

AP Physics B

Experiment, The Acceleration due to Gravity

It can be shown that the period of oscillation for a simple pendulum pulled back through a small angle is only dependent upon the length according to the equation

$$T = 2\pi\sqrt{\frac{L}{g}}$$

You are to go into the lab and measure the period of the pendulum for various different pendulum configurations. From your data, decide how best to determine the acceleration due to gravity.

This experiment requires a minimal report. Please include the following:

- (1) Title, Names, etc. (Section 1 on the handout: Lab Reports)
- (2) Purpose (Section 2 on the handout: Lab Reports)
- (3) Data (Section 4 on the handout: Lab Reports)
- (4) Analysis (Section 5 on the handout: Lab Reports)

Include any graphs or calculations you use to determine g . Also, include a percent error between the accepted value of g and your measured value.

NOTE: If you decide to calculate g from individual data points, you will be severely flogged by the physics brute squad. To do well on this lab, and to avoid physical harm, you need to make a graph. What you graph is up to you.

Rubric Outline

- 1 point: Title, purpose, etc.
- 2 points: Data tables
- 3 points: Graph
- 4 points: Calculations