# Homework 7
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Download the file, "HW7 template.xlsx" from D2L. Submit this homework by typing your name above in place of "Your Name", completing all three parts below, then save the file as a PDF, and upload to the dropbox on D2L called "HW7".

Part 1) In the provided file, use the *Solver* to optimize the curve fit for each of the material models provided on the tab named, "Part 1". Once all of them have been optimized to the experimental data. Copy the resulting plot, which is on the tab named "Part 1 Plot" in the Excel file, and paste it below.
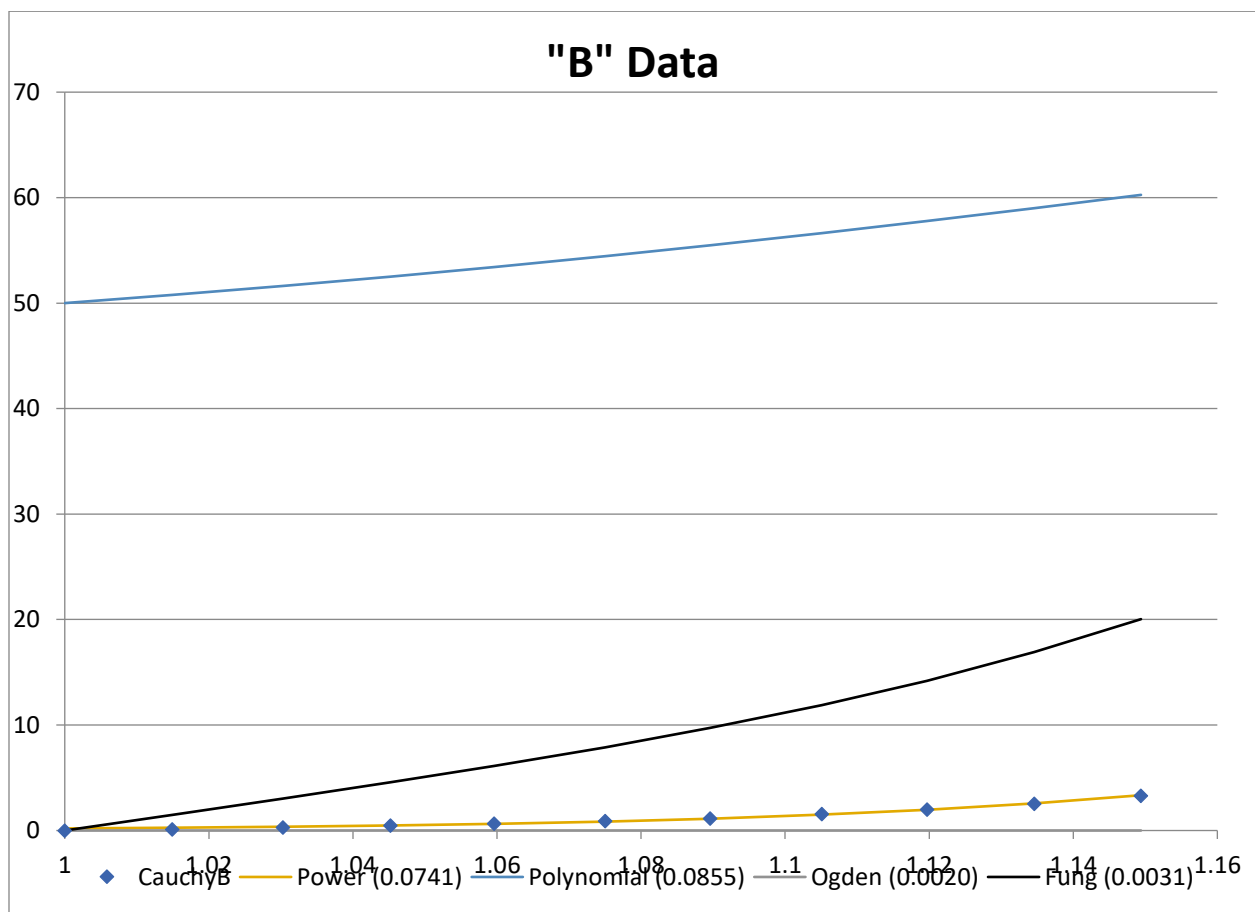
Part 2) Fill in column's *D* and *E* on the tab named, "Part 2". First, calculate the pressure in *psi*. Next, use the **convert** function to convert from *psi* to *MPa*. Copy the full data set with your newly calculated data and past it all below.

Unit ID	Force (lbs)	Area (in^2)	Pressure (psi)	Pressure (MPa)
A	55	0.36	152.7777778	1.053365698
B	5	0.58	8.620689655	0.059437563
C	5	0.86	5.813953488	0.040085798
D	56	1.02	54.90196078	0.378535695
E	78	0.59	132.2033898	0.911510286
F	72	0.64	112.5	0.775660195
G	24	0.52	46.15384615	0.318219567
H	8	0.12	66.66666667	0.459650486
I	22	0.56	39.28571429	0.270865465
J	4	0.24	16.66666667	0.114912622
K	36	0.89	40.4494382	0.278889059
		Force = Pressure * Area		MPa = Pa/10^6
		Pressure = Force/Area		

Part 3) Finally, using the built-in ability to create a custom Macro within Excel, write a macro to calculate the Sum of Cubes from 1 to any number the user inputs into the function. The equation for the sum of all cubes is shown on the tab named, "Part 3". Once you have done this successfully, copy the code from the macro editor window and paste it below.

$$Sum\ of\ Cubes = \sum_{1}^{N} N^3$$

	Input Number of Sides:	Sum of Cubes:
	5	225

```
Function sumofcubes(totalSides)

    Dim total_sum As Integer

    total_sum = 0


    For Index = 1 To totalSides

        total_sum = total_sum + (Index ^ 3)

    Next

        sumofcubes = total_sum

End Function
```