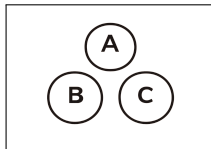


11

Discrete Distribution Independant Events

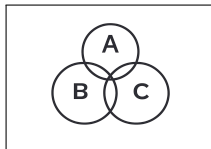
B



$$P(A) = 0.40$$

$$P(B) = 0.70$$

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



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

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

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

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

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



$$P(E \cup O) = 0.85$$

$$P(E^c) = 0.25$$

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

$$P(O) = ?$$

11

Discrete Distribution
Independant Events

B



$$P(E) = P(E^c) - 0.25 = 0.75$$

$$P(E \cap O) = P(E) \times P(O) = 0.75 \times P(O)$$

$$P(E \cup O) = P(E) + P(O) - P(E \cap O)$$

$$0.85 = 0.75 + P(O) - 0.75 \times P(O)$$

$$0.85 = 0.75 + P(O)(1 - 0.75) = 0.75 + 0.25P(O)$$

$$0.85 - 0.75 = 0.25P(O) \Rightarrow 0.10 = 0.25P(O) \Rightarrow P(O) = \frac{0.10}{0.25} = 0.4$$