

Formulas Sheet

Standardized Normal Data

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

Standard Deviations for Sampling Distributions

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{N}} \qquad \sigma_{\hat{p}} = \sqrt{\frac{p(1-p)}{N}}$$

Addition and Multiplication Rules for Probability

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B) \qquad P(A \text{ and } B) = P(A) \cdot P(B)^*$$

(*only if *A* and *B* are independent)

Conditional Probability

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

Binomial Distribution Parameters

$$\mu = Np \qquad \sigma = \sqrt{p(1-p)N}$$