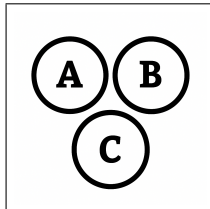


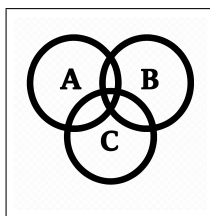
P

Posterior Probabilities

P

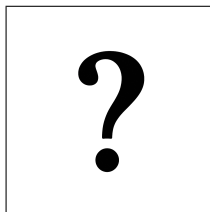


$$\begin{aligned}P(H) &= 0.30 \\P(L) &= 0.70 \\P(A|H) &= 0.40 \\P(A|L) &= 0.20\end{aligned}$$



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

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



$$\begin{aligned}P(N) &= 0.40 \\P(M) &= 0.50 \\P(H) &= 0.10 \\P(C|N) &= 0.05 \\P(C|M) &= 0.08 \\P(C|H) &= 0.20 \\P(N|C) &= ?\end{aligned}$$

P

Posterior Probabilities

P



$$P(N) = 0.40$$

$$P(M) = 0.50$$

$$P(H) = 0.10$$

$$P(C|N) = 0.05$$

$$P(C|M) = 0.08$$

$$P(C|H) = 0.20$$

$$P(N|C) = ?$$

$$\begin{aligned} P(C) &= P(C|N)P(N) + P(C|M)P(M) + P(C|H)P(H) \\ &= (0.05)(0.40) + (0.08)(0.50) + (0.20)(0.10) \\ &= 0.08 \end{aligned}$$

$$P(N|C) = \frac{P(C|N)P(N)}{P(C)} = \frac{(0.05)(0.40)}{0.08} = 0.25$$