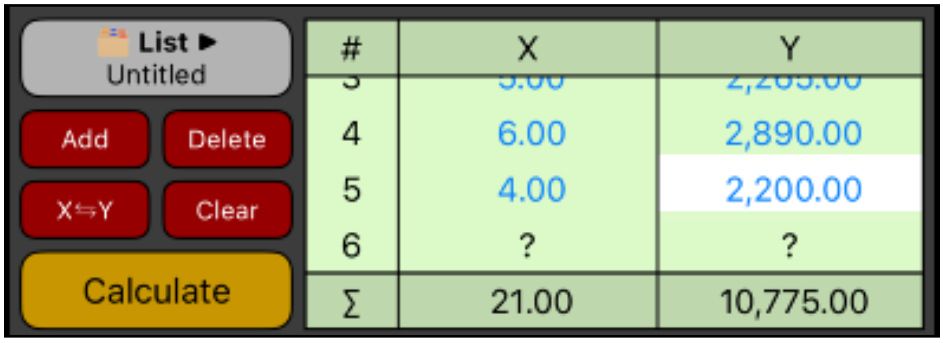
Statistics Edit Worksheet



This worksheet allows you to create or edit a statistical list based on one or two sample values.

Cash Flows Actions	
[List ▶]	Statistical list action menu.
NEW List	Clears the editor to enter a new list.
CLEAR Data	Delete all values in the list.
NAME List	Shows a pop-up view to enter the list name.
> LOAD List	Shows a submenu to load a previously saved statistics list.
DELETE List	Deletes the current list.
[Add]	Add a new sample pair to the list
[X⇄Y]	Swaps the X and Y values in the list.
[Delete]	Remove the selected sample pair from the list.
[Clear]	Clears the selected sample pair.
[Calculate]	Opens the **Statistics Calculations** worksheet with the current list.

The Statistics samples X and Y values are entered in the list selected item using the Calculator's **[INPUT]** key.
To select an item in the list directly tap on it , or alternatively, using the **[▼]** or **[▲]** keys.
Once the Statistics list is ready, press the **[Calculate]** button to open the **Calculations** worksheet described below.

Statistics Calculations Worksheet

This worksheet allows to perform statistical calculations over the current statistical samples list created in the Statistics Edit Worksheet described above.

[n]	Shows the number of samples of the current list.
[∑x]	Calculates the sum of the "X" values.
[∑y]	Calculates the sum of the "Y" values.
[∑x^2]	Calculates the sum of the squares of the "X" values.
[∑y^2]	Calculates the sum of the squares of the "Y" values.
[∑x·y]	Calculates the sum of the product of the "X" and "Y" values.
[Mean]	Calculates the average of "X" or "Y" values.
[s]	Calculates the standard deviation of "X" or "Y" values.
[σ]	Calculates the Population standard deviation of "X" or "Y" values.
[Min.]	Calculates the minimum of "X" or "Y" values.
[Max.]	Calculates the maximum of "X" or "Y" values.
[W.Mean]	Calculates the weighted mean of "X" values with "Y" weights.
[Median]	Calculates the median of "X" or "Y" values.
[FRCST]	Opens the "**Statistics Forecast**" worksheet.
[Back]	Gets back to the Statistics Edit worksheet.

With a non empty Statistics list created, press the **[FRCST]** button to open the **Statistics Forecast** worksheet described below.

Statistics Forecast Worksheet

This worksheet allows you to perform curve-fitting regressions and forecasting over a previously created sample list as described above.

[Model ▶…]	Select the best regression from available models or pick one from the list (Linear, Logarithmic, Exponential, Power, Exponent or Inverse).
[M]	Calculates the 'M' coefficient for the selected model equation.
[B]	Calculates the 'B' coefficient for the selected model equation.
[R^2]	Calculates correlation coefficient for the selected model.
[X]	Store or calculate "X" using the current model equation.
[Y]	Store or calculate "Y" using the current model equation.
[Back]	Gets back to the Statistics Edit worksheet.
If any other key is pressed before one of the **Blue** keys, the displayed number is stored in the corresponding variable. Otherwise, the variable is calculated.	

Example:
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	1.400,00
2	1	920,00
3	3	1.100,00
4	5	2.265,00
5	6	2.890,00
6	4	2.200,00

Create the list for the above samples, name it “Minutes-Sales”,perform all the statistics calculations and answer:
1) What is the best model for forecasting ?.
2) Using the “Best Model” What is the estimated Sales for 8 minutes advertising?
3) How many minutes of advertising are required to have $3,000 of sales?

Solution:
First, tap the **[STAT]** in the calculator’s keyboard to show the **Statistics Edit** worksheet. Then, follow the next sequence to create the list.

Keys	Comment
[List ▸] NEW List	Clear the list and get ready to input data.
2 **[INPUT]** 1400 **[INPUT]**	Enters sample #1 in the list.
1 **[INPUT]** 920 **[INPUT]**	Enters sample #2 in the list.
3 **[INPUT]** 1100 **[INPUT]**	Enters sample #3 in the list.
5 **[INPUT]** 2265 **[INPUT]**	Enters sample #4 in the list.
6 **[INPUT]** 2890 **[INPUT]**	Enters sample #5 in the list.
4 **[INPUT]** 2200 **[INPUT]**	Enters sample #6 in the list.
[List ▸] NAME List	Shows a Name entry form to name the list
Type “Minutes-Sales” and Tap **[Done]**	Name the list “Minutes-Sales”

Second, once the above Statistics list is ready, tap the **[Calculate]** button to show the **Statistics Calculations** worksheet and calculate all the available statistical values:

Keystrokes	Comment
[n]	Number of samples. **n = 6.00**
[∑x] [∑y]	Sum of "X" values. **∑x = 21.00** Sum of "Y" values. **∑y = 10,775.00**
[$\sum x^2$] [$\sum y^2$]	Sum of squares of X values. **$\sum x^2$ = 91.00** Sum of squares of Y values. **$\sum y^2$ = 22,338,725.00**
[∑x·y]	Sum of the product of "X" and "Y" values. **∑x·y = 44,485.00**
[Mean] X values [Mean] Y values	Mean of "X" values: **X-mean = 3.50** Mean of "Y" values: **Y-mean = 1,795.83**
[s] X values [s] Y values	Standard deviation of "X" values. **Sx = 1.87** Standard deviation of "Y" values. **Sy = 773.13**
[σ] X values [σ] Y values	Population standard deviation of "X" values. **σx = 1.71** Population standard deviation of "Y" values. **σy = 705.76**
[Min.] X values [Min.] Y values	Mean of "X" values: **X.min = 1.00** Mean of "Y" values: **Y.min = 920.00**
[Max.] X values [Max.] Y values	Mean of "X" values: **X.max = 6.00** Mean of "Y" values: **Y.max = 2,890.00**
[Median] X values [Median] Y values	Median of the "X" values. **X-median = 3.50** Median of the "Y" values. **Y-median = 1,800.00**
[W.Mean]	Weighted Mean. **W.mean = 4.13**

Third, tap the [FRCST] button to show the **Statistics Forecast** worksheet to solve the last 3 questions:

Keystrokes	Description
[Model ▶] Best Fit	1) The best fit is the Linear model -> **Sales = 387.00 * Minutes + 441.33** with **R^2 = 0.94**
8 [X] [Y]	2) For 8 minutes of advertising, the estimated sales is **3,537.33**
3000 [Y] [X]	3) For 3,000 of sales you should contract **6.61** minutes.