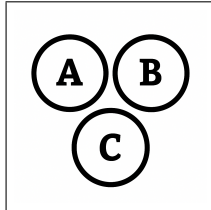
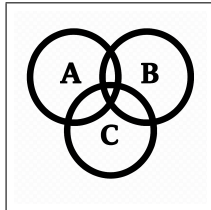


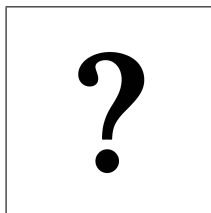
A Conditional Probabilities A



$$\begin{aligned}H &= 60 \\U &= 100 \\P(M \cap H) &= 0.10 \\P(H) &= 60/100 = 0.60 \\P(M|H) &= ?\end{aligned}$$

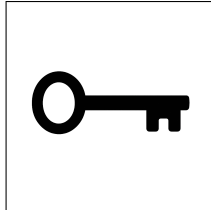


$$\begin{aligned}H &= 60 \\U &= 100 \\P(M \cap H) &= 0.10 \\P(H) &= 60/100 = 0.60 \\P(M|H) &= P(M \cap H)/P(H) = 0.10/0.60 = 1/6 \approx 0.17\end{aligned}$$



$$\begin{aligned}P(A) &= 0.70 \\P(A^c) &= 1 - 0.70 = 0.30 \\P(S) &= 0.20 \\P(S|A) &= 0.15 \\P(A^c \cap S^c) &= ?\end{aligned}$$

A Conditional Probabilities A



$$\begin{aligned}P(A) &= 0.70 \\P(A^c) &= 1 - 0.70 = 0.30 \\P(S) &= 0.20 \\P(S | A) &= 0.15 \\P(A^c \cap S^c) &= ?\end{aligned}$$

$$P(A \cap S) = P(S | A) \cdot P(A) = 0.15 \cdot 0.70 = 0.105$$

$$\begin{aligned}P(S) &= P(A \cap S) + P(A^c \cap S) \\P(A^c \cap S) &= P(S) - P(A \cap S) = 0.20 - 0.105 = 0.095\end{aligned}$$

$$\begin{aligned}P(A^c) &= 0.30 \quad \text{and} \quad P(A^c \cap S) = 0.095 \\P(A^c \cap S^c) &= P(A^c) - P(A^c \cap S) = 0.30 - 0.095 \approx 0.21\end{aligned}$$