

STAT 512 - Test 2 Formulas

$$\bar{Y} \pm Z_{\alpha/2} \left(\frac{S}{\sqrt{n}} \right)$$

$$\hat{p} \pm Z_{\alpha/2} \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$$

$$(\bar{Y}_1 - \bar{Y}_2) \pm Z_{\alpha/2} \sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}$$

$$(\hat{p}_1 - \hat{p}_2) \pm Z_{\alpha/2} \sqrt{\frac{\hat{p}_1(1-\hat{p}_1)}{n_1} + \frac{\hat{p}_2(1-\hat{p}_2)}{n_2}}$$

$$n = \left(\frac{Z_{\alpha/2}}{B} \right)^2 \sigma^2$$

$$n = \left(\frac{Z_{\alpha/2}}{B} \right)^2 p(1-p)$$

$$\bar{Y} \pm t_{\alpha/2, n-1} \left(\frac{S}{\sqrt{n}} \right)$$

$$(\bar{Y}_1 - \bar{Y}_2) \pm t_{\alpha/2, n_1+n_2-2} \sqrt{S_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$$

$$S_p^2 = \frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1+n_2-2}$$

$$\left[\frac{(n-1)S^2}{\chi_{\alpha/2, n-1}^2}, \frac{(n-1)S^2}{\chi_{1-\alpha/2, n-1}^2} \right] \left[\frac{S_2^2}{S_1^2 (F_{\alpha/2, n_2-1, n_1-1})}, \frac{S_2^2 (F_{\alpha/2, n_1-1, n_2-1})}{S_1^2} \right]$$