Formulas for 1-Sample Inferential Statistics

	Confidence Interval	Hypothesis CV	Hypothesis TV	Sample size	d.f.
Proportion p	$\hat{p} - z_{\alpha/2}\sqrt{\frac{pq}{n}} \leq p \leq \hat{p} + z_{\alpha/2}\sqrt{\frac{pq}{n}}$	z chart	$z = \frac{\hat{p} - p}{\sqrt{pq/n}}$	$n = pq\left(\frac{z_{\alpha/2}}{E}\right)^2$	$---$
z	$\overline{x} - z_{\alpha/2}\sqrt{\frac{\sigma}{n}} \leq \mu \leq \overline{x} + z_{\alpha/2}\sqrt{\frac{\sigma}{n}}$	z chart	$z = \frac{\overline{x} - \mu}{\sigma/\sqrt{n}}$	$n = \left(\frac{z_{\alpha/2}\sigma}{E}\right)^2$	$---$
t	$\overline{x} - t_{\alpha/2}\sqrt{\frac{s}{n}} \leq \mu \leq \overline{x} + t_{\alpha/2}\sqrt{\frac{s}{n}}$	t chart	$t = \frac{\overline{x} - \mu}{s/\sqrt{n}}$	$---$	$n-1$
Variance	$\frac{(n-1)s^2}{\chi^2_{\alpha/2}} \leq \sigma^2 \leq \frac{(n-1)s^2}{\chi^2_{1-\alpha/2}}$	χ^2 chart	$\chi^2 = \frac{(n-1)s^2}{\sigma^2}$	$---$	$n-1$
Standard Deviation	$\sqrt{\frac{(n-1)s^2}{\chi^2_{\alpha/2}}} \leq \sigma \leq \sqrt{\frac{(n-1)s^2}{\chi^2_{1-(\alpha/2)}}}$	χ^2 chart	$\chi^2 = \frac{(n-1)s^2}{\sigma^2}$	$---$	$n-1$