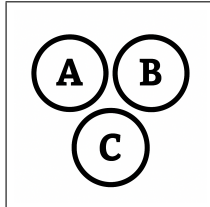
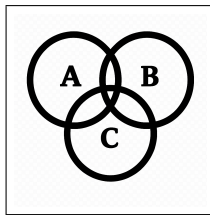


Posterior Probabilities



$$\begin{aligned}P(H) &= 0.30 \\P(L) &= 0.70 \\P(A|H) &= 0.40 \\P(A|L) &= 0.20\end{aligned}$$



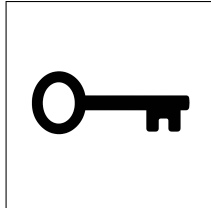
$$\begin{aligned}P(A) &= P(A|H)P(H) + P(A|L)P(L) \\P(A) &= (0.4)(0.3) + (0.2)(0.7) = 0.12 + 0.14 = 0.26\end{aligned}$$

$$P(H|A) = \frac{P(A|H)P(H)}{P(A)} = \frac{(0.4)(0.3)}{0.26} = \frac{0.12}{0.26} = \frac{6}{13} \approx 0.4615$$



$$\begin{aligned}P(K) &= 0.40 \\P(K^C) &= 0.60 \\P(P|K) &= 0.80 \\P(P|K^C) &= 0.40 \\P(K|P) &= ?\end{aligned}$$

Posterior Probabilities



$$\begin{aligned}P(K) &= 0.40 \\P(K^C) &= 0.60 \\P(P|K) &= 0.80 \\P(P|K^C) &= 0.40 \\P(K|P) &= ?\end{aligned}$$

$$\begin{aligned}P(P) &= P(P|K)P(K) + P(P|K^C)P(K^C) \\&= (0.80)(0.40) + (0.40)(0.60) \\&= 0.56\end{aligned}$$

$$P(K|P) = \frac{P(P|K)P(K)}{P(P)} = \frac{(0.80)(0.40)}{0.56} = 0.57$$