

Calculator Steps to Graphing Scatter Plots on TI-84 Plus:

To enter data into a list (L_1): [List 1 data should be your x-values or your independent variable]

STAT **ENTER** "1: Edit"

Enter data into L_1 , press **ENTER** after entering a piece of data.

Next, arrow over to the next column, L_2 . [List 2 data should be your y-values or your dependent variable]

Enter data into L_2 , press **ENTER** after entering a piece of data.

If there is old data in the list, To clear a list:
Arrow up to highlight the list-(example L_1) **CLEAR** **ENTER**

To create a Scatter Plot after entering data into L_1 and L_2 :

2nd **Y =** "Stat Plot" **ENTER** **ENTER**

Make sure the graph screen looks like the picture below. Make sure that "Plot 1" is highlighted and "On". Make sure the "Type" is the type highlighted below. It is really important that XList: L_1 and YList: L_2 .



Next, hit **GRAPH** **ZOOM** **9** "ZoomStat"

Hit **TRACE** and then you can right and left arrow through the plot.

Find the TREND/LINE OF BEST FIT FROM THE DATA YOU ENTERED:

STAT

Arrow over to "CALC" then

4

"LinReg(ax+b)"

Make sure XList: L_1 and YList: L_2 . Arrow down to "Calculate" and hit

ENTER

When you get the answer:

$$y = ax + b,$$

a = # a is your SLOPE/RATE OF CHANGE

b = # b is your Y-intercept.

Find Correlation Coefficient of Scatterplot/line of best Fit:

Diagnostics on your calculator must be turned ON!

How to turn on Diagnostics:

- 1) Press **MODE**
- 2) Use the arrow keys to highlight Stat Diagnostics ON and press

ENTER

(you will have to scroll down to find "Stat Diagnostics")

```
MATHPRINT CLASSIC
NORMAL SCI ENG
FLOAT 0 1 2 3 4 5 6 7 8 9
RADIAN DEGREE
FUNCTION PARAMETRIC POLAR SEQ
THICK DOT-THICK THIN DOT-THIN
SEQUENTIAL SIMUL
REAL a+bi re^(θi)
FULL HORIZONTAL GRAPH-TABLE
FRACTIONTYPE: n/d Un/d
ANSWERS: AUTO DEC FRAC-APPROX
GO TO 2ND FORMAT GRAPH: NO YES
STAT DIAGNOSTICS: OFF ON
STAT WIZARDS: ON OFF
SET CLOCK 02/03/13 3:32AM
```

To Calculate Correlation Coefficient after you've turned on the Stat Diagnostics you calculate the "LinReg" (Linear Regression) using steps on the top of this page.

Correlation Coefficient-determination is a statistical measure of how well the regression line approximates the real data points. An R^2 of 1.0 indicates that the regression line perfectly fits the data.

r^2 = Correlation coefficient

```
LinReg
y=ax+b
a=.8867924528
b=13.65566038
r2=.9609047904
r=.9802575123
```

Calculator Steps to Graphing Box Plots on TI-84 Plus:

To enter data into a list (L_1): [List 1 data should be your x-values or your independent variable]

STAT **ENTER** "1: Edit"

Enter data into L_1 , press **ENTER** after entering a piece of data.

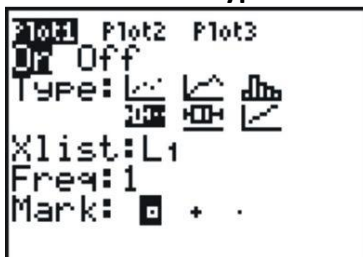
If there is old data in the list, To clear a list:

Arrow up to highlight the list- (example L_1) **CLEAR** **ENTER**

To create a Box Plot after entering data into L_1 :

2nd **Y =** "Stat Plot" **ENTER** **ENTER**

Make sure the graph screen looks like the picture below. Make sure that "Plot 1" is highlighted and "On". Make sure the "Type" is the type highlighted below. It is really important that Xlist: L_1



Next, hit **GRAPH** **ZOOM** **9** "ZoomStat"

Hit **TRACE** and then you can right and left arrow through the plot.

Calculator Steps to Graphing Histograms on TI-84 Plus:

To enter data into a list (L_1): [List 1 data should be your x-values or your independent variable]

STAT **ENTER** "1: Edit"

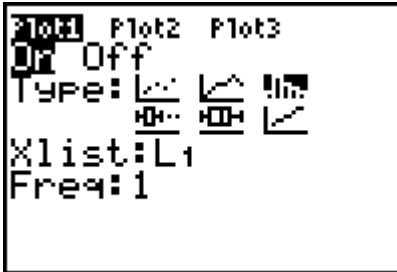
Enter data into L_1 , press **ENTER** after entering a piece of data.

If there is old data in the list, To clear a list:
Arrow up to highlight the list- (example L_1) **CLEAR** **ENTER**

To create a Histogram after entering data into L_1 :

2nd **Y =** "Stat Plot" **ENTER** **ENTER**

Make sure the graph screen looks like the picture below. Make sure that "Plot 1" is highlighted and "On".
Make sure the "Type" is the type highlighted below. It is really important that XList: L_1



Next, hit **GRAPH** **ZOOM** **9** "ZoomStat"

Hit **TRACE** and then you can right and left arrow through the histogram.

If you want to change the height and width of the histogram you need to go to **WINDOW** and change the "XSc1=". The higher the scale the wider the bars, the lower the scale, the skinnier the bars.

Calculator Steps to Calculate Summary Statistics:

To enter data into a list (L_1): [List 1 data should be your x-values or your independent variable]

STAT **ENTER** "1: Edit"

Enter data into L_1 , press **ENTER** after entering a piece of data.

If there is old data in the list, To clear a list:
Arrow up to highlight the list- (example L_1) **CLEAR** **ENTER**

Next, hit **STAT** arrow over to "Calc" and hit **1** "1-Var Stats" and press **ENTER**

Next your screen should like the image below. Make sure List: says L_1 since that is where the data was entered. If you enter the data in L_2 then you must change List to L_2 .

[You can change the List by **2nd** **1** for L_1 or **2** for L_2 .]

```

1-Var Stats
List:L1
FreqList:
Calculate
    
```

Arrow down to "Calculate" and press **ENTER**

```

1-Var Stats
x̄=3
Σx=15
Σx²=55
Sx=1.58113883
σx=1.414213562
↓n=5
    
```

\bar{x} = Mean/ Average
 Sx = sample standard deviation
 σx = population standard deviation
 n = total number of data
 $minX$ = Minimum value in the data
 Q_1 = Lower Quartile
 Med = Median of data
 Q_3 = Upper Quartile
 $MaxX$ = Maximume Value

```

1-Var Stats
↑n=15
minX=2.5
Q1=8
Med=10.5
Q3=11.5
maxX=15
    
```

Calculator Steps to Calculate Exponential Equation from Table:

To enter data into a list (L_1): [List 1 data should be your x-values or your independent variable]

STAT **ENTER** "1: Edit"

Enter data into L_1 , press **ENTER** after entering a piece of data.

Next, arrow over to the next column, L_2 . [List 2 data should be your y-values or your dependent variable]

Enter data into L_2 , press **ENTER** after entering a piece of data.

Next, hit **STAT** arrow over to "Calc" and hit **0** "ExpReg" and press **ENTER**

Next your screen should like the image below. Make sure XList: says L_1 since that is the independent variable and that YList: says L_2 since that is the dependent variable.

```
ExpReg
Xlist:L1
Ylist:L2
FreqList:
Store RegEQ:Y2
Calculate
```

[You can change the List by **2nd** **1** for L_1 or **2** for L_2 .]

Arrow down to "Calculate" and press **ENTER**

```
ExpReg
y=a*b^x
a=16
b=.25
```

Calculator Steps to Calculate Linear Equation from Table:

To enter data into a list (L_1): [List 1 data should be your x-values or your independent variable]

STAT **ENTER** "1: Edit"

Enter data into L_1 , press **ENTER** after entering a piece of data.

Next, arrow over to the next column, L_2 . [List 2 data should be your y-values or your dependent variable]

Enter data into L_2 , press **ENTER** after entering a piece of data.

Next, hit **STAT** arrow over to "**Calc**" and hit **0** "LinReg(ax+b)" and press **ENTER**

Next your screen should like the image below. Make sure XList: says L_1 since that is the independent variable and that YList: says L_2 since that is the dependent variable.

[You can change the List by **2nd** **1** for L_1 or **2** for L_2 .]

```
LinReg(ax+b)
Xlist:L1
Ylist:L2
FreqList:
Store RegEQ:
Calculate
```

Arrow down to "Calculate" and press **ENTER**

```
LinReg
y=ax+b
a=.8867924528
b=13.65566038
```

a = Slope
 b = Y-intercept

Calculator Steps to Calculate Quadratic Equation from Table:

To enter data into a list (L_1): [List 1 data should be your x-values or your independent variable]

STAT **ENTER** "1: Edit"

Enter data into L_1 , press **ENTER** after entering a piece of data.

Next, arrow over to the next column, L_2 . [List 2 data should be your y-values or your dependent variable]

Enter data into L_2 , press **ENTER** after entering a piece of data.

Next, hit **STAT** arrow over to "**Calc**" and hit **5** "QuadReg" and press **ENTER**

Next your screen should like the image below. Make sure XList: says L_1 since that is the independent variable and that YList: says L_2 since that is the dependent variable.

[You can change the List by **2nd** **1** for L_1 or **2** for L_2 .]

Arrow down to "Calculate" and press **ENTER**

```
QuadReg
y=ax2+bx+c
a=-.1627947075
b=1.047507496
c=1.723625741
█
```

a = leading coefficient
 b = coefficient of the x-term
 c = Constant terms

Graphing Quadratic Equations

TO GRAPH ANY QUADRATIC EQUATION:

- 1) Equation must be in STANDARD FORM: $ax^2 + bx + c = 0$ (must be set = to 0)
- 2) Type equation into and then press
- 3) Go to Press Zoom 6 to graph on a standard screen.

HINT: If you cannot see the graph try:

- Zoom 3 will zoom out, Enter
- Change the window: We usually change Y-Max or X-Max

TO FIND THE VERTEX:

- 1) Graph the equation and decide on a MAXIMUM or MINIMUM.
- 2) then press (CALC), Maximum (4) or Minimum (3)
 1. Left Bound? - Move cursor to the left side of the parabola, ENTER
 2. Right Bound? - Move cursor to the right side of the parabola, ENTER
 3. Guess? - Move the cursor to the vertex (center), ENTER

$$\text{VERTEX} = (x, y)$$

TO FIND THE AXIS OF SYMMETRY:

1. The axis of symmetry is the x-coordinate of the vertex.
2. Write the equation as: $x = \#$

$$\begin{array}{l} \text{Vertex} = (x, y) \\ \searrow \\ \text{AXIS OF SYMMETRY: } x = \underline{\quad} \end{array}$$

TO FIND THE X-INTERCEPTS (3 other names: SOLUTIONS, ROOTS, ZEROS):

1. Y1 = quadratic equation
Y2 = 0 (this graphs as the line $y = 0$ which is the same as the x-axis)
2. Graph the equation and determine how many intercepts the graph has (usually 2 roots).
3. 2ND CALC, Intersect (5)
4. First Curve? - ENTER
5. Second Curve? - ENTER
6. Guess? - Move the cursor to the left or right...wherever you think the x-intercept is located, ENTER
7. Repeat this process (Steps 3-6) to find the second x-intercept, but remember to move your cursor to the second intersection this time.

X-INTERCEPTS: $(x, 0)$ and $(x, 0)$

TO FIND THE Y-INTERCEPT: write as $(0, y)$

1. There are no calculator steps!!

2. The y-intercept is the “c” term or constant of the equation. $ax^2 + bx + \mathbf{C}$