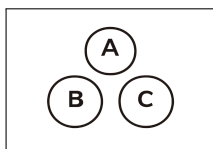


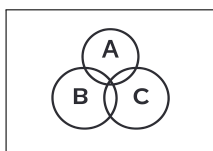
12 Discrete Distribution Odds and Probability

G



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

$$T = \{1\}$$

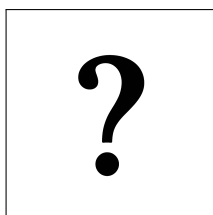


$$P(T) = \frac{|T|}{|S|} = \frac{1}{4} = 0.25$$

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

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

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



$$P(E) = \frac{3}{4}$$

$$a : b(E^C) = ?$$

12 Discrete Distribution Odds and Probability

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$$P(E^c) = 1 - P(E) = 1 - \frac{3}{4} = \frac{1}{4}$$

$$a : b(E^c) = \frac{P(E^c)}{P(E)} = \frac{1/4}{3/4} = \frac{1}{3} = 1 : 3$$