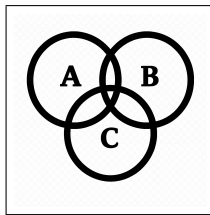




## Posterior Probabilities



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



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

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



$$\begin{aligned}P(W) &= 0.40 \\P(T) &= 0.35 \\P(O) &= 0.25 \\P(F|W) &= 0.30 \\P(F|T) &= 0.60 \\P(F|O) &= 0.50 \\P(W|F) &= ?\end{aligned}$$



## Posterior Probabilities



$$\begin{aligned}P(W) &= 0.40 \\P(T) &= 0.35 \\P(O) &= 0.25 \\P(F|W) &= 0.30 \\P(F|T) &= 0.60 \\P(F|O) &= 0.50 \\P(W|F) &= ?\end{aligned}$$

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$$\begin{aligned}P(F) &= P(F|W)P(W) + P(F|T)P(T) + P(F|O)P(O) \\&= (0.30)(0.40) + (0.60)(0.35) + (0.50)(0.25) \\&= 0.46\end{aligned}$$

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$$P(W|F) = \frac{P(F|W)P(W)}{P(F)} = \frac{(0.30)(0.40)}{0.46} = 0.26$$