

Graphing Calculator Help

Adapted from

www.cascadia.ctc.edu/facultyweb/instructors/ssaxton/MATH125/Graphing%20Calculator.doc

For more help, Google the model of your calculator and a key word for your desired task. (Example: TI-83 regression)

Scatter Plot (plotting a list of points)

On a **TI-81, TI-82, TI-83, or TI-84**, hit "STAT→EDIT". Input the points as "x = L1" and "y = L2". Then, go to "2nd → STAT PLOT→PLOT1". Turn "On" the scatter plot, select points in "Type", and make sure the "XLIST" and "YLIST" are correct. Now, hit "GRAPH".

On a **TI-85**, hit "STAT→EDIT→Enter→Enter". Input points as " $x_1 = ?$ " and " $y_1 = ?$ ". Hit "Graph→Range" and change window. Hit "STAT→DRAW→SCAT".

On a **TI-86**, hit "2nd → STAT→Edit". Input the points as "x = xStat", "y = yStat", and "1=fStat". Then, go to "2nd → STAT→PLOT→PLOT1". Turn "On" the scatter plot, select points in "Type", and make sure the "Xlist Name" and "Ylist Name" are correct. Now, hit "Graph→F5".

Notes: You will need to change your viewing window to contain the data points. To turn "On" the scatter plots, select the type of graph, the mark for the points, etc. you just position the cursor and hit enter. To clear the data from a list, position the cursor on the name of the list (e.g. L1), press the CLEAR button, then press the down arrow key.

2. Line of Best Fit or Linear Regression

You need to create a scatter plot first (see above).

On a **TI-81, TI-82, TI-83, or TI-84**, hit "STAT→CALC→LinReg(ax+b) → Enter".

On a **TI-85**, hit "STAT→CALC→Enter→Enter→LINR". On a **TI-86**, hit "STAT→CALC→LinR → Enter".

This gives you the equation in $y=a+bx$ form. You should also see the correlation coefficient, r . If you don't, you need to activate DiagnosticOn (or its equivalent), which is probably found with the CATALOG button.

To graph this line, enter it in the usual way and GRAPH.

(There is a way to have the calculator copy the equation for you, if you wish. On the TI-84, hit VARS→Statistics→EQ→RegEQ→Enter)

3. Other Regressions

You need to create a scatter plot first (see above).

On a **TI-81, TI-82, TI-83, or TI-84**, hit "STAT→ CALC→ (chosed from list below) → Enter".

On a **TI-85**, hit "STAT→ CALC→ Enter→ Enter→ (chosed from list below)".

On a **TI-86**, hit "STAT→ CALC→ (chosed from list below) → Enter".

Choose the type of regression from this list:

	TI-81, TI-82, TI-83, or TI-84	TI-85 or TI-86
Quadratic	QuadReg	P2Reg
Cubic	CubicReg	P3 Reg
Quartic	QuartReg	P4Reg
Log	LnReg	LnR
Exponential	ExpReg	ExpR
Power	PwrReg	PwrR
Logistic	Logistic	LgstR

To graph regression function, enter it in the usual way and GRAPH.

2. Line of best fit or Linear Regression

You need to create a scatter plot first (see above). On a **TI-81, TI-82, TI-83, or TI-84**, hit "STAT→ CALC→ LinReg(ax+b) → Enter". This gives you the equation in $y=ax+b$ form. Now, graph this equation. On a **TI-85**, hit "STAT→ CALC→ Enter→ Enter→ LINR". On a **TI-86**, hit "STAT→ CALC→ LinR → Enter". This gives you the equation in $y=a+bx$ form. Now, graph this equation.

3. Other Regressions

You need to create a scatter plot first (see above). On a **TI-81, TI-82, TI-83, or TI-84**, hit "STAT→ CALC→ "fill in regression" → Enter". Now, graph this equation. On a **TI-85**, hit "STAT→ CALC→ Enter→ Enter→ "fill in regression"". On a **TI-86**, hit "STAT→ CALC→ "fill in regression" → Enter". Now, graph this equation.

Fill in regression:

	TI-81, TI-82, TI-83, or TI-84	TI-85 or TI-86
Quadratic	QuadReg	P2Reg
Cubic	CubicReg	P3 Reg
Quartic	QuartReg	P4Reg
Log	LnReg	LnR
Exponential	ExpReg	ExpR
Power	PwrReg	PwrR
Logistic	Logistic	LgstR

4. Intersect Finder

On a **TI-81, TI-82, TI-83, or TI-84**, the intersect finder can be found in the "CALC" fields. On a **TI-85 or TI-86**, the intersect finder can be found in the "GRAPH → MATH" fields (you will have to use the "More" button and select the "isect" function). The calculator will ask you if the first curve is one of the equations graphed. Hit "Enter". The calculator will ask you if the second curve is the other curve graphed. Hit "Enter". The calculator will ask for a "Guess". Use the left and right arrow buttons to move the cursor close to the intersection and hit "Enter".

5. **Fractional Answer** (Do **not** delete any of the information already in your calculator for the problem! The x and y coordinates are stored in the calculator.)

On a **TI-81, TI-82, TI-83, or TI-84**, you need to use "X,T,θ, n → Math → 1 → Enter" for the x coordinate and "alpha → y → Math → 1 → Enter" for the y coordinate. You must start these in the home screen. On a **TI-85 or TI-86**, you need to use "x-Var → 2nd Catlg-Vars → F1 → ▸ Frac" for the x coordinate and "2nd alpha → y → 2nd Catlg-Vars → F1 → ▸ Frac" for the y coordinate. You must start these in the home screen. Note: (TI-86 only) it might be easier to set this new function up as one of your custom field first, and then utilize the function as needed.

6. **Maximum or Minimum Finder**

On a **TI-81, TI-82, TI-83, or TI-84**, the maximum/minimum finder can be found in the "CALC" fields. On a **TI-85 or TI-86**, the maximum/minimum finder can be found in the "GRAPH → MATH" fields (you will have to use the "More" button and select the "fmax" or "fmin" function). The calculator will ask you for a left bound. Move the cursor along the curve to a spot on the graph to the left of the maximum/minimum point and hit "Enter". The calculator will ask you for a right bound. Move the cursor along the curve to a spot on the graph to the right of the maximum/minimum point and hit "Enter". The calculator will ask for a "Guess". Use the left and right arrow buttons to move the cursor close to the maximum/minimum point and hit "Enter".

7. **Zero or Root Finder**

On a **TI-81, TI-82, TI-83, or TI-84**, the zero finder can be found in the "CALC" fields. On a **TI-85 or TI-86**, the root finder can be found in the "GRAPH → MATH" fields (you will have to use the "More" button and select the "MATH" function). The calculator will ask you for a left bound. Move the cursor along the curve to a spot on the graph to the left of the zero/root and hit "Enter". The calculator will ask you for a right bound. Move the cursor along the curve to a spot on the graph to the right of the zero/root and hit "Enter". The calculator will ask for a "Guess". Use the left and right arrow buttons to move the cursor close to the zero/root and hit "Enter".