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Discrete Distribution Independant Events

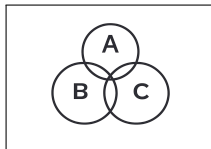
D



$$P(A) = 0.40$$

$$P(B) = 0.70$$

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



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

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

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

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

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



$$P(A) = 0.5$$

$$P(B) = 0.8$$

$$P(C) = 0.3$$

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

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

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D



$$P(A^c) = 1 - 0.5 = 0.5$$

$$P(B^c) = 1 - 0.8 = 0.2$$

$$P(C^c) = 1 - 0.3 = 0.7$$

$$P(A^c \cap B^c \cap C^c) = P(A^c) \times P(B^c) \times P(C^c)$$

$$P(A^c \cap B^c \cap C^c) = 0.5 \cdot 0.2 \cdot 0.7 = 0.07$$

$$P(A \cup B \cup C) = 1 - P(A^c \cap B^c \cap C^c)$$

$$P(A \cup B \cup C) = 1 - 0.07 = 0.93$$