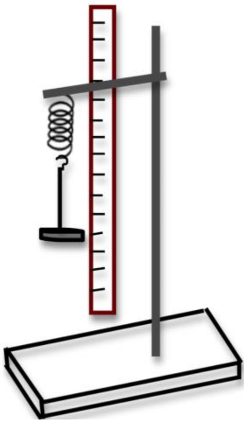
PRACTICE 11: ELASTIC FORCE. HOOKE'S LAW.

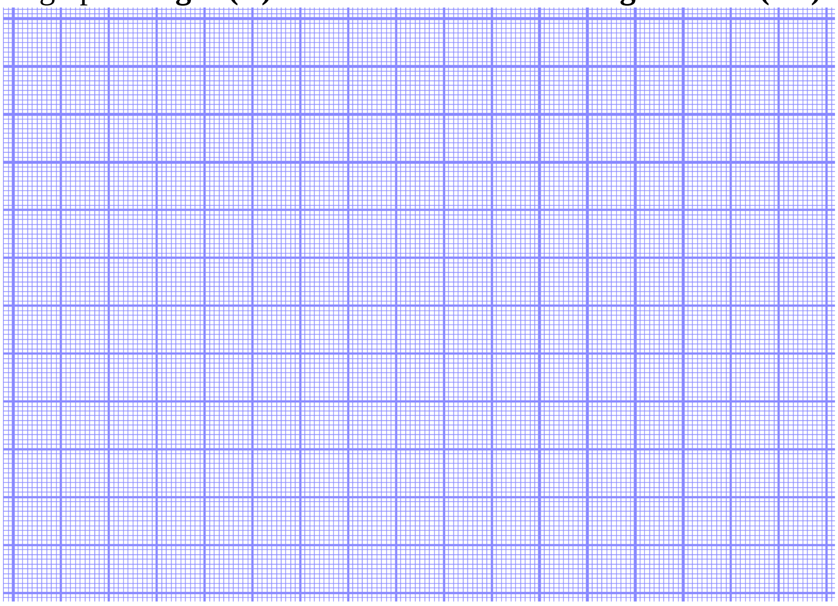


According to the drawing, place on the weighing pan the masses you can find on the table.
Measure the elongation in each case and gather the data in the following table:

mass (g)	20	60	110	160
mass (kg)				
Force –Weight- (N)				
l_o= initial length (cm)				
l = final length (cm)				
$\Delta l = l - l_o$ (cm)				
Δl (m)				

Data: $g_{Earth} = 9.8\ m/s^2$ ***Note:*** *Round to only one decimal for the Weight*

1. Represent the graph **Weight (N)** -vertical axis- versus **elongation Δl (cm)** -horizontal axis-.



2. Answer:
   a) Is there any relation between the weight and the elongation? Do you remember the formula of Hooke's Law?

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   b) What type of graph corresponds to that relation?

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   c) Using the graph, calculate the mass you would need for the spring to elongate 2 cm.

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   d) Using the graph, calculate the elongation of the spring if we hung a mass of 40 g.

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   e) Calculate the elastic constant of the spring (k). (You need to remember the formula of Hooke's Law)