Physics Lab Write-Up: PROJECTILE MOTION

Cover Page: Title of lab, name, date performed, date due
(10 points)

Objective(s):
1.) Calculate the horizontal velocity of a projectile.
2.) Predict the horizontal range of a projectile. (10 points)

Theory: Paragraph explaining concepts and principles of material learned previous to the lab activity.

- ***Describe:*** The path of a projectile, give an example of a projectile
- ***What*** variables effect the horizontal distance (range of a projectile)
- ***Explain*** the situation between one object projected horizontally, and one object dropped at the same time.

Materials: equipment used (5 points)

Procedure: Step by step explanation of activities performed throughout the lab. Each step is to be numbered with a ***brief*** explanation of the procedure. (5 points)

Data: Include all Data tables and recorded information.
Table 1.1 Determining the Initial Velocity
Table 1.2 Confirming the Predicted Range
(10 points)

Analysis: Show work for Calculations done

Part I

- Calculated time of flight
- Initial Velocity

Part II

- Calculated time of flight
- Predicted range

$$\%\text{Error} = \frac{(measured - predicted)}{measured} x100$$

(30 points)

Conclusion:

Conclusion Questions – ANSWER IN COMPLETE SENTENCES

1. Suppose a marble is dropped from rest from the same height and the same time as a marble which is projected horizontally off the end of the ramp with an initial velocity of 80 cm/s.

Briefly explain which marble, the one dropped or the one projected,

(a) has the greater acceleration, and

(b) which marble will strike the floor first, neglecting air resistance.

2. If the initial horizontal velocity of the marble projected horizontally **increased**
   a. the distance will (increase, decrease or stay the same) ?
   b. the time of flight will (increase, decrease or stay the same) ?

3. a. The vertical motion of the marble projected horizontally can be described as (accelerating upward, accelerating downward, or constant speed).

b. The horizontal motion of the marble projected horizontally can be described as (accelerating, or constant speed).

(10 points)