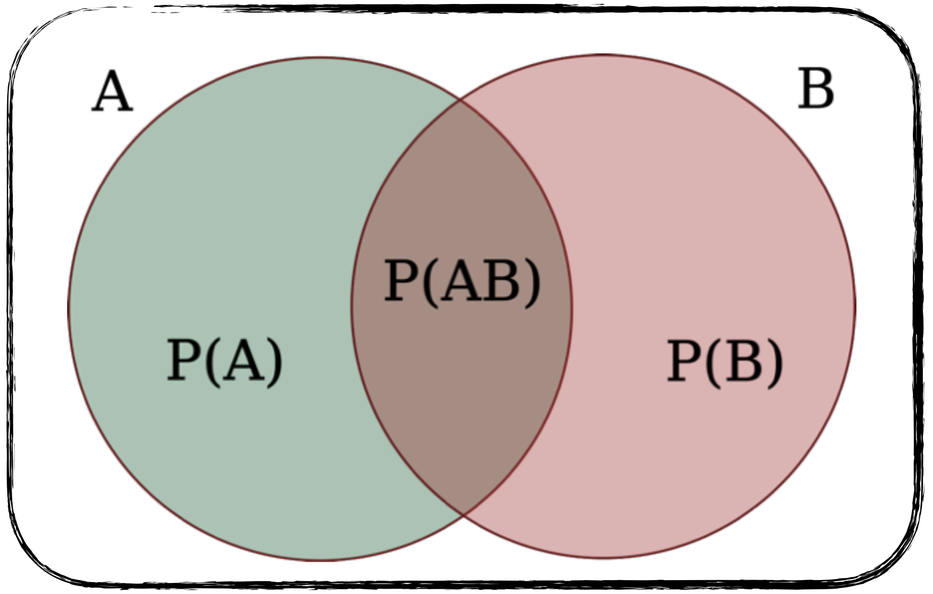
Probability rules

- If two events, A and B, are **independent**:
  - $P(A \mid B) = P(A)$: If A and B are independent, the probability of A given B is just the probability of A.
- More generally, we have **the product rule**:
  - $P(AB) = P(A)P(B \mid A) = P(B)P(A \mid B)$

$$P(A \mid B) = \frac{P(A)P(B \mid A)}{P(B)}$$



Probability distribution

Crash course

- We can use standard probability distributions to define these relations
- If a variable y follows a normal distribution:
  - $P(y) = P(y \mid \mu, \sigma) = Normal(y \mid \mu, \sigma)$
  - Where μ and σ are **parameters**
    - μ: is the mean, a location parameter
    - σ: sigma is the standard deviation, a scale parameter