

Formulas for the Final Exam

Inference for the population mean, μ , when σ is known

Confidence interval:

$$\bar{y} - z^* \left(\frac{\sigma}{\sqrt{n}} \right) \text{ to } \bar{y} + z^* \left(\frac{\sigma}{\sqrt{n}} \right)$$

Confidence	80%	90%	95%	98%	99%
z^*	1.28	1.65	1.96	2.33	2.58

Test of hypothesis:

$$z = \frac{\bar{y} - \mu_0}{\left(\frac{\sigma}{\sqrt{n}} \right)}$$

Table Z

Inference for the population proportion, p

Confidence interval:

$$\hat{p} - z^* \left(\sqrt{\frac{\hat{p}(1-\hat{p})}{n}} \right) \text{ to } \hat{p} + z^* \left(\sqrt{\frac{\hat{p}(1-\hat{p})}{n}} \right)$$

Confidence	80%	90%	95%	98%	99%
z^*	1.28	1.65	1.96	2.33	2.58

Test of hypothesis:

$$z = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

Table Z

Inference for the population mean, μ , when σ is NOT known

Confidence interval:

$$\bar{y} - t^* \left(\frac{s}{\sqrt{n}} \right) \text{ to } \bar{y} + t^* \left(\frac{s}{\sqrt{n}} \right)$$

Table T with $df = n - 1$

Test of hypothesis:

$$t = \frac{\bar{y} - \mu_0}{\left(\frac{s}{\sqrt{n}} \right)}$$

Table T