Exp. No. 9

Conservation of Linear Momentum

Name: ……. Grade: ……..……

Student's No.: ……Day and Date: ……

Partners Names: ……Sec: …….

<u>Part 1</u>: Collision in 1D. (Table 1)

Mass1	Mass2	h(cm)	y(cm)	X (cm)	X′ (cm)	x' (cm)	V(cm/s)	V′(cm/s)	v'(cm/s)

MV (gm.cm/sec)	mv' (gm.cm/sec)	MV' (gm.cm/sec)	MV'+ mv' (gm.cm/sec)

Q1. Compare the values calculated in columns 1 and 4. (They must be equal)

<u>Part II</u>: Collision in 2D. (Table 2)

Mass1	Mass2	h(cm)	$\vec{R}$ (cm)	$\vec{R}'$(cm)	$\vec{r}'$(cm)	θ_1	θ_2	$\theta=\theta_2-\theta_1$

h(cm)	$P_i^2 = (MR)^2$	$P_f^2 = (MR')^2 + (mr')^2 + 2(MR')(mr')\cos\theta$

Table (3)

Mass1=Mass2	h(cm)	X (cm)	X′(cm)	x′(cm)	θ	$\vec{X}+\vec{x}$
						$\theta=\theta_2-\theta_1$

Q2. Compare the values calculated in columns 2 and 3. (They must be equal)

Q3. Since $\vec{p}_i = \vec{p}_f$ and $\vec{p}_i$ is along the x-direction, check whether $p_{fy} = 0$.

Q4. From table 3, measure vectors X , X′, and x′, find the sum <u>from the graph</u>, does this sum equals vector X