Curve Fitting with Graphing Calculators

This is written for the TI-83 and TI-84 graphing calculators (all versions) since that is what most students will have. The other TI graphing calculators and Casio graphing calculators have mostly the same steps, but the menus are slightly different.

1. Enter data
   a. Push **STAT** button
   b. Choose **Edit…**.
   c. Use the clear key to delete all the data currently in the lists by highlighting the column name and hitting the **CLEAR** key followed by **ENTER**. (Note: by default there are six lists)
   d. Enter the data for the x-axis in the first column
   e. Enter the data for the y-axis in the second column
   f. *Make sure that there is the same amount of data in both columns!*

2. Curve fit (by default the x data is in list L_1 and the y data is in list L_2)
   a. Push **STAT** button again
   b. Push the right arrow to get to the **CALC** menu
   c. Select the type of regression you would like to perform
   d. Push **ENTER** once or twice depending on your calculator

Type of Regression	Written Function	Name in Calc Menu	Constraints
Linear	$y = ax + b$	LinReg(ax+b)	
Quadratic	$y = ax^2 + bx + c$	QuadReg	At least 3 pts
Cubic	$y = ax^3 + bx^2 + cx + d$	CubicReg	At least 4 pts
Quartic	$y = ax^4 + bx^3 + cx^2 + dx + e$	QuartReg	At least 5 pts
Linear	$y = a + bx$	LinReg(a+bx)	
Natural log	$y = a + b \ln x$	LnReg	
Exponential	$y = a\,(b)^x$	ExpReg	
Power	$y = ax^b$	PwrReg	
Logistic	$y = c / (1 + a\,e^{-bx})$	Logistic	
Sin		SinReg	At least 4 pts; At least 2 pts per cycle; Note: angle is always in radians

3. Graphing
   a. Push **Y=** button to open Y= editor
   b. Clear all functions in the Y= editor
   c. Turn off all the Plots by moving to cursor to highlighted plots and pushing enter
   d. Push **2nd** and **STAT PLOT**

e. Select **Plot1…** from the menu
f. Turn on Plot1 and choose the type of graph your want (usually the scatter plot)
g. Push **ZOOM** and **ZoomStat** to see the graph of the data
h. To see the curve fit
    i. Select the type of fit from the **STAT → CALC** menu
    ii. Specify the x-axis data (push **2nd L1**)
    iii. Push comma
    iv. Specify the y-axis data (push **2nd L2**)
    v. Push comma
    vi. Specify the function name of your regression (push **VARS, → Y-VARS**, **Function…, Y$_1$**)
    vii. Your home screen should have the line "*Your*Reg L$_1$, L$_2$, Y$_1$".
    viii. Push **ENTER**
i. Push **GRAPH**