Regression Models Menu

This menu allows you to perform regressions and forecasting over a previously created X,Y-lists. To show the menu, touch the "**Statistics**" button in the main menu and select the "**Regression**" button.

$$Y = 387.00 \cdot X + 441.33$$

Button	Description
[XY-List ▶]	If enabled, shows all the previously saved 'X,Y' data-list to select the one to use.
[Linear ▶]	Select the regression model to use (Linear, Logarithmic, Exponential, Power, Exponent or Inverse).
[X,Y Editor]	Opens the "X,Y Data Editor" view to edit the current data.
[X]	Stores the 'X' value or calculates it for a given 'Y' value using the current model equation.
[Y]	Stores the 'Y' value or calculates it for a given 'X' value using the current model equation.
[M]	Calculates the 'M' coefficient for the selected model equation.
[B]	Calculates the 'B' coefficient for the selected model equation.
[R²]	Calculates correlation coefficient for the selected model.

Example: Curve Fitting.

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 "Data List Editor" to create the "Minutes" & "Sales" lists using the above data. Then, what regression model best fits the data?.

Solution :

Keystrokes	Description
[X-List ▶]	Select the "Minutes" list as 'X' variable.
[Y-List ▶]	Select the "Sales" list as 'Y' variable.
[Linear ▶]	Select the "Linear" model
[R^2]	Linear model => $R^2 = 0.94$
[Logarithmic ▶]	Select the "Logarithmic" model
[R^2]	Logarithmic model => $R^2 = 0.87$

Keystrokes	Description
[Exponential ▶]	Select the "Exponential" model
[R²]	Exponential model => R² = 0.93
[Power ▶]	Select the "Power" model
[R²]	Power model => R² = 0.89
[Exponent ▶]	Select the "Exponent" model
[R²]	Exponent model => R² = 0.93
[Inverse ▶]	Select the "Inverse" model
[R²]	Inverse model => R² = -0.77

The best model is the Linear because it has the **R²** coefficient closest to 1.
So the relation is : **Sales = 387.00 * Minutes + 441.33**

Now, what is the estimated sales for a 8 minutes of advertising?
and,
How many minutes are needed to obtain $3,000.0 sales?

Solution :

Keystrokes	Description
type 8 [X]	Stores the number of minutes in 'X'
[Y]	Calculate the estimated sales => **Sales = 3,537.33**
type 3000 [Y]	Stores the sales amount in 'Y'
[X]	Calculate the estimated minutes => **Minutes = 6.61**