 and 1, inclusive. A probability 0 means that something is impossible. A probability 1 means that something always happens.

ADDITION RULE FOR PROBABILITY

MULTIPLICATION RULE FOR PROBABILITY

USING THE NEGATIVE CASE

THE BIRTHDAY PROBLEM