Hooke's law

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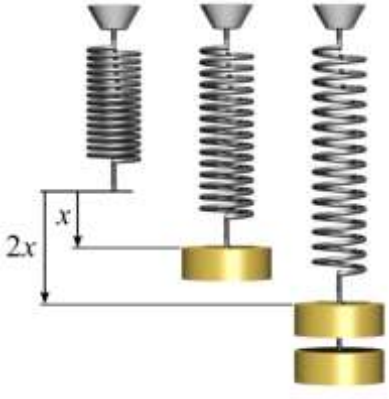
Hooke's law is a good approximation, as long as the forces and deformations are small. **Hooke's law** states that the force (*F*) needed to extend or compress a spring by some distance (*X)* is proportional to that distance. That is, $F = kX$, where k is a constant, characteristic of the spring, e.g. stiffness and X is a small displacement compared to the total possible deformation of the spring.
Source:
https://en.wikipedia.org/wiki/Hooke%27s_law



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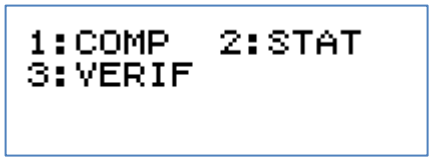
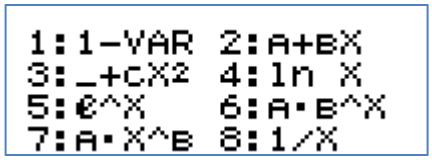
https://commons.wikimedia.org/w/index.php?curid=25398333

STAT Mode

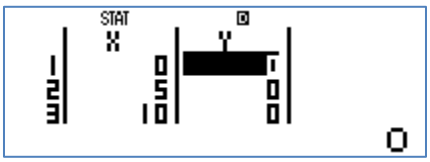
To be able to access the FX82AU+II statistical packages you need to be in **STAT** mode.
Press the **[MODE]** key then **[2]** for 'STAT'.

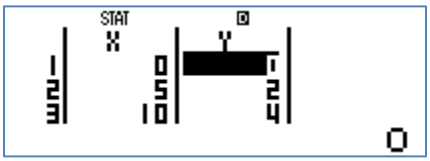


Then select the statistics or regression model required. For Hooke's law this is a linear relationship, so select **[2]** for **A+Bx** to set up the calculator for bivariate data.

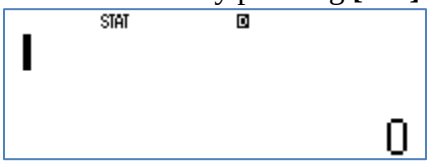


Enter the data into the *x* and *y* columns. (e.g. x → distance and y → weight (force).
Examples are shown below:

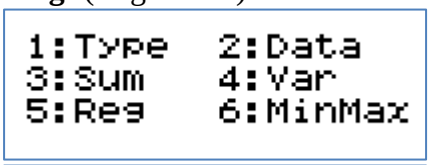


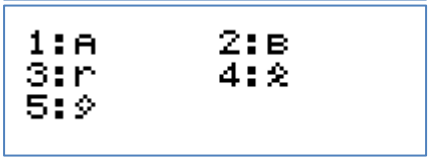


Clear the screen by pressing **[AC]**.

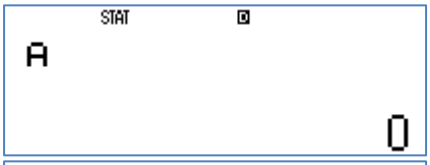


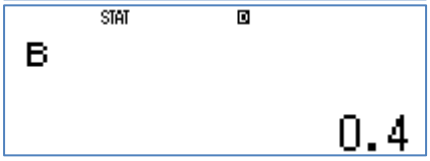
To retrieve the statistical regression values '**A**' and '**B**' select STAT, **[SHIFT] [1]** then **[5]** for '**Reg**' (Regression).





Then select **[1]** for the **A** value and **[2]** for **B** value.





Fitting a linear mode for the example given:
y* = A + B*x* i.e. *y* = 0 + 0.4*x

Other websites to visit related to Hooke's Law:
http://www.4physics.com/phy_demo/HookesLaw/HookesLawLab.html
http://www.vicphysics.org/documents/teachers/Innovative/law.pdf
https://www.youtube.com/watch?v=zJs27xNdKOM