

## Prelab Questions

These questions need to be completed before entering the lab. Please show all workings.

**Marker's  
Initials**

### Prelab 1

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

Square both sides of the equation above. If we plot  $T^2$  vs.  $m$ , what is the expression for the slope of this graph?

### Prelab 2

An unstretched vertical spring has length of  $L_1 = 7.35 \pm 0.05 \text{ cm}$ . A  $500.0 \pm 0.1 \text{ g}$  mass is hung on the spring which then stretches it to a length  $L_2 = 12.50 \pm 0.05 \text{ cm}$ . Calculate the spring constant  $k$  and its uncertainty. Show your workings.

Name and Student Number: \_\_\_\_\_

Date: \_\_\_\_\_

Partner: \_\_\_\_\_

**Table 1:**

	Value	Uncertainty	Units
$W$			
$L_1$			
$L_2$			

**QUESTION 1:**

**Table 2:**

Mass (g)	Time for 10 oscillations (s)		Average Time (s)	Period, T (s)	$T^2$ (s <sup>2</sup> )
	Trial 1	Trial 2			
200.0					
250.0					
300.0					
350.0					
400.0					
450.0					

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**QUESTION 2:**

**QUESTION 3:**

**Table 3:**

*Note: Print a copy of your **Period Squared vs Mass** graph with correct format.*

	<b>Value</b>	<b>Uncertainty</b>	<b>Units</b>
<b>Slope</b>			
<b>Intercept</b>			



Staple graph to the opposing page

**QUESTION 4:**

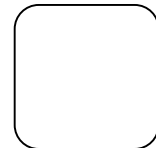
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**QUESTION 5:**

**QUESTION 6:**

**CHECKPOINT:**

To be signed **after** you have produced your three graphs.



**Staple graph to the opposing page**

**QUESTION 7:**

A)	
B)	
C)	
D)	
E)	

**QUESTION 8:**