

## Conditional Probability

The probability of event A happening, when event B happens.

**Basic Formula:**

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

**Subset Formula:**

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

**Example:**

A box contains 3 red pencils and 4 yellow pencils. Three pencils are selected at random. What is the probability that exactly two red pencils are selected if the second pencil is red?