

\cup (union; keyword: "or")

\cap (intersection; keyword "and")

Question: are A and B independent? $\rightarrow P(A \text{ and } B) \stackrel{?}{=} P(A)P(B)$

$0.2 = (0.5)(0.3) \Rightarrow 0.2 \neq 0.15 \therefore A \text{ and } B \text{ are NOT independent (they are dependent)}$

$P(H) = 0.5 \text{ and } P(T) = 0.5$

$P(2H) = P(H1 \text{ and } H2) = P(H1)P(H2) = (0.5)(0.5) = 0.25$

$P(2T) = P(0H) = P(T1 \text{ and } T2) = P(T1)P(T2) = (0.5)(0.5) = 0.25$

$P(1H) = P(H1 \text{ then } T2) \text{ or } P(T1H2) = 1 - [P(2H) + P(2T)] = 1 - (0.25 + 0.25) = 1 - 0.5 = 0.5$