

Formulas & Tables

Standardized normal data

$$z = \frac{x - \mu}{\sigma} \text{ or } \frac{\text{location} - \text{middle}}{\text{std. dev.}}$$

Standard deviation of a sample mean

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{N}}$$

Standard deviation of a sample proportion

$$\sigma_{\hat{p}} = \sqrt{\frac{p(1-p)}{N}}$$

Basic Probability Rules

1. Addition Rule

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

2. Multiplication Rule*

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

**Caution: This multiplication rule only works if A and B are independent events.*

Conditional Probability

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