# Linear Regression with the TI-*n*Spire

## 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**
From the Home Screen:
Select **1: New Document**
Arrow down to **4: Add Lists & Spreadsheet**

1:Add Calculator
2:Add Graphs
3:Add Geometry
4:Add Lists & Spreadsheet
5:Add Data & Statistics
6:Add Notes
7:Add Vernier DataQuest™
Press menu

Arrow up to the top box labeled "A".
Title the columns.
> *Note: Spaces are not allowed in the title. Use "price_per_box" rather than "price per box".*

Enter the data in the appropriate columns.

| | A price | B sold | C | D |
|---|---|---|---|---|
| = | | | | |
| 4 | 3 | 26550 | | |
| 5 | 3.2 | 25530 | | |
| 6 | 3.4 | 22170 | | |
| 7 | 3.6 | 18260 | | |
| 8 | | | | |

*Unsaved*   1.1

B8
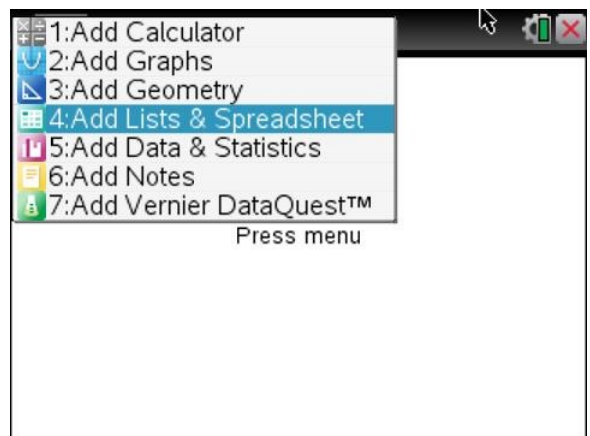
## Plot the points

Insert a new page for the scatterplot:
Press **Doc**
Arrow down to **4: Insert**
Arrow down to **7: Data & Statistics**

You should see a screen like this…
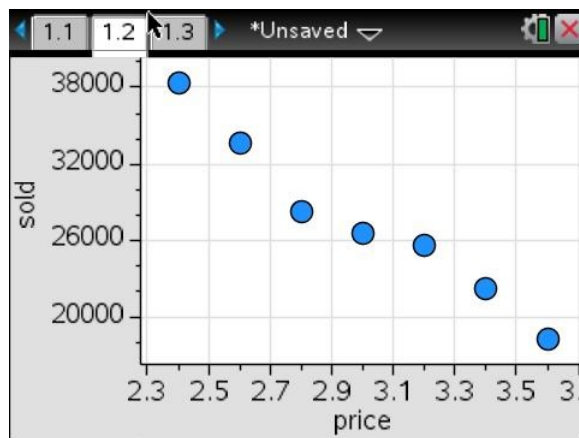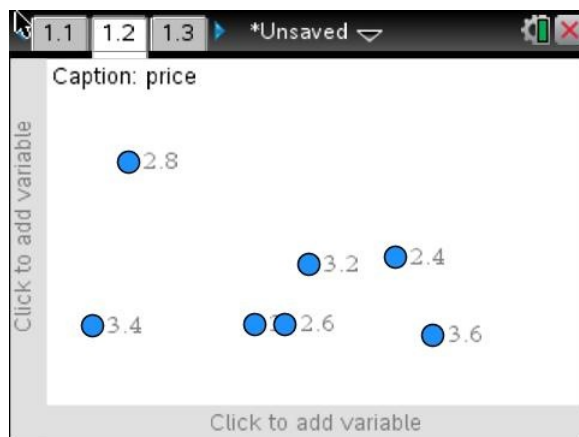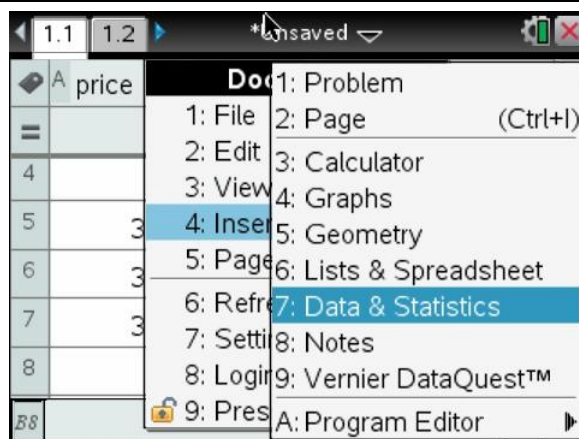
Order the points into a scatterplot:
Move the arrow down to and click the center bottom of the screen ("Click to add variable")

Select **price**

Move the arrow over to and click the center of the left of the screen ("Click to add variable").

Select **sold**
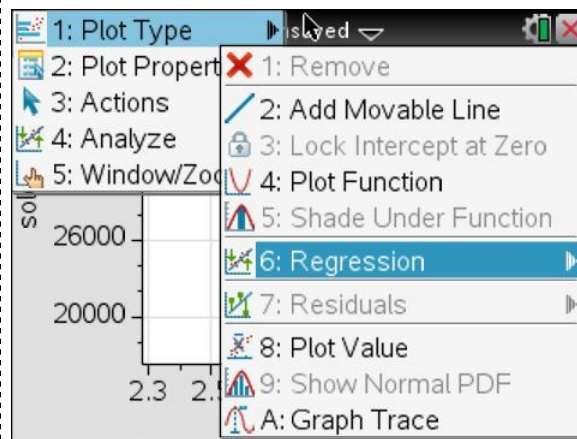
Your scatterplot should be complete and look like this…
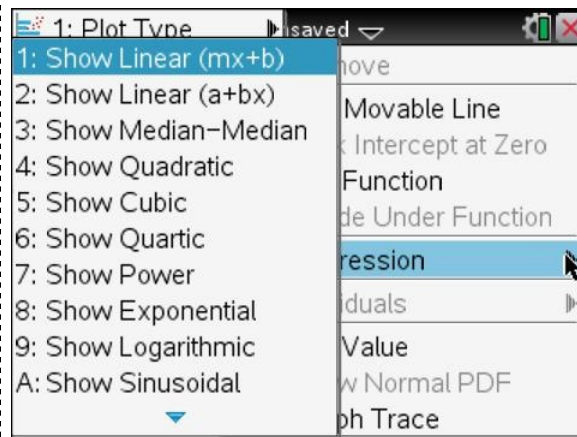
**Create the regression line**

Press **Menu**
Arrow down to **4: Analyze**
Arrow down to **6: Regression**

| | | |
|---|---|---|
| 1: Plot Type | | Displayed |
| 2: Plot Propert | X 1: Remove | |
| 3: Actions | / 2: Add Movable Line | |
| 4: Analyze | 3: Lock Intercept at Zero | |
| 5: Window/Zoo | V 4: Plot Function | |
| | 5: Shade Under Function | |
| 26000 | 6: Regression ▶ | |
| 20000 | 7: Residuals ▶ | |
| | 8: Plot Value | |
| 2.3 2.5 | 9: Show Normal PDF | |
| | A: Graph Trace | |

Select **1: Show Linear (mx + b)**

| | |
|---|---|
| 1: Plot Type | Unsaved |
| 1: Show Linear (mx+b) | ove |
| 2: Show Linear (a+bx) | Movable Line |
| 3: Show Median–Median | Intercept at Zero |
| 4: Show Quadratic | Function |
| 5: Show Cubic | de Under Function |
| 6: Show Quartic | |
| 7: Show Power | ression |
| 8: Show Exponential | duals |
| 9: Show Logarithmic | Value |
| A: Show Sinusoidal | w Normal PDF |
| ▼ | ph Trace |

You should now have your regression line graphed on your scatter plot. The equation should also be labeled as it is here…

*Note: You can move the equation to a different location by using the click/touch wheel. Look for the grasping hand icon.*

$$y = -15358.9 \cdot x + 73622.5$$