Confidence interval for mean, proportion and variance

Population parameter	$100(1-\alpha)\%$ Confidence interval for population parameter
μ	$\bar{x} \pm z_{\alpha/2}\dfrac{\sigma}{\sqrt{n}}$; σ known
μ	$\bar{x} \pm t_{\alpha/2}\dfrac{s}{\sqrt{n}}$; $\upsilon = n-1$, σ unknown
p	$\hat{p} \pm z_{\alpha/2}\sqrt{\dfrac{\hat{p}\left(1-\hat{p}\right)}{n}}$; $\hat{p} = \dfrac{x}{n}$, and n large
σ^2	$\dfrac{(n-1)s^2}{\chi^2_{\alpha/2}} < \sigma^2 < \dfrac{(n-1)s^2}{\chi^2_{1-\alpha/2}}$; $\upsilon = n-1$
$\mu_1 - \mu_2$	$\overline{x_1} - \overline{x_2} \pm z_{\alpha/2}\sqrt{\sigma_1^2/n_1 + \sigma_2^2/n_2}$; σ_1 & σ_2 known
$\mu_1 - \mu_2$	$\left(\overline{x_1} - \overline{x_2}\right) \pm t_{\alpha/2} s_p \sqrt{1/n_1 + 1/n_2}$ $\sigma_1 = \sigma_2$ unknown $\upsilon = n_1 + n_2 - 2$ $s_p^2 = \dfrac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}$,
$d = \mu_1 - \mu_2$	$\overline{x_1} - \overline{x_2} \pm t^*_{\alpha/2}\sqrt{\dfrac{s_1^2}{n_1} + \dfrac{s_2^2}{n_2}}$ $\sigma_1 \neq \sigma_2$ & *unknown*, $\upsilon = \dfrac{\left(s_1^2/n_1 + s_2^2/n_2\right)^2}{\left(s_1^2/n_1\right)^2/(n_1-1) + \left(s_2^2/n_2\right)^2/(n_2-1)}$
μ_d	$\bar{d} \pm t_{\alpha/2}\dfrac{s_d}{\sqrt{n}}$; $\upsilon = n-1$, paired observations
$p_1 - p_2$	$\hat{p}_1 - \hat{p}_2 \pm z_{\alpha/2}\sqrt{\dfrac{\hat{p}_1\left(1-\hat{p}_1\right)}{n_1} + \dfrac{\hat{p}_2\left(1-\hat{p}_2\right)}{n_2}}$
σ_1^2/σ_2^2	$\dfrac{s_1^2}{s_2^2 F_{\alpha/2}(\upsilon_1,\upsilon_2)} < \dfrac{\sigma_1^2}{\sigma_2^2} < \dfrac{s_1^2}{s_2^2 F_{1-\alpha/2}(\upsilon_1,\upsilon_2)}$; $\upsilon_1 = n_1 - 1$, and $\upsilon_2 = n_2 - 1$