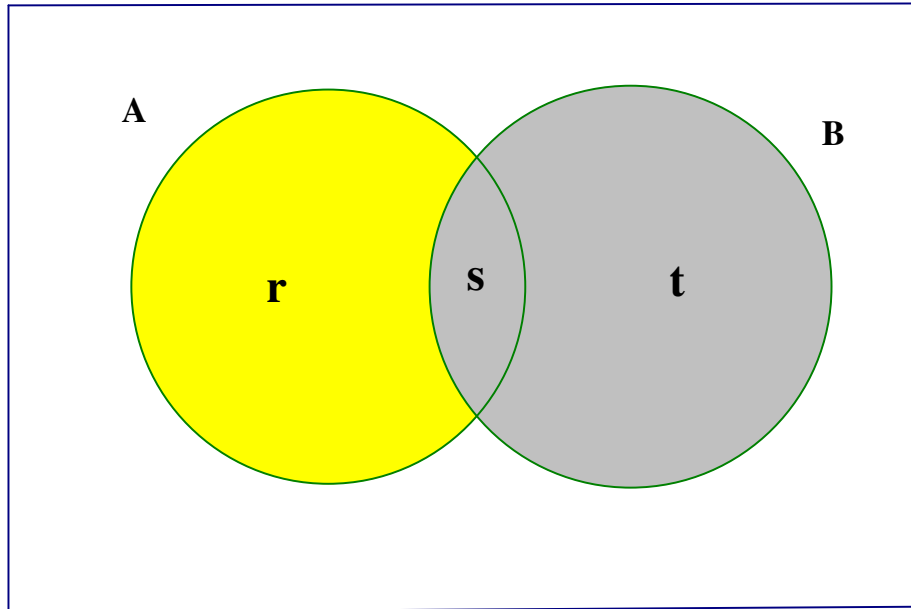


## Multiplication Rule



$\Omega$  :  $n$  equally likely outcomes

$$P(B|A) = \frac{s}{r+s} = \frac{\frac{s}{n}}{\frac{r+s}{n}} = \frac{P(A \cap B)}{P(A)}$$

So

$$P(A \cap B) = P(A) \cdot P(B|A)$$

$$P(A|B) = \frac{P(A \cap B)}{P(B)}$$