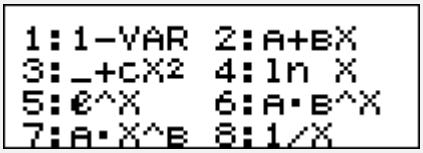
Module 6: Examples of functions from geometry

Part A – Finding linear best fit line equations

There are many nonlinear models that exist to find a best fit model for data. Start by pressing MODE and selecting 2.

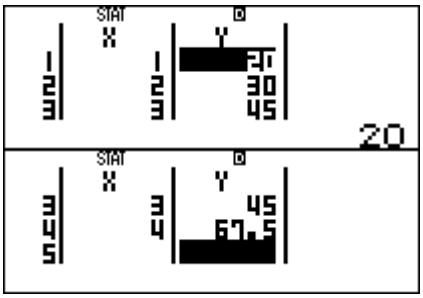
Here are all the types of regression models that are built in.

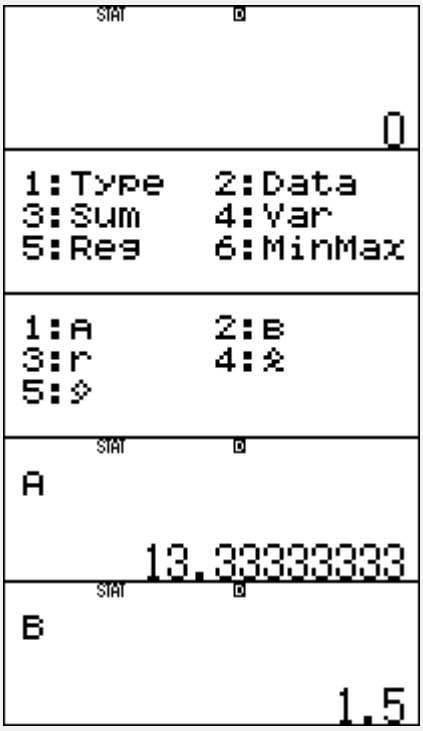
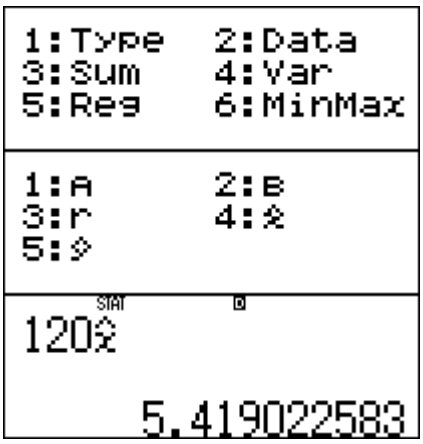
2: A + BX- Linear Regression
3: _ + CX^2 ($A + BX + CX^2$) Quadratic Regression
4: ln X (A + B*ln X)- Natural Log Regression
5: e^X ($A*e^{BX}$)- Exponential base e Regression
6: A*B^X ($A*B^X$)- Exponential Regression
7: A*X^B ($A*X^B$)- Power Regression
8: 1/X (A + B/X)- Inverse Regression



Choose a model that best fits the data set you have been given and enter the values. This example will look at bacterial growth using an exponential model. Choose 6.

X	Y
1	20
2	30
3	45
4	67.5



Press [AC] to clear the data entry and press [SHIFT] [1] to see the STAT options. Choose [1] [=] and select A to see the start value then repeat [SHIFT] [1] [5] [2] [=] to find B the growth rate.	
To predict an X ($\hat{x}$)(called X-hat) value given a Y, first enter the Y value then press [AC] [1] [2] [0] [SHIFT] [1] [5] [4] [=].	

To predict a Y ($\hat{y}$) (called Y-hat) value for a given x value press AC 7 SHIFT 1 5 5 =.