

GRAPHING CALCULATOR DIRECTIONS

Clearing and Creating Lists

These instructions assume you need to clear data from L1. To access the *list editor*, press the **STAT** button (just to the left of the arrow pad). With option 1 (EDIT) highlighted, press **ENTER**. Scroll up until L1 is highlighted. Press the **CLEAR** button. Press **ENTER**. If you need to clear another list, scroll over to that list and repeat these instructions. Once the list is clear, you can start to enter the data.

Enter Data into the STAT LIST Editor

To access the *list editor*, press the **STAT** button (just to the left of the arrow pad). With option 1 (EDIT) highlighted, press **ENTER**. If your lists already contain data, see *Clear Lists* at the end of this document. Enter the data for the independent variable (a.k.a. the explanatory variable) in L1 and the corresponding data for the dependent variable (a.k.a. the response variable) in L2.

Calculating with Data in Lists

Press the **STAT** button and use the arrow pad to go over to **CALC** and press enter for 1-Var Stats or scroll down to another option. You will need to remember what each statistic represents (i.e. x-bar is the mean).

Creating a Scatterplot

Input the data into the STAT LIST editor (see above). Press [2nd] [Y=] to access the STAT **PLOT** editor. Press [ENTER] to edit Plot1. Scroll down and highlight the **scatter plot graph** type (first option in the first row). Press [ENTER] to select the **scatter plot graph** type. Scroll down and make sure Xlist: is set to L1 and Ylist: is set to L2. Press [GRAPH] to display the scatterplot. To get a better view of the graph, press [ZOOM][STAT] to perform a ZoomStat.

Probability with Z-scores - Normal Curve Distribution Function

1. Press the *2nd* key.
2. Press VARS
3. Press “2” for Normalcdf
4. Enter the appropriate Z-scores

NOTE: If you have a TI-83, you must enter the lower bound, upper bound, 0 for the mean, 1 for the standard deviation and close the data entry with a right parenthesis).

Probability with Z-scores - Inverse Norm Function

1. Press the *2nd* key.
2. Press VARS
3. Press “3” for InvNorm
4. Enter the area or percentage as a proportion

NOTE: If you have a TI-83, you must enter the required decimal, 0 for the mean, 1 for the standard deviation and close the data entry with “)”.

One-Proportion Z Test

- Press *stat* then choose TESTS and 5: 1-PropZTest
- Enter the values for p_0 , x , and n where x is the number of successes and n is number of trials. Both numbers must be whole numbers!
- Specify the **alternative** hypothesis (\neq , $<$, or $>$)
- If you select the “calculate” choice and press ENTER you will see the test statistic z and the P -value.
- If you select the “draw” choice and press ENTER you will see a bell-shaped curve with the proper part shaded along with the test statistic z and the P -value.

Determining Which Distribution to Use for Means

Use **the normal distribution (Z test statistic)** if both of the following conditions are true.

- a) The population standard deviation, σ , is known AND
- b) Either the distribution of sample means is approximately normal OR $n \geq 30$

Use **the T-distribution (T test statistic)** if both of the following conditions are true.

- a) The population standard deviation, σ , is NOT known AND
- b) Either the distribution of sample means is approximately normal OR $n \geq 30$

Checking Conditions (Histograms, Boxplots and Normal probability plots)

1. Enter the data: press *stat* and choose *1: Edit*. Type values into list L1.
2. Press *2nd Y=* to get into STAT PLOT. Press *Enter* or *1* to get into Plot1. Set the plot to *on*.
3. Choose the type you want histogram (the third picture) or boxplot (the fourth picture) or normal probability plot (the sixth picture)
4. Make sure the XList: L₁ (or whichever area you entered your data)
5. press *zoom* and then *9:zoomstat*
6. If an adjustment is needed on the classes of the histogram, Do the following:
 - a) Press *window* and enter your new values
 - b) Press *graph*
 - c) Press *trace* and arrows left and right to examine the new values.

Turn Diagnostics On

To turn diagnostics on, we need to access the *catalog*. Press the **2nd** button, and then press the number 0. Scroll down until you find Diagnostics On. With the arrow pointing at Diagnostics On, press **ENTER**. On your screen you should see the words *Diagnostics On* following by the flashing cursor. Press **ENTER** again. You should see the word *Done* on your screen. Now when you use your calculator to find the least squares regression equation, you'll get the correlation coefficient r and the squared coefficient of determination r^2 along with the regression equation.

Find the Least Squares Regression Line

After entering the data for the independent (explanatory) variable and the data for the dependent (response) variable in the list editor, you can use your calculator to calculate the equation of the least squares regression line. Press the **STAT** button (just to the left of the arrow pad). Use the arrow pad to scroll right to the **CALC** menu. Scroll down to the **LinReg (a + bx)** option. With the **LinReg (a + bx)** option highlighted press **ENTER**. The calculator will display **LinReg (a + bx)** on the home-screen followed by a blinking cursor. Assuming the independent (explanatory) variable data is stored in L1, press the **2nd** button and then press the number 1 button. Next press the comma button (in the row under the arrow pad). Assuming the dependent (response) variable data is stored in L2, press the **2nd** button and then press the number 2 button. Press **ENTER**.