



# AP\* Statistics Practice Questions Using TI-Nspire™ Technology

Example 2: Following are advertising expenditures and total sales for six detergent products:

Advertising (\$1000) (x):	2.3	5.7	4.8	7.3	5.9	6.2
Total sales (\$1000) (y):	77	105	96	118	102	95

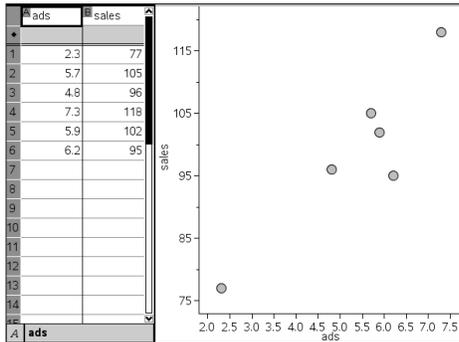
- (a) Interpret the slope of the regression line.
- (b) Which of the points (7.3,118) or (5.9,102) is an influential point? Explain.

Help from the TI-Nspire:

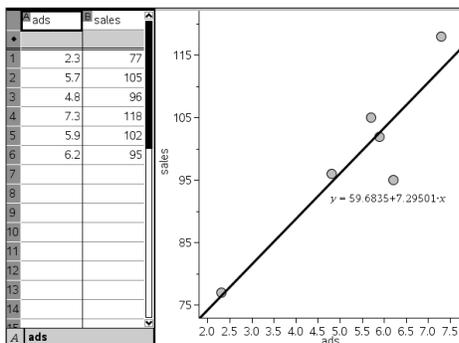
Select **(☰)** → "New Document" → "Add Lists & Spreadsheets"  
 Name the first two columns "ads" and "sales"  
 Put the data into the columns.

	ads	sales				
1	2.3	77				
2	5.7	105				
3	4.8	96				
4	7.3	118				
5	5.9	102				
6	6.2	95				
7						
8						
9						
10						
11						
12						
13						
14						

Select **ctrl (☰)** → "Page Layout" → "Select Layout" → "Layout 2"  
 Click on "Press Menu" → "Data & Statistics"  
 On the bottom "Click to add variable" → choose "ads"  
 On the side "Click to add variable" → choose "sales"



Select **(☰)** → "Analyze" → "Regression" → "Show Linear (a+bx)"



From this TI-Nspire screen we can answer question (a):

The slope of the regression line indicates that every extra \$1000 spent on advertising will result in an average of \$7295 in added sales.

Highlight the two cells 7.3 and 118, select "clear" and note that the slope changes to "6.128."

Click on "ctrl" and "esc" to restore the deleted cells.

Highlight the two cells 5.9 and 102, select "clear" and note that the slope changes to "7.328."

From these TI-Nspire actions, we can answer question (b):

Removing the point (7.3,118) dramatically changes the slope from 7.295 to 6.128, while removing the point (5.9,102) changes the slope only from 7.295 to 7.328. Influential points are those whose removal sharply changes the regression line. Thus (7.3,118) is an influential point, while (5.9,102) is not.