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Tutorial on Linear Regression Lines:

TI – 84 Calculator Series and Under
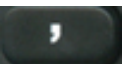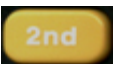
To my knowledge, the TI -84 calculators and under are all practically the same, just a different model each time. What I mean by "under" are the TI models sugh as : TI – 82, TI – 83, and TI – 83 plus and so on. **This guide is intended to show you step by step how to set up a plot points, graph them, calculate a linear regression line, and graph the line.**

The first thing to do is to make sure that your lists and your equations are clear. To begin with:

Start by pressing `STAT` `4`

```
EDIT CALC TESTS
1:Edit…
2:SortA(
3:SortD(
4:ClrList
5:SetUpEditor
```

Then press `2nd` `1` `,` `2nd` `2` `ENTER`

You should see:
```
ClrList L₁,L₂
              Done
```
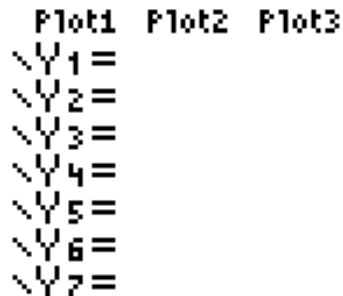
The next thing to do is clear out any existing equations. To do this

Press `Y=` `CLEAR`

Your screen should look like this:
```
Plot1  Plot2  Plot3
\Y1=
\Y2=
\Y3=
\Y4=
\Y5=
\Y6=
\Y7=
```

The next step is to plug in your x values and y values. To do that, you need to be sure that your x values go in L1 and your y values go in L2.

Press STAT 1 to edit:

EDIT CALC TESTS
1:Edit…
2:SortA(
3:SortD(
4:ClrList
5:SetUpEditor

and then type in your x and y values.

L1	L2	L3	2
10	15	------	
20	20		
30	22		
40	27		
50	33		
60	45		

L2(7) =

To plot the points and graph them

Press 2nd Y= to get the Stat Plot:

STAT PLOTS
1:Plot1…Off
    L1   L2   □
2:Plot2…Off
    L1   L2   □
3:Plot3…Off
    L1   L2   □
4↓PlotsOff

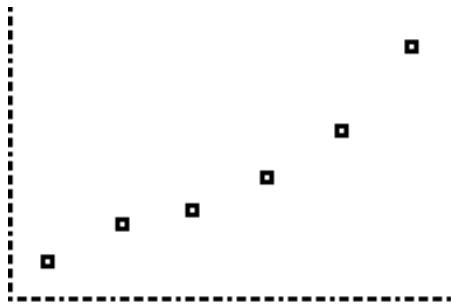press 1 ENTER to turn on the plot

Plot1 Plot2 Plot3
On Off
Type:
Xlist:L1
Ylist:L2
Mark: □ + ·

To graph the scatter plot:

Press [ZOOM] [9]   for ZoomStat:

and your graph should look like this:

```
ZOOM MEMORY
4↑ZDecimal
5:ZSquare
6:ZStandard
7:ZTrig
8:ZInteger
9:ZoomStat
0:ZoomFit
```

To calculate the linear regression line or otherwise known as the best fit line.

Press [STAT] [▶] [4]   for Lin Reg

```
EDIT CALC TESTS
1:1-Var Stats
2:2-Var Stats
3:Med-Med
4:LinReg(ax+b)
5:QuadReg
6:CubicReg
7↓QuartReg
```

Then press [2nd] [1] [,] [2nd] [2]

for: LinReg(ax+b) L₁, L₂   and press [ENTER]
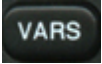
```
LinReg
 y=ax+b
 a=.5542857143
 b=7.6
 r²=.9302026693
 r=.9644701495
```

Note that the number for a is your slope and the number for b is your y intercept.

**Note that when you do a different set of plots, you must repeat the calculation step of the linear regression line; otherwise it will use a previous linear regression line.

To plot the linear regression line:

Press [Y=] [VARS] [5]   for:

```
VARS Y-VARS
1:Window...
2:Zoom...
3:GDB...
4:Picture...
5:Statistics...
6:Table...
7:String...
```
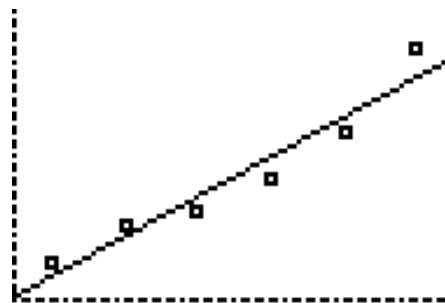
Press [▶] [▶] [1]   for:

[ENTER]

```
XY  Σ  EQ  TEST  PTS
1:RegEQ
2:a
3:b
4:c
5:d
6:e
7↓r
```

and press

to place the equation in the y =

```
Plot1  Plot2  Plot3
\Y1■.55428571428
571X+7.6
\Y2=
\Y3=
\Y4=
\Y5=
\Y6=
```

Then press [GRAPH] to see your

scatter plot and linear regression line:

** Be sure to clear and reset your calculator's window settings with zoom 6 and clear out your list, equations, and home screen when you're finished.