

Regression Analysis on a TI-82, 83, or 84 Graphing Calculator

- Clear Old Data [Omit Step 1 if there is no old data in L1 and/or L2.]
STAT 1:Edit ▲ (highlight L1) Clear Enter ► ▲ (highlight L2) Clear Enter ◀
- Enter Data
STAT 1:Edit (Enter input (x) values in L1 and output (y) values in L2.) Make sure every entry is correct.

Example:

Average annual tuition and fees for in-state students at public 4-year colleges for selected years are shown in the table. Using $x = 0$ for 1990, enter the x-values (years since 1990) in L1 and the y-values (tuition and fees) in L2.

Year	Years since 1990 (x) L1	Tuition & Fees (y) L2
1990	0	2035
1994	4	2820
1996	6	3151
1998	8	3486
2000	10	3774

- Create a Scatter Plot of the Data

y = CLEAR (Clear out or turn off any equations.)

2nd y = 1:Plot 1 (to select Plot 1) Enter (to turn Plot 1 on)

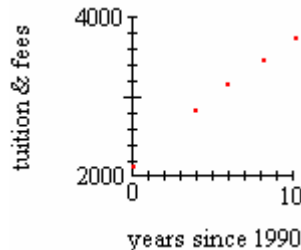
ZOOM 9:ZoomStat

- Run Regression

STAT ► CALC

select appropriate regression LinReg (ax + b) QuadReg CubicReg QuartReg etc.

Enter (to execute regression analysis)



LinReg

$y = ax + b$

$a = 174.3986486$

$b = 2076.567568$

$r^2 = .9961354296$

$r = .9980658443$

Record the model as an equation (you may round to three decimal places).

$y = 174.399x + 2076.567$

If given, record the correlation coefficient, r (do not round).

$r = .9980658443$ (We will not be using r^2 , the correlation of determination.)

Tell the goodness of fit (The closer r is to 1 or -1, the better the fit).

Very good fit

TI-83 and TI-84 users

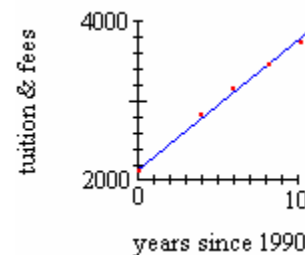
If you do not see r and r^2 , do the following: Press 2nd 0 (catalog) and scroll down until you see DiagnosticOn. Hit enter to select that command and then hit enter again to execute it. Run the regression again. You should now see r and r^2 .

- Graph the Model with the Data

y = VARS 5:Statistics ►► RegEQ GRAPH

Create an accurate sketch of the model with the data.

If the type of regression you ran does not give a correlation coefficient, you can access the goodness of fit by examining the graph of the model with the data. The more data points the model goes through or touches, the better the fit.



- To Find the Output for a Specified Input

2nd Graph (Table) Enter appropriate input.

For example, by plugging in 18 we can get the projected cost of tuition and fees in 2008. **$y(18) = \$5215.70$**

- Turn the Plotter Off

2nd y = 4 Enter (It should say PlotsOff Done.)