Texas Instruments Calculator Shortcuts

STA 2023 & 2122

Descriptive Statistics: (Mean, Standard Deviation, Minimum, Q1, Median, Q3, Maximum)

- Insert Data in calculator STAT > Edit
- Then: STAT > CALC > 1: 1-Vars Stat
- To clear a list: STAT > Edit > go up to the list name (L1, L2, L3. . .) > CLEAR > ENTER
- Restore a missing list name: STAT > Edit > go up > 2^{nd} DEL > type the missing name > ENTER

Linear Regression:

- Correlation coefficient (*one-time set up*): 2^{nd} 0 > scroll down to DiagnosticOn > ENTER > ENTER
- Insert values of X into List1 and values of Y into List2: STAT > Edit
- Then: STAT > CALC > 4: LinReg (ax+b) > 2^{nd} > 1 > Comma > 2^{nd} > 2 > ENTER
- Or: STAT > CALC > 8: LinReg (a+bx) > 2^{nd} > 1 > Comma > 2^{nd} > 2 > ENTER

Intervals:

- STAT > TESTS > 7: Z-Interval
- STAT > TESTS > 8: T-Interval
- STAT > TESTS > A: 1-PropZInterval

Hypothesis Test:

- STAT > TESTS > 1: Z-Test
- STAT > TESTS > 2: T-Test
- STAT > TESTS > 4: 2-SampTTest
- STAT > TESTS > 5: 1propZ-Test

Distributions:

- 2^{nd} > VARS > 2: normalcdf (Left Bound, Right Bound, Mean, Standard Deviation)
- 2^{nd} > VARS > 3: invNorm (Area to the Left, Mean, Standard Deviation)
- 2^{nd} > VARS > 5: tcdf (Left Bound, Right Bound, Degrees of Freedom)
- 2^{nd} > VARS > 0: binompdf (number of trials, probability of success, number of successes)
- 2^{nd} > VARS > A: binomcdf (number of trials, probability of success, number of successes)

This instructional aid was prepared by the Tallahassee Community College Learning Commons.

Formula Sheet

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Z-score for Population:

$$Z = \frac{X - \mu}{\sigma}$$

Z-score for Sample

$$Z = \frac{X - \bar{X}}{S}$$

Regression Equations:

Slope: $b_1 = r\frac{S_y}{S_x}$ y-intercept: $b_0 = \bar{y} - b_1\bar{x}$ $residual = y - \hat{y}$

Binomial Distribution:

Mean: $\mu = np$ Standard Deviation: $\sigma = \sqrt{np(1-p)}$

Sampling Distribution of Sample Mean ($\overline{X}$):

Mean: $\mu_{\overline{X}} = \mu$ Standard Deviation: $\sigma_{\overline{X}} = \frac{\sigma}{\sqrt{n}}$

Sampling Distribution of Sample Proportion ($\hat{p}$):

$$\hat{p} = \frac{x}{n} \qquad \mu_{\hat{p}} = p \qquad \sigma_{\hat{p}} = \sqrt{\frac{p(1-p)}{n}}$$

Z-scores for Sampling Distribution:

For mean:

$$Z = \frac{\overline{X} - \mu}{\sigma/\sqrt{n}}$$

For Proportion:

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

Confidence Intervals for Mean:

$$C.I. = \overline{X} \pm Z_c\frac{\sigma}{\sqrt{n}} \qquad C.I. = \overline{X} \pm t_c\frac{S}{\sqrt{n}}$$

Confidence Interval for Proportion:

$$C.I. = \hat{p} \pm Z_c\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$$

Confidence	Z_c	Confidence	Z_c
90%	1.645	98%	2.326
95%	1.96	99%	2.576

Sample Size:

For Mean:

$$n = \frac{{Z_c}^2\sigma^2}{M^2}$$

For Proportion:

$$n = \frac{p(1-p){Z_c}^2}{M^2}$$