

E

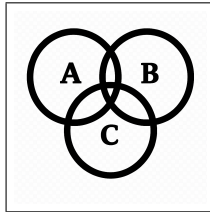
Odds and Probability

E



$$S = \{1, 2, 3, 4\}$$

$$T = \{1\}$$



$$P(T) = \frac{|T|}{|S|} = \frac{1}{4} = 0.25$$

$$P(T^C) = 1 - P(T) = 0.75$$

$$\frac{|T|}{|T^C|} = \frac{|E|}{|S|} \times \frac{|S|}{|E^C|} = \frac{P(E)}{P(E^C)} = \frac{P(E)}{1 - P(E)}$$

$$a : b \rightarrow \frac{a}{a+b} = \frac{ak}{ak+bk} = \frac{|E|}{|E|+|E^C|} = \frac{|E|}{|S|} = P(E)$$



$$a : b(W^C) = 26 : 1$$

$$P(W) = ?$$

E

Odds and Probability

E



$$a : b(W^C) = 26 : 1$$
$$P(W) = ?$$

$$p = P(W)$$

$$\frac{|W^C|}{|W|} = \frac{26}{1} = 26 = \frac{1-p}{p} \rightarrow 1 - p = 26p \rightarrow 1 = 27p \rightarrow p = \frac{1}{27}$$

$$P(W) = \frac{1}{27} \approx 0.04$$