Hooks Law Experiment

Background Information:

Hook’s law is a relationship that was determined by Robert Hook. He found that springs, when applied a certain force would stretch certain amount. He determined that the amount that the spring stretched was directly proportion to the force applied on the spring.

He found the equation to be

F=K∆L

F is the force in newtons (N), K is the spring constant in newtons per meter (N/m ) and ∆L is the change in length of the spring in meters(m)

Objective:

To determine the spring constant for two different springs and determine whether they follow the rules of Hooks law

Hypothesis:

Materials

* Stand
* 2 springs
* Variety of masses
* Balance

Apparatus: Draw the apparatus needed for this experiment

Procedure:

1. Obtain the materials needed and set up the stand as in figure 1
2. Measure the length of the spring at rest and record your answer
3. Place a mass on the spring and measure the length of the spring
4. Remove the mass and place a new mass on the spring, record the the length pf the sring
5. Continue doing step 4 for 6 trials
6. Now remove the spring and replace with another spring.
7. Redo steps 2-5 with the new spring

Data:

1. Create a graph for each spring of Force by Length
2. Calculate the K for each spring

Discussion:

1. List sources of error in your experiment
2. Explain/state your results, do they support your hypothesis. Defend your answer
3. What things would you do differently next time to ensure better results, explain why

Conclusion:

1. Restate your results and explain whether your hypothesis is true. Defend your answer.

Questions:

1. Which of your 2 springs had a large K?
2. Would you want a spring with a large K in your bed and or as the suspension in a semi truck? Explain

\*Do not forget to make a title page!!!!