

EQUATIONS

$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$	$s^2 = \frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1} = \frac{\sum_{i=1}^n x_i^2 - n\bar{x}^2}{n-1}$	$z = \frac{x - \mu}{\sigma_x}$
$s^2 = \frac{1}{n-1} \left[\sum_{i=1}^n x_i^2 - \frac{1}{n} \left(\sum_{i=1}^n x_i \right)^2 \right]$	$x_p = \mu + \sigma_x z_{1-p}$	$P(X - \mu \leq k\sigma) \geq 1 - \frac{1}{k^2}$
$\sigma_{\bar{x}}^2 = \frac{\sigma_x^2}{n}$	$\sigma_p^2 = \frac{p(1-p)}{n}$	$n = \frac{z_{\alpha/2}^2 \sigma_x^2}{m^2}$
$n = \frac{z_{\alpha/2}^2 p(1-p)}{m^2}$	$\bar{x} \pm z_{\alpha/2} \frac{\sigma_x}{\sqrt{n}}$	$\hat{p} \pm z_{\alpha/2} \frac{\sqrt{\hat{p}(1-\hat{p})}}{\sqrt{n}}$
$\bar{x} \pm t_{\alpha/2} \frac{s}{\sqrt{n}}$	$z = \frac{\bar{x} - \mu_0}{\sigma_x / \sqrt{n}}$	$z = \frac{\hat{p} - p_0}{\sqrt{p_0(1-p_0)/n}}$
$t = \frac{\bar{x} - \mu_0}{s / \sqrt{n}}$	$\sigma_{\hat{p}_1 - \hat{p}_2}^2 = \frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}$	$\hat{p}_1 - \hat{p}_2 \pm z_{\alpha/2} \sqrt{\frac{\hat{p}_1(1-\hat{p}_1)}{n_1} + \frac{\hat{p}_2(1-\hat{p}_2)}{n_2}}$
$\sigma_{\bar{x}_1 - \bar{x}_2}^2 = \frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}$	$\bar{x}_1 - \bar{x}_2 \pm t_{\alpha/2} \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$	$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$
$df = \frac{(V_1 + V_2)^2}{\frac{V_1^2}{n_1-1} + \frac{V_2^2}{n_2-1}}$	$V_1 = \frac{s_1^2}{n_1}$	$V_2 = \frac{s_2^2}{n_2}$
$z = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$	$z = \frac{\hat{p}_1 - \hat{p}_2}{\sqrt{\frac{p_c(1-p_c)}{n_1} + \frac{p_c(1-p_c)}{n_2}}}$	$p_c = \frac{n_1 \hat{p}_1 + n_2 \hat{p}_2}{n_1 + n_2}$
$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{s_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$	$s_p^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$	$t_{\alpha/2} \sqrt{s_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$
$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$	$\bar{x}_1 - \bar{x}_2 \pm t_{\alpha/2} \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$	$\left(\frac{(n-1)S^2}{\chi_{\alpha/2}^2}, \frac{(n-1)S^2}{\chi_{1-\alpha/2}^2} \right)$
$\left(\frac{S_1^2}{S_2^2} F_{n_2-1, n_1-1, 1-\alpha/2}, \frac{S_1^2}{S_2^2} F_{n_2-1, n_1-1, \alpha/2} \right)$	$\chi^2 = \frac{(n-1)S^2}{\sigma_0^2}$	$F = \frac{S_1^2/\sigma_1^2}{S_2^2/\sigma_2^2}$