

7.9: Chapter 7 Formulas

Confidence Interval for One Proportion $\hat{p} \pm z_{\frac{\alpha}{2}} \sqrt{\left(\frac{\hat{p}\hat{q}}{n}\right)}$ $\hat{p} = \frac{x}{n}$ $\hat{q} = 1 - \hat{p}$ TI-84: 1-PropZInt	Sample Size for Proportion $n = p^* \cdot q^* \left(\frac{z_{\alpha/2}}{E}\right)^2$ Always round up to whole number. If p is not given use $p^* = 0.5$. E = Margin of Error
Confidence Interval for One Mean Use z-interval when σ is given. Use t-interval when s is given. If $n < 30$, population needs to be normal.	Z-Confidence Interval $\bar{x} \pm z_{\frac{\alpha}{2}} \left(\frac{\sigma}{\sqrt{n}}\right)$ TI-84: ZInterval
Z-Critical Values Excel: $z_{\alpha/2} = \text{NORM.INV}(1 - \text{area}/2, 0, 1)$ TI-84: $z_{\alpha/2} = \text{invNorm}(1 - \text{area}/2, 0, 1)$	t-Critical Values Excel: $t_{\alpha/2} = \text{T.INV}(1 - \text{area}/2, df)$ TI-84: $t_{\alpha/2} = \text{invT}(1 - \text{area}/2, df)$
t-Confidence Interval $\bar{x} \pm t_{\alpha/2} \left(\frac{s}{\sqrt{n}}\right)$ $df = n - 1$ TI-84: TInterval	Sample Size for Mean $n = \left(\frac{z_{\alpha/2} \cdot \sigma}{E}\right)^2$ Always round up to whole number. E = Margin of Error

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