

Linear Regression

Weekly Sales Data Based on Marketing Research

Price per box	Boxes sold
\$2.40	38,320
\$2.60	33,710
\$2.80	28,280
\$3.00	26,550
\$3.20	25,530
\$3.40	22,170
\$3.60	18,260

Enter the Data:

Press **STAT**

```

2001) CALC TESTS
1) Edit...
2) SortA(
3) SortD(
4) ClrList
5) SetUpEditor
    
```

Arrow right to **Edit**

```

L1      L2      L3      1
-----
L1(1) =
    
```

Enter x-coordinates in L1 and
y-coordinates in L2

```

L1      L2      L3      2
-----
2.6     33710
2.8     28280
3       26550
3.2     25530
3.4     22170
3.6     18260
-----
L2(8) =
    
```

Plot the Data:

Press **2nd Y=**

```

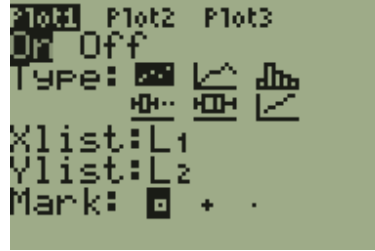
STAT PLOTS
1) Plot1...Off
   L1 L2
2) Plot2...Off
   L1 L2
3) Plot3...Off
   L1 L2
4) PlotsOff
    
```

Press **Enter** to get options

Press **Enter** to turn Plot1 On

Press **ZOOM**→**ZoomStat**

Press **GRAPH**



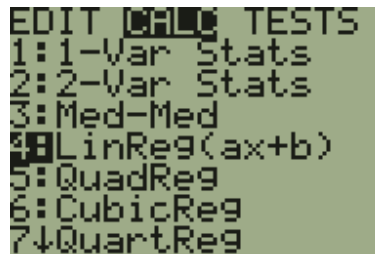
Calculate the Regression Line

Press **STAT**

Arrow right to **Calc**

Arrow down to **4:LinReg**

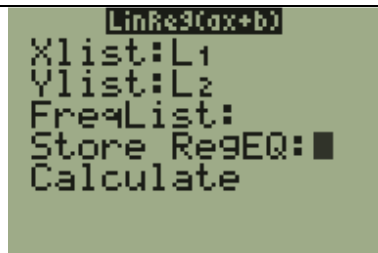
Press **Enter**



What you see at this point depends on your calculator...

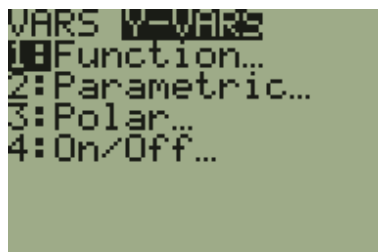
TI-84+

Arrow down to
Store RegEQ:



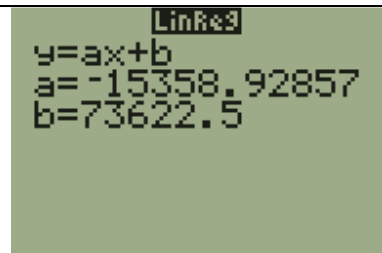
Press **VARS**
Arrow right to **Y-Vars**

Press **Enter** to select
1:Function



TI-83 (and some TI-84)

Press **Enter** again.
You should see this screen.

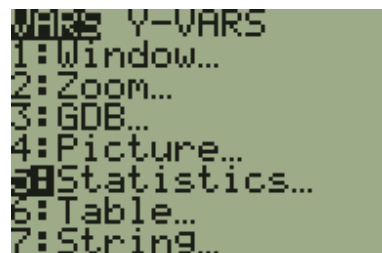


Store the equation in Y1:

Press **Y=**
Press **VARS**

Arrow down to
5:Statistics

Press **Enter**



Press **Enter** again to select Y1

```
LinReg(ax+b)
Xlist:L1
Ylist:L2
FreqList:
Store RegEQ:Y1
Calculate
```

Press **Enter** twice

You should see this screen.

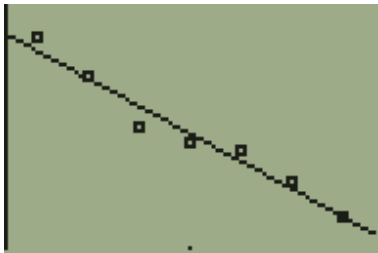
```
LinReg
y=ax+b
a=-15358.92857
b=73622.5
```

Press **Y=**

The regression equation is in Y1.

```
Plot1 Plot2 Plot3
Y1 -15358.92857
Y2 =
Y3 =
Y4 =
Y5 =
Y6 =
Y7 =
```

Press **GRAPH**



Arrow right to **EQ**

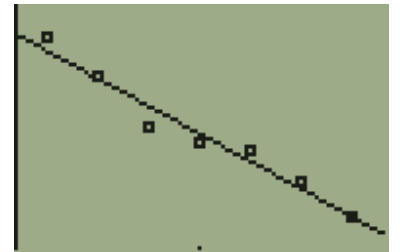
Press **Enter** to select **1:RegEQ**

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

The regression equation is in Y1.

```
Plot1 Plot2 Plot3
Y1 -15358.92857
Y2 =
Y3 =
Y4 =
Y5 =
Y6 =
Y7 =
```

Press **GRAPH**



You can now use the regression equation to answer questions.