Two-Variables Statistics Menu

This menu allows to perform basic statistic calculations over a two previously created data lists. To show the menu, touch the "**SUM**" menu, the "**CALC**" button and the "**X,Y Statistics**" button.

[X-List ▶]	Select the 'X' variable data-list.
[Y-List ▶]	Select the 'Y' variable data-list
[Ln] [Ln]	Toggle to perform calculations with the natural logarithm of the corresponding X and / or Y variables.
[Regression]	Opens the "Curve Fitting" menu.
[CORR.]	Calculates the correlation coefficient of X,Y-values.
[G.SD]	Calculates the standard deviation of X-values with Y-frequencies.
[W. MN]	Calculates the weighted mean of the X-values using Y-values as weights (or frequencies).
[N]	Number of samples in the X and Y lists.
[$\sum x$]	Calculates the sum of the X-values.
[$\sum y$]	Calculates the sum of the Y-values.
[$\sum x^2$]	Calculates the sum of the squares of the X-values.
[$\sum y^2$]	Calculates the sum of the squares of the Y-values.
[$\sum xy$]	Calculates the sum of the products of X and Y-values.

Example: Statistics Calculations.

For the last six weeks the following data was collected: minutes of advertising purchased in local radio and the corresponding total sales:

Week	Minutes	Sales
1	2	$1,400
2	1	$920
3	3	$1,100
4	5	$2,265
5	6	$2,890
6	4	$2,200

Use the "**SUM**" menu or "**Data List Editor**" to create two lists; one using the "Minutes" values and other using the "Sales" values. lists using the above data and names. Then calculate all the statistical values included in the menu.

Solution : First, create the "Minutes" and "Sales" lists:

[SUM]	Select the SUM menu to enter the data
[Shift] [CLEAR DATA]	Initialize the list for data entry.
[Frq?]	Set Frequency entry to "OFF".
2 **[INPUT]** 1 **[INPUT]** 3 **[INPUT]** 5 **[INPUT]** 6 **[INPUT]** 4 **[INPUT]**	Enters the Sample #1. Enters the Sample #2. Enters the Sample #3. Enters the Sample #4. Enters the Sample #5. Enters the Sample #6.
[Action ▶] [NAME List]	Save the list to a file. Name the file "**Minutes**" and touch "**Save**".

[Shift] [CLEAR DATA]	Initialize the list for data entry.
1400 **[INPUT]** 920 **[INPUT]** 1100 **[INPUT]** 2265 **[INPUT]** 2890 **[INPUT]** 2200 **[INPUT]**	Enters the Sample #1. Enters the Sample #2. Enters the Sample #3. Enters the Sample #4. Enters the Sample #5. Enters the Sample #6.
[Action ▶] [NAME List]	Save the list to a file. Name the file "**Sales**" and touch "Save".

Now, perform the X,Y Statistics calculations:

Keystrokes	Description
[CALC]	Shows the CALC menu.
[X,Y Statistics]	Shows the Two-Variables statistics menu.
[X: List ▶] "Minutes"	Select the "Minutes" list as 'X' variable.
[Y: List ▶] "Sales"	Select the "Sales" list as 'Y' variable.
[Ln]	Set "Ln" modifier to OFF for both lists.
[CORR.]	Calculates correlation. **Corr. = 0.94**
[G.SD]	Calculates the standard deviation. **G.SD = 1.63**
[W. MN]	Calculates the weighted mean. **W.Mean = 4.13**
[N]	Calculates the Number of samples. **N = 6**

Keystrokes	Description
[Σx]	Calculates the sum of the ‘Minutes’. **Σx = 21.00**
[Σy]	Calculates the sum of the ‘Sales’. **Σy = 10,775.00**
[Σx^2]	Calculates ‘Minutes’ sum of squares. **Σx^2= 91.00**
[Σy^2]	Calculates ‘Sales’ sum of squares. **Σy^2= 22,338,725.00**
[Σxy]	Calculates ‘Minutes’ times ‘Sales’ sum. **Σxy = 44,485.00**