

## Formulas

$$\bar{y} = \frac{\Sigma y_i}{n} \quad s^2 = \frac{\Sigma (y - \bar{y})^2}{n - 1}$$

$$\sigma_{\bar{y}} = \frac{\sigma}{\sqrt{n}} \quad z = \frac{y - \mu}{\sigma}$$

$$\bar{y} \pm t(se), \quad se = s/\sqrt{n}$$

$$t = \frac{\bar{y} - \mu_0}{se}$$

$$\sigma_{\hat{\pi}} = \sqrt{\frac{\pi(1 - \pi)}{n}}$$

$$\hat{\pi} \pm z(se), \quad se = \sqrt{\frac{\hat{\pi}(1 - \hat{\pi})}{n}}$$

$$z = \frac{\hat{\pi} - \pi_0}{se_0} \quad se_0 = \sqrt{\frac{\pi_0(1 - \pi_0)}{n}}$$

$$n = \left(\frac{z}{M}\right)^2 \pi(1 - \pi)$$

$$n = \left(\frac{z}{M}\right)^2 \sigma^2$$