

Experiment (3): Hooke's Law

Name:	ID:	Day:
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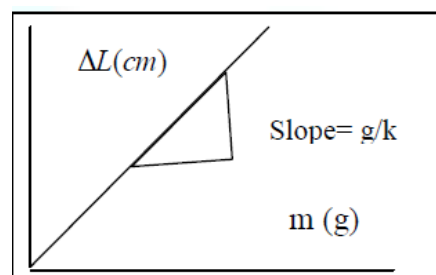
Result and Discussions:

The purpose: To study the behavior of springs in static situations. We will determine the spring constant, k , for an individual spring using Hooke's law

Equipments (Apparatus): Spring – Ruler – Weights – Holder & clip

Theory: At equilibrium, the spring is under two forces , the restoring force that proportional to the elongation, given by Hooke's law $F_r = -k \Delta L$, and Newton's second law, $F_g = -mg$.

So: At equilibrium , $F_r = F_g \Rightarrow -k \Delta L = -mg \Rightarrow \Delta L = (g / k) m$



Result:

Mass, m (g)	Elongation, ΔL (cm)

From the graph: (use the graph paper to plot the mass, m , as a function of the elongation, ΔL)

Slope =.....

Stiffness constant of the spring (k) =dyn/cm

Conclusions:

Do your results confirm Hooke's Law?