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)

Formula Sheet

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Z-score for Population:

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

Z-score for Sample

$$Z = X - X\_\_\_ S$$

Regression Equations:

Slope: $b_1 = r \frac{S}{\_S_{yx}}$

y-intercept: $b_0 = y - b_1\bar{x}$

$residual = y - y$

Binomial Distribution:

Mean: $\mu = np$

Standard Deviation: $\sigma = \overline{np(1-p)}$

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

Mean: $\mu_{X\_} = \mu$

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

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

n p p n

$\hat{p} = \_x$ $\mu =$

p $\sigma =$

$p(1-p)$

Z-scores for Sampling Distribution:

For mean:

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

For Proportion:

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

Confidence Intervals for Mean:

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

$$C. \quad t_c\sqrt{n}$$

Confidence Interval for Proportion:

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

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

Sample Size:

For Mean:

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

For Proportion:

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