

Probability

- Probability { $P(A)$ } is used to make predictions that an event will happen or not happen.

- $P(A) = \frac{\text{number of successful outcomes}}{\text{total number of outcomes}}$

- Simple Probability: When there is one event:



- What is the probability of rolling a 1 on the first throw? There is one 1 on the dice and 6 different sides.

- $P(A) = \frac{\text{number of successful outcomes } \underline{1 \text{ One}}}{\text{total number of outcomes } \underline{6 \text{ six sides}}}$ or $\frac{1}{6}$

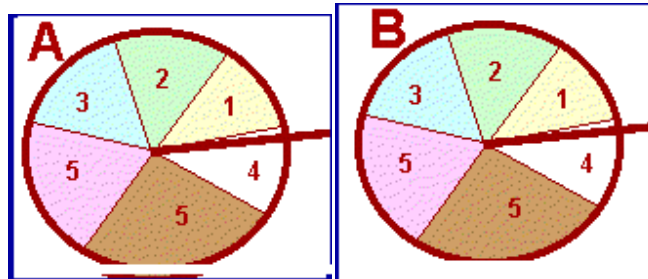
- Example

- What is the probability of selecting one blue marble from a jar that has 6 red, 6 green, and 3 blue marbles?

- $P(A) = \frac{\text{number of successful outcomes } \underline{3 \text{ blue}}}{\text{total number of outcomes } \underline{15}}$ reduce $\frac{1}{5}$ or 20%
- $\frac{1}{5}$ total 5

Compound Probability : has 2 or more independent events.

- To find the probability, multiply the independent probabilities together.



- **Example**

- What is the percent of probability for both A and B spinners not to land on a 1.
 - Spinner A would be $\frac{5}{6}$ (all other possibilities other than a 1)
 - Spinner B would be $\frac{5}{6}$
 - Multiply the 2 together. $\frac{5 \times 5 = 25}{6 \times 6 = 36}$
 - divide 25 by 36 = $.694444 = 69.4\%$