Name _____ # _____ Date _____

Regents Physics Mr. Mangiacapre

Period And Length Of A Pendulum

Word-process this lab using the standard format we have used all along.

Notes from teacher discussion - Use the information below in your introduction -

Why is an understanding of the pendulum important? _____

_____

Period - _____

What affects the period of a pendulum? What doesn't?_____

_____

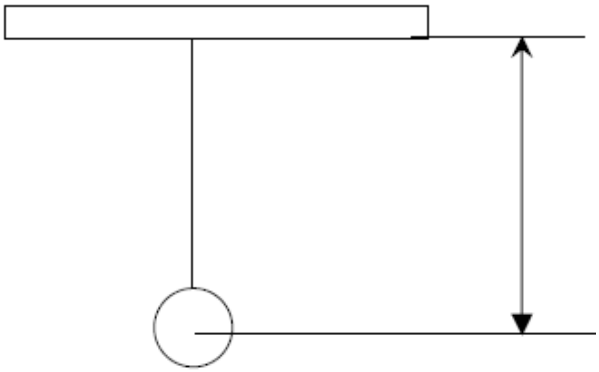
Purpose: (a) To find the mathematical relationship between the period (T) of a pendulum and it's length.

(b) To come up with an equation that relates period to length using $y = mx + b$ (using T^2 vs. l) plot)

(c) To use the equation you found to find the period of a pendulum with a length of _____ (to be announced next week)

(d) To use the equation: $T = 2\pi\sqrt{L/g}$ to calculate the acceleration due to gravity (g).

Important: Measuring the length of the pendulum



***Measure from the top pivot point of the string to the MIDDLE of the bob

Data Table (Reproduce this data table in the SIMPLE TABLE format you've used all along)

Length (cm)	Time for 10 vibrations (second)	Period (Time for one vibration) (second)	Period ^{2} (second)^2
0	0	0	0
10			
20			
30			
40			
50			

Plotting Data

First Plot Period vs Length **Second Plot** - Period^2 vs Length

Put L on the vertical axis for both plots

Finding the Equation using **y = mx + b** for the **second graph**

What's the y variable on the second plot? (Variable on vertical axis) _____

What's the x variable on the second plot? _____

What's your m value (slope) _____

What's your b value (y intercept) _____

Substitute all theses values into y = mx + b

Mandatory - On page 2 of your lab: Replicate the pendulum drawing on the first page of this worksheet using your word processors' drawing tools. **Give your drawing a centered title and be sure to include the label and the caption.**