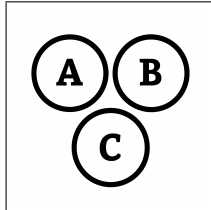


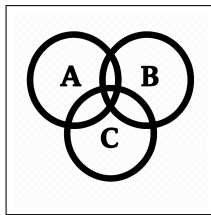
# N

## Posterior Probabilities

# N



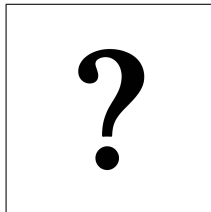
$$\begin{aligned}P(H) &= 0.30 \\P(L) &= 0.70 \\P(A|H) &= 0.40 \\P(A|L) &= 0.20\end{aligned}$$



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

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



$$\begin{aligned}P(A) &= 0.25 \\P(B) &= 0.35 \\P(C) &= 0.40 \\P(D|A) &= 0.05 \\P(D|B) &= 0.04 \\P(D|C) &= 0.02 \\P(A|D) &= ?\end{aligned}$$

# N

## Posterior Probabilities

# N



$$P(A) = 0.25$$

$$P(B) = 0.35$$

$$P(C) = 0.40$$

$$P(D|A) = 0.05$$

$$P(D|B) = 0.04$$

$$P(D|C) = 0.02$$

$$P(A|D) = ?$$

---

$$\begin{aligned} P(D) &= P(D|A)P(A) + P(D|B)P(B) + P(D|C)P(C) \\ &= (0.05)(0.25) + (0.04)(0.35) + (0.02)(0.40) \\ &= 0.03 \end{aligned}$$

---

$$P(A|D) = \frac{P(D|A)P(A)}{P(D)} = \frac{(0.05)(0.25)}{0.03} = 0.36$$