Worksheet 9: Collisions

Name: _____

Partner: _____

Pencil only: use of Pen is forbidden.

As usual, turn your Excel document into the Google drive.

1. Discuss the degree to which momentum was conserved, both overall (i.e., for the 15 trials as a group), as subgroups (i.e., for the 3 sets of 5 trials), and individually. Obviously, some of the trials were better than others. So, include commentary on what factor(s) you think caused any individual trial to be better or worse.

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2. The same as question #1, but now about energy conservation.

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3. Which collisions were elastic, inelastic, or completely inelastic?

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4. Recall that we are only calculating changes in *mechanical* energy, not total energy. Noticing that all the changes in mechanical energy were negative, what do you think happened to all this "lost" energy?

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Part I: Mass 2 initially motionless…	
Quantity	**Result**
Trials with $\Delta p < 5\%$	/5
Δp_{ave} (%)	$\pm$
Trials with $\Delta KE < 5\%$	/5
ΔKE_{ave} (%)	$\pm$
Part II: Carts stick together	
Trials with $\Delta p < 5\%$	/5
Δp_{ave} (%)	$\pm$
Trials with $\Delta KE < 5\%$	/5
ΔKE_{ave} (%)	$\pm$
Part III: Both carts moving	
Trials with $\Delta p < 5\%$	/5
Δp_{ave} (%)	$\pm$
Trials with $\Delta KE < 5\%$	/5
ΔKE_{ave} (%)	$\pm$