

Review 4 Summary

Confidence intervals:

1. Means, sigma, population standard deviation known:

Formula: $\bar{x} \pm Z_{\alpha/2} \frac{\sigma}{\sqrt{n}}$

Most common $Z_{\alpha/2}$: 2.576 for 99%, 2.326 for 98%
1.96 for 95%, 1.645 for 90%

See formula sheet for additional $Z_{\alpha/2}$: Test 4 Formulas @
https://mystatclass.com/media/class/sta2023/Test_4_Formulas.pdf

CASIO 9750:

F4 for INTR, F1 for Z, F1 for 1-S

TI84:

STAT, TESTS, then 7: Z-Interval

2. Means: sample standard deviation known:

Formula: $\bar{x} \pm t_{\alpha/2} \frac{s}{\sqrt{n}}$

$t_{\alpha/2}$ on t-table: $df = n - 1$

Link to tables; t-table, page 3 @

https://mystatclass.com/media/class/sta2023/Tables_Bluman_Statistics.pdf

CASIO 9750

Sample mean given: F4 for INTR, F2 for T, F1 for 1-S

Original data given: First, enter data on List 1 then F4 for INTR, F2 for T, F1 for 1-S then press F1 to change Data to List.

TI84 CE Plus

Sample mean given: STAT, TESTS, then 8: T-Interval

Original data given: First, enter data on List 1 STAT, TESTS, then 8: T-Interval, then for Inpt select Data, press Enter.

3. Proportions intervals:

Formula:

$$\hat{p} \pm z_{\alpha/2} \cdot \sqrt{\frac{\hat{p} \cdot \hat{q}}{n}}$$

$z_{\alpha/2}$ see formula sheet.

CASIO 9750

F4 for INTR, F1 for Z, F3 for 1-P

TI84

STAT, then TESTS, then scroll down to A: 1-PropZInt:

Sample size determination: proportions:

$$n = \hat{p} \cdot \hat{q} \left(\frac{z_{\alpha/2}}{E} \right)^2$$

$z_{\alpha/2}$ on formula sheet.

E is the Error, a percentage as a decimal.

\hat{p} a known percentage of the variable to be estimated, as a decimal; and $\hat{q} = 1 - \hat{p}$.

If \hat{p} is not given use 0.50

$z_{\alpha/2}$ see formula sheet for Test 4.