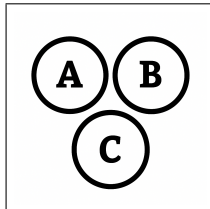


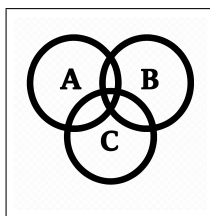
# A

## Posterior Probabilities

# A



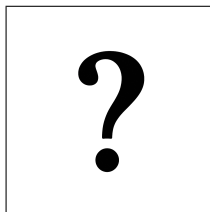
$$\begin{aligned}P(H) &= 0.30 \\P(L) &= 0.70 \\P(A|H) &= 0.40 \\P(A|L) &= 0.20\end{aligned}$$



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

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



$$\begin{aligned}P(G_1) &= 0.08 \\P(G_2) &= 0.15 \\P(G_3) &= 0.49 \\P(G_4) &= 0.28 \\P(A|G_1) &= 0.06 \\P(A|G_2) &= 0.03 \\P(A|G_3) &= 0.02 \\P(A|G_4) &= 0.04 \\P(G_1|A) &= ?\end{aligned}$$

# A

## Posterior Probabilities

# A



$$P(G_1) = 0.08$$

$$P(G_2) = 0.15$$

$$P(G_3) = 0.49$$

$$P(G_4) = 0.28$$

$$P(A|G_1) = 0.06$$

$$P(A|G_2) = 0.03$$

$$P(A|G_3) = 0.02$$

$$P(A|G_4) = 0.04$$

$$P(G_1|A) = ?$$

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$$P(A) = P(A|G_1)P(G_1) + P(A|G_2)P(G_2) + P(A|G_3)P(G_3) + P(A|G_4)P(G_4)$$

$$P(A) = (0.06)(0.08) + (0.03)(0.15) + (0.02)(0.49) + (0.04)(0.28)$$

$$P(A) = 0.0048 + 0.0045 + 0.0098 + 0.0112$$

$$P(A) = 0.0303$$

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$$P(G_1|A) = \frac{P(A|G_1) \cdot P(G_1)}{P(A)} = \frac{(0.06)(0.08)}{0.0303} = \frac{0.0048}{0.0303} \approx 0.16$$