Fluid Mechanics I
Chemical and Petroleum Engineering Department
Sharif University of Technology, Tehran, Iran
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Bonus Homework 1

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Welcome to your Python programming HW!
In this assignment, you will be using Jupyter Notebook to write your Python code for a curve fitting problem. Jupyter Notebook is a powerful tool that allows you to write and execute Python code in an interactive environment, making it ideal for exploring and solving problems. So, get ready to dive into the world of Python programming with Jupyter Notebook and unleash your creativity and analytical skills to solve a most exciting problem in the fluid mechanics!

Problem:
The relationship between the dynamic viscosity of a fluid and the absolute temperature is described by the following table:

T, K	**μ, Pa.s**
273.15	1.787e-3
278.15	1.519e-3
283.15	1.307e-3
293.15	1.002e-3
303.15	7.975e-4
313.15	6.529e-4
333.15	4.665e-4
353.15	3.547e-4
373.15	2.828e-4

Based on the provided data, derive an equation for the viscosity in the form of

$$\mu(T) = A + BT + CT^2 + DT^3 + ET^4 \tag{1}$$

Utilize this derived equation to estimate the dynamic viscosity of the fluid at 50°C, known to be 5.468e-4 Pa.s. Then, compare your results with those obtained from Andrade's Equation, expressed in the form of

$$\mu(T) = De^{B/T} \tag{2}$$

where the constants D and B need to be determined based on the provided viscosity data.

Good Luck