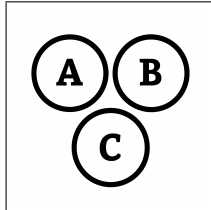




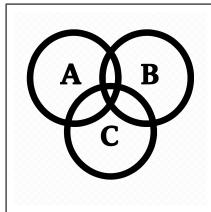
# Independant Events



$$P(A) = 0.40$$

$$P(B) = 0.70$$

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



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

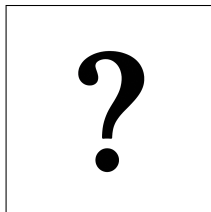
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$$\square(A, B) \rightarrow P(A \cap B) = P(A) \times P(B)$$

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

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

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



$$P(A) = 0.2$$

$$P(B) = 0.1$$

$$P(C) = 0.3$$

$$A \cap C = \emptyset \Rightarrow P(A \cap C) = 0$$

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

$$\square(B, C) \rightarrow \text{thumbs up}$$

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



## Independant Events



$$P(A \cap B) = P(A) \cdot P(B) = 0.2 \cdot 0.1 = 0.02$$

$$P(A \cap C) = 0$$

$$P(B \cap C) = P(B) \cdot P(C) = 0.1 \cdot 0.3 = 0.03$$

$$A \cap C = \emptyset \rightarrow A \cap B \cap C = P(A \cap C \cap B) = 0$$

$$P(A \cup B \cup C) = P(A) + P(B) + P(C) - P(A \cap B) - P(A \cap C) - P(B \cap C) + P(A \cap B \cap C)$$

$$P(A \cup B \cup C) = 0.2 + 0.1 + 0.3 - 0.02 - 0 - 0.03 + 0 = 0.6 - 0.05 = 0.55$$