

## LECTURE 5. BALLISTICS PENDULUM *RESULT*

Name:.....

Class:.....

### 1. Purpose:

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### 2. Results:

#### a. Part 1: Momentum and Kinetic Energy after the Collision

m = ..... M = .....

Trial	1	2	3	4	5
Height, h (cm)					

Average h = .....(cm)

Calculate the velocity of the projectile after the collision:

$$v_f = \sqrt{2gh} \dots\dots\dots(m/s)$$

Calculate the kinetic energy and momentum of the projectile after the collision:

$K_f = \dots\dots\dots$

$p_f = \dots\dots\dots(kg.m/s)$

#### b. Part 2: Momentum and Kinetic Energy before the Collision

y = .....

Trial	1	2	3	4	5
x ( cm)					

x = ... ..(m)

Calculate the velocity of the projectile before the collision:  $v_i$

$$v_i = x \cdot \sqrt{\frac{g}{2y}} \dots \dots \dots (m/s)$$

Calculate the kinetic energy and momentum of the projectile before the collision:

$$K_i = \dots \dots \dots$$

$$p_i = \dots \dots \dots (kg.m/s)$$

### 3. Discussion of results

➤ Is momentum conserved? Why or why not?

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➤ Is kinetic energy conserved? Does this result make sense?

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