SPASH PHYSICS Names _____

Period ___

Hooke's Law Quickie Lab (10 pts.)

Purposes: [redacted]

g = 9.8 m/s2

Skip Procedure (Quickie Lab)

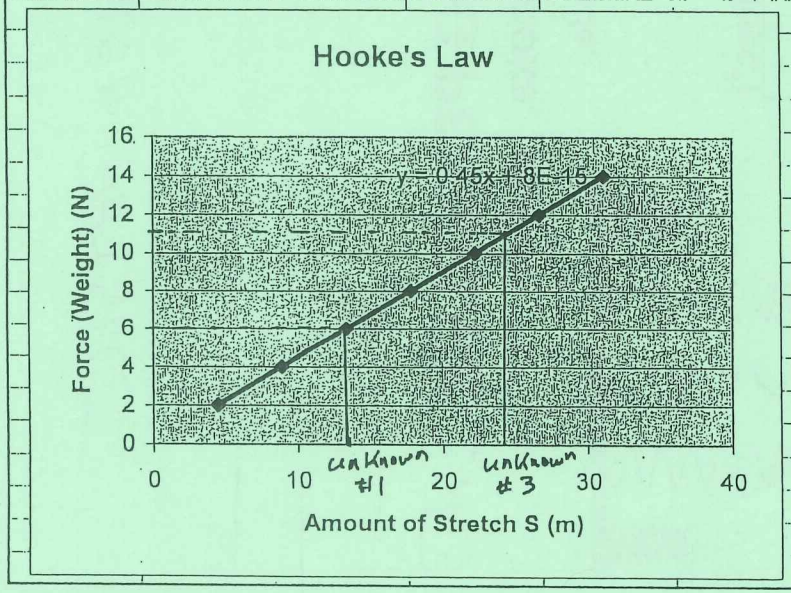
W = mg

Data Table #1	Object	Reading with Object (cm)	Reading Empty (cm)	Stretch S (cm)	Stretch S (m)	Measured Mass m (g)	Measured Mass m (kg)	Force Weight F (N)
1	S							
2	M							
3	M & S							
4	L							
5	L & S							
6	L & M							
7	L & m & S (CAREFUL)							

Known - Experimental

% error = _____

Known



Data Table #2

unknown # (any two)	stretch S (m)	Measured Mass m (g)	Measured Mass m (kg)	W = mg Measured Force Weight F (N)	Using Graph Up & Over Weight F (N)	% error
1						
2						

Questions

1. What is the relationship between the Force and amount of stretch? (direct, directly with the square, inversely?)

F

2. What is your spring constant? (slope of your line) K_1

3. Would the shocks on a car have a higher spring constant or lower?

Conclusion:

SPASH PHYSICS

Names _____

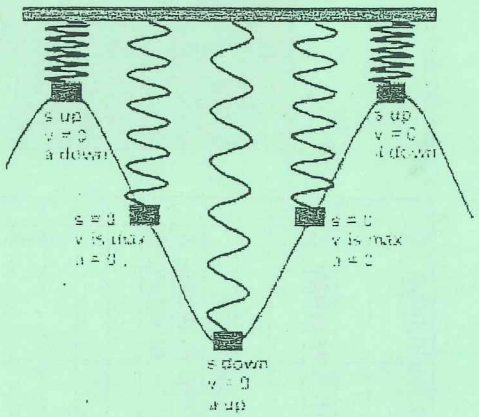
_____

Period ___

SPRING PENDULUM LAB

Hooke, part 2

Procedure: Use small amplitude, time 10 cycles, 7 trials



Data:

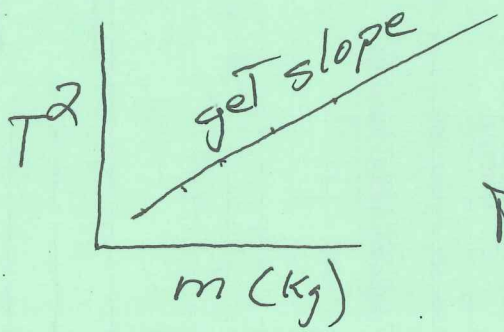
Trial	Mass (kg)	T (sec)	T^2 (sec^2)
1			
2			
3			
4			
5			
6			
7			

Calculations: $T = 2\pi\sqrt{m/k}$

1. Graph T^2 versus mass and obtain linear best fit
2. Use slope to calculate k and compare to slope of first graph (show work directly on graph) $\Rightarrow$ $K_{avg} = \frac{K_1 + K_2}{2}$

find % difference

$$\frac{|K_1 - K_2|}{K_{avg}} \times 100\%$$



$$T = 2\pi\sqrt{\frac{m}{K}}$$

rearrange above like pendulum Lab To get

$$\frac{4\pi^2}{\text{slope}} = K_2$$ spring constant