

Graphing Calculator Instructions

Finding a Linear Regression Equation

1. Create L1 and L2 from the given information: (2, 6), (4, 5), (5, 3), (6, 1), (8, 0).
2. Graph a scatterplot of the data.
3. Press **STAT**, move the cursor to CALC, and then select #4.

```

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

```

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

4. Tell the calculator which lists to use to create the linear regression equation and where to paste the equation once it is calculated.

Press **2nd****1**, **2nd****2**, **VAR** **▶** **ENTER** **ENTER**.

```

LinReg(ax+b) L1,
L2, Y1
    
```

```

LinReg
y=ax+b
a=-1.1
b=8.5
r²=.9307692308
r=-.9647638212
    
```

5. If you do not see r^2 , then turn on your diagnostics by going to the catalog: **2nd****CATALOG****x-1** then **☑** until you reach DIAGNOSTICON. Press **ENTER** **ENTER**. Then you can press **2nd****ENTER** **2nd****ENTER** **ENTER** to calculate the regression equation again with the diagnostics on. r is called the correlation coefficient, and it represents the strength of the linear relationship of the data. The sign of r indicates whether the data has a positive or negative correlation.

```

Plot1 Plot2 Plot3
\Y1=-1.1X+8.5
\Y2=
\Y3=
\Y4=
\Y5=
\Y6=
\Y7=
    
```

6. The equation is pasted in the **Y=** screen; press **GRAPH** to view the line of regression.

7. Now it is your turn to find a linear regression equation.

x	y
2	5
4	7
8	11
9	14
13	19
15	22

Challenge: Compare the Regression Equation to the Median-Median Line

8. Do you know the relationship of the following terms to analyzing data? If not, look them up in a reliable source.

- Interpolate
- Extrapolate
- Outlier