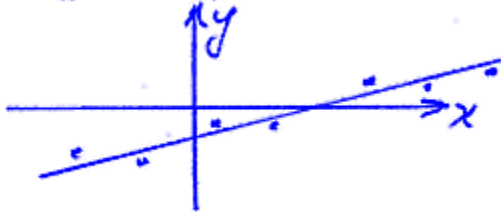




Unit 8: Lesson 02

Scatter plots and linear regression on the calculator

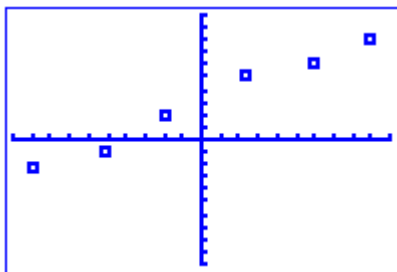
Data coming from experiments is typically not exact. Suppose we have the following (x, y) data points that don't exactly line up in a straight line. What line $(y = mx + b)$ would best-fit these points?



This very complex problem is easily and **exactly** solved on a graphing calculator. See Calculator **Appendix M** for how to enter the points and produce a scatter plot. **Appendix N** shows how to produce a linear regression (best-fit line) with these points.

Example 1: Enter the following points into the calculator using **Stat | Edit**, enable a “scatter-plot” with **2nd | Stat Plot**, and then **Graph**.

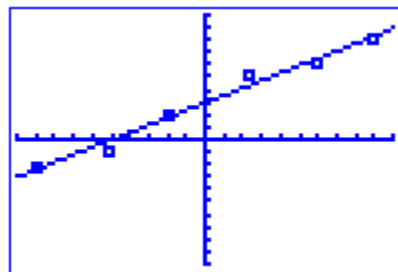
x	y
-9.0	-2.1
-5.2	-1.0
-2.0	2.04
2.3	5.0
6.0	6.11
8.9	8.2



Example 2: Perform a linear regression on these same points and give the equation of the resulting line.

```

Plot2 Plot3
\Y1= .59438116823
502X+2.942603138
6275
\Y2=
\Y3=
\Y4=
\Y5=
  
```



Assignment: In each of the following problems, perform a linear regression on the provided data and show the equation of the best-fit line along with a sketch of the line and scatter-plot.

1.

x	y
-4.0	9.0
-1.1	4.2
2.0	-0.5
1.9	-2.0
6.0	-5.0
5.8	-7.0

2.

x	y
-70	-40
-29	-52
28	-32
60	-30
89	-25

3.

x	y
-8.0	4.0
-1.0	5.2
2.5	6.4
7.0	7.3

4.

x	y
3	7
9	-7