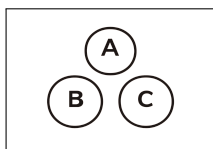


11

Discrete Distribution Independant Events

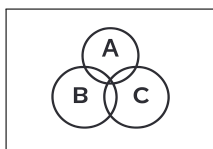
E



$$P(A) = 0.40$$

$$P(B) = 0.70$$

$$\square(A, B) = \text{thumbs up}$$



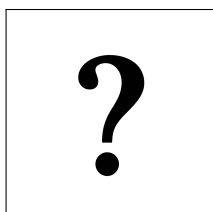
$$\square(A, B) \rightarrow P(A|B) = P(A)$$

$$\square(A, B) \rightarrow P(A \cap B) = P(A) \times P(B)$$

$$\square(A, B) \rightarrow P(A \cup B) = P(A) + P(B) - P(A) \times P(B)$$

$$\square(A, B) \rightarrow P(A \cup B) = 0.40 + 0.70 - 0.40 \times 0.70$$

$$\square(A, B) \rightarrow P(A \cup B) = 0.82$$



$$P(C) = 0.30$$

$$P(A|C) = 0.20$$

$$P(A|C^c) = 0.60$$

$$\square(A, B) = \text{thumbs up}$$

$$P(C \cup A) = ?$$

11

Discrete Distribution Independent Events

E



$$P(C^c) = 1 - 0.30 = 0.70$$

$$P(A) = P(A|C)P(C) + P(A|C^c)P(C^c) = 0.20 \times 0.30 + 0.60 \times 0.70 = 0.06 + 0.42 = 0.48$$

$$P(C \cup A) = P(C) + P(A) - P(C \cap A) = P(C \cup A) = 0.30 + 0.48 - 0.06 = 0.72$$