

Probability - The likelihood that a specific event(s) will occur

$$P(E) = \frac{\text{\# of specific events}}{\text{Total \# of possible outcomes}}$$

Simple Probability

-The probability of a single event occurring

Compound Probability

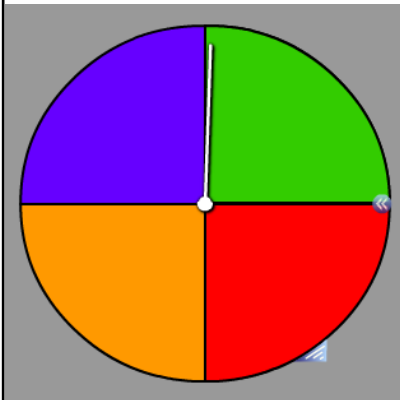
-The probability of multiple events occurring

Sample Space

- A drawing or diagram that represents ALL possible outcomes
-- helps one to visualize the probability relationships

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Spinner



$$P(\text{Red}) = \frac{1}{4} \begin{array}{l} \text{1 qtr is Red} \\ \text{4 qtrs total} \end{array}$$

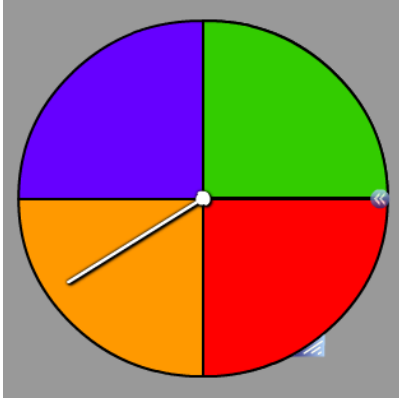
$$P(\text{Red OR Blue}) = \frac{2}{4} = \frac{1}{2}$$

$$P(\text{NOT Red}) = \frac{3}{4}$$

Complements

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$$P(B, B)$$

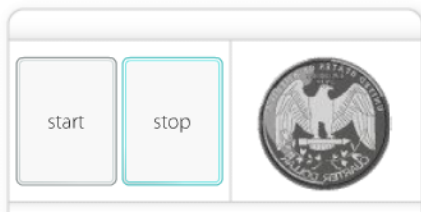
$$P(B)$$

$$P(B)$$

$$\frac{1}{4} \neq \frac{1}{4} = \frac{1}{16}$$

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Coin

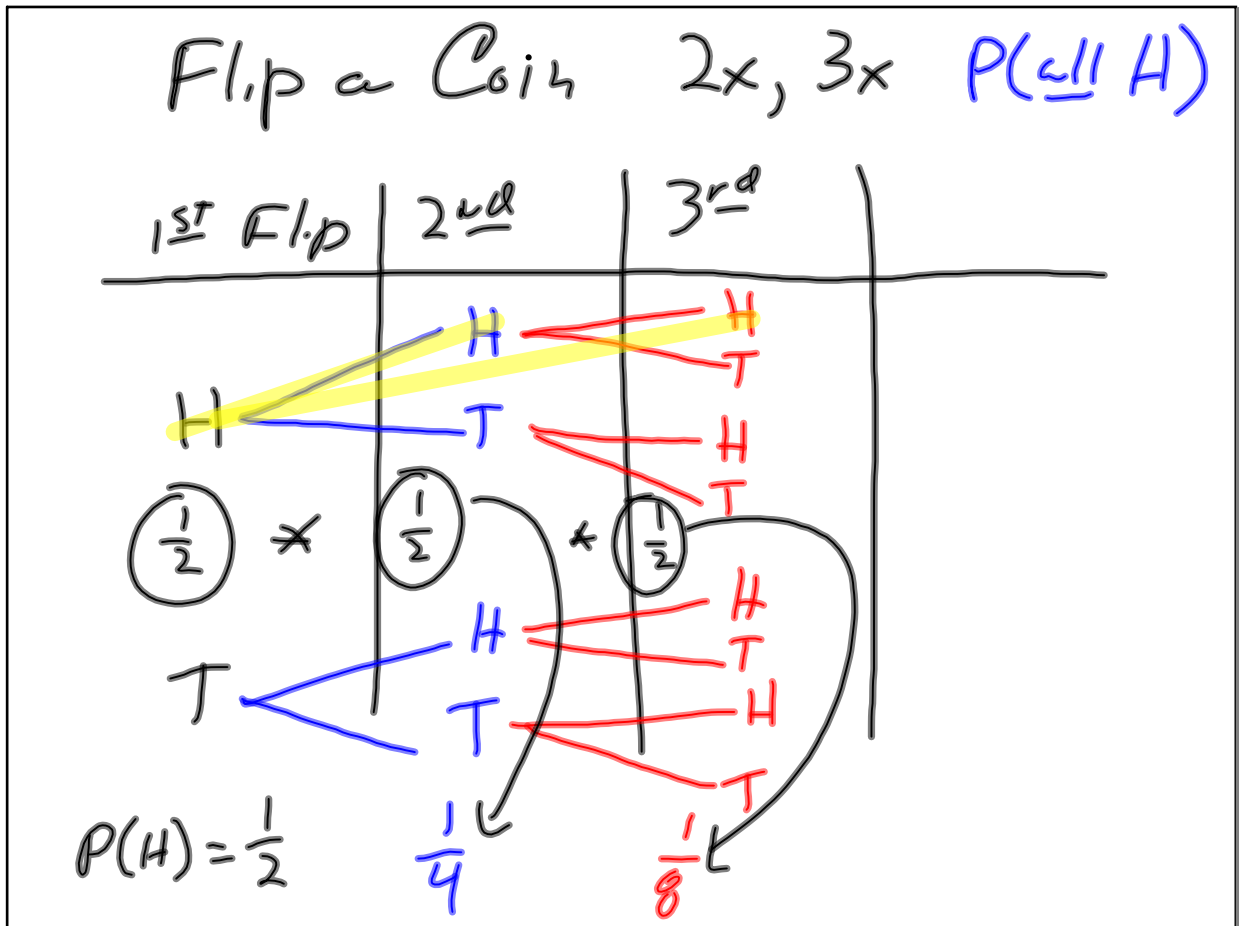


$$P(H) = \frac{1}{2}$$

$$P(T) = \frac{1}{2}$$

$$P(\text{Not } H) = P(T) = \frac{1}{2}$$

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Number Cube

$$P(6) = \frac{1}{6}$$

$$P(\text{even}) = \frac{3}{6} = \frac{1}{2}$$

$$P(\text{Prime}) = \frac{3}{6} = \frac{1}{2}$$

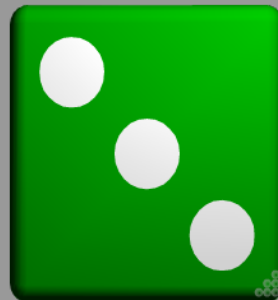
$$P(\text{Composite}) = \frac{2}{6} = \frac{1}{3}$$

2, 4, 6 = 3x

= 1/2

Prime 2, 3, 5

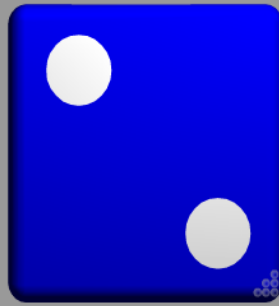
4, 6



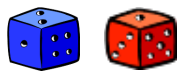
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Number Cube

$$\left(\frac{1}{6}, \frac{2}{12} \right), \frac{1}{12}, \frac{1}{3}$$



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43

34

11	12	13	14	15	16
21	22	23	24	25	26
31	32	33	34	35	36
41	42	43	44	45	46
51	52	53	54	55	56
61	62	63	64	65	66

$$P(\text{doubles}) = \frac{6}{36} = \frac{1}{6}$$

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