



Objective: Linear regression with scatter plots

Homework ST-6 – NYA p.35 #1, 3 – 5, p.352 #5, 7, 8

Do Now: Enter the following data into lists. They make up coordinates.

x-values in L1	4	4	8	12	12	12	16	16	16	18	20
y-values in L2	20	30	30	40	50	60	60	70	90	90	110

Exam Prep: What is the value of the slope of the line: $y = \frac{1}{3}x + 10$

- A) 1/3 B) 3 C) x D) 10



Trend lines are great estimations... but regression lines are better because they are not estimates.

Please select “DiagnosticsOn” by going to the catalog on your TI (2nd 0). You only need to do this once.

Let's make a linear regression.

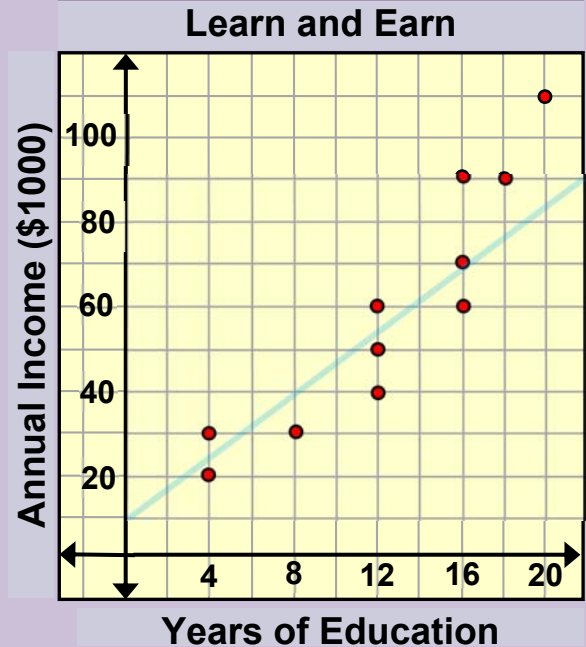
1. Enter data into lists (x in L₁ and y in L₂)
2. Press **STAT** and pick “LinReg (ax + b)” from the **CALC** menu.

You will see LinReg and type the lists separated by commas (LinReg L₁, L₂).

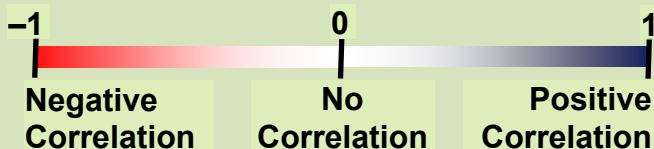
You get the line in “y = mx + b” form. a = slope and b = y-intercept.



```
LinReg
y=ax+b
a=170.9512756
b=597.0806521
```



Correlation Coefficient



The “r” value “r” correlation of the data. It is the strength of the connection, 1 or -1 being high and 0 being low.

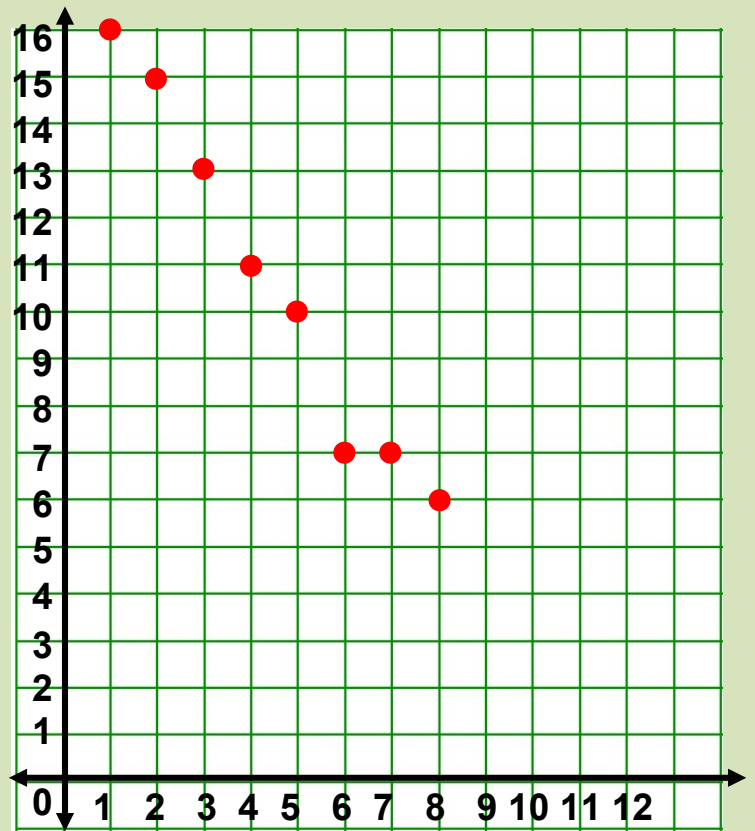
```
LinReg
y=ax+b
a=170.9512756
b=597.0806521
r²=.7390670642
r=.8596900978
```

DVD Sales

Week x	Sales (millions) y
1	16
2	15
3	13
4	11
5	10
6	7
7	7
8	6

Find the line of regression and the correlation.

Week 10 sales?



Pets Owned and Owner Age

Owner Age x	Pets Owned y
34	4
12	3
21	2
53	2
70	1
11	3
30	0
35	4
46	6
15	2

Find the line of regression and the correlation.

