Goal: Estimate a parameter (Confidence Interval) Ch. 8

Confidence Intervals:

One sample → Mean (quantitative) σ known → Chapter 14 → $\overline{x} \pm z^* \dfrac{\sigma}{\sqrt{n}}$

STATS ——→ TESTS ——→ 7: Z-Interval

One sample → Mean (quantitative) σ unknown → Chapter 17 → $\overline{x} \pm t^* \dfrac{s}{\sqrt{n}}$

STATS ——→ TESTS ——→ 8: T-Interval

One sample → Proportion (categorical data) → Chapter 19 → $\hat{p} \pm z^* \sqrt{\dfrac{\hat{p}(1-\hat{p})}{n}}$

STATS ——→ TESTS ——→ A: 1-PropZInterval

Two samples → Compare means → Chapter 18 → $(\overline{x_1} - \overline{x_2}) \pm t^* \sqrt{\dfrac{s_1^2}{n_1} + \dfrac{s_2^2}{n_2}}$

STATS ——→ TESTS ——→ 0: 2-SampTInterval
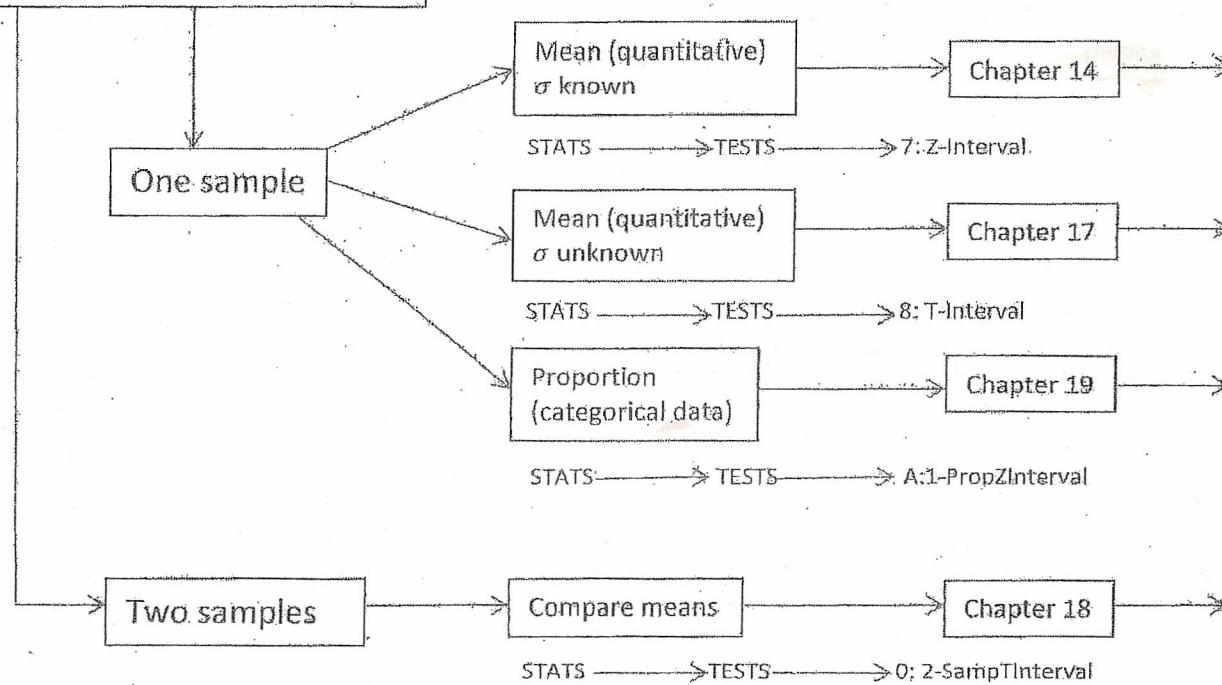
Critical Values:	z*	t*
Table	A	C
Calculator	invNorm(%below)	invT(%below,df)

$df = n-1$

(for 2 samples, choose smaller)

$CI = estimate \pm margin\ of\ error\ (ME)$

$ME = critical\ value * standard\ error\ (SE)$

Sample Size:

$n = \left(\dfrac{z^* \sigma}{ME}\right)^2 \qquad n = \left(\dfrac{z^*}{m}\right)^2 p^*(1-p^*)$

Unless specified p*=0.5

OR

$n = \left(\dfrac{t^* s}{ME}\right)^2$