

Physics in the Universe Lab Handout 04 "Bull's Eye"

Your Name: _____ Lab Partner(s): _____

Purpose: Determine and experimentally verify the starting height on a ramp that a steel ball should be released from to hit a target on the floor.

Materials:

steel ball
30 cm ruler

meter stick ramp
ring stand

metal pan
clamp

Procedure:

1. (Keep track of the exact steps you decide to follow and type your procedure in a shared Google Doc such that another student would be able to follow your directions. Print your Google Doc and staple to this page.)

Observations: _____

Data:

Height of lab table: _____ m

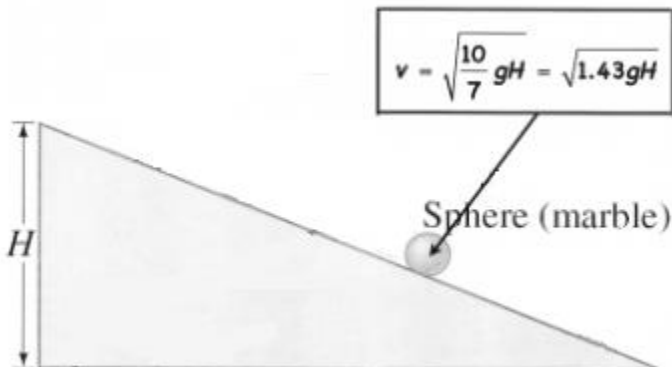
Time to fall height of lab table: _____ s $\Delta y = \frac{1}{2} a t^2$

Distance from edge of lab table to center of target: _____ m

Speed required to go horizontal distance from edge of lab table to target: _____ m/s $d_x = s_x \cdot t$

Height (H) on meter stick ramp to reach that speed: _____ m

Equation for a sphere rolling down a ramp:



Photographs:

(In this section import a picture or two of your experimental set-up.)

Error Analysis:

(In this section type what kept the lab's results from being perfect.)

Conclusion:

(In this section you should include, 1) the physics principals investigated in this lab, 2) what did you learn in this lab experience, and 3) what could have been done to improve this lab.)