**DATA SHEET**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

1. (1 point) Paste the Vx-time plot from *inelastic\_equal\_masses.trk* here.
2. (2 points) Record the measured initial and final average velocities of the red cart and the initial and final momenta in the table below.

|  |  |
| --- | --- |
| initial velocity *v*i |  |
| final velocity *vf* |  |
| initial momentum  |  |
| final momentum  |  |

1. (2 points) Compute the percent difference between the initial momentum and the final momentum and record it below*.*
2. (1 point) Paste the Vx-time plot from *inelastic\_blue500.trk* here.
3. (2 points) Record the measured initial and final average velocities of the red cart and the initial and final momenta in the table below.

|  |  |
| --- | --- |
| initial velocity *v*i |  |
| final velocity *vf* |  |
| initial momentum  |  |
| final momentum  |  |

1. (2 points) Compute the percent difference between the initial momentum and the final momentum and record it below*.*
2. (1 point) Paste the Vx-time plot from *elastic\_equal\_masses.trk* here.
3. (2 points) Complete the table below.

|  |  |
| --- | --- |
| initial velocity *v*i |  |
| calculated final velocity *v1f(calc)* red cart |  |
| measured final velocity *v1f*  red cart |  |
| calculated final velocity *v2f(calc)* blue cart |  |
| measured final velocity *v2f* blue cart |  |

1. (2 points) Compute the percent difference between the calculated and measured final velocities for each cart and record it below*.*
2. (1 point) Paste the Vx-time plot from *elastic\_red500.trk* here.
3. (2 points) Complete the table below.

|  |  |
| --- | --- |
| initial velocity *v*i |  |
| calculated final velocity *v1f(calc)* red cart |  |
| measured final velocity *v1f*  red cart |  |
| calculated final velocity *v2f(calc)* blue cart |  |
| measured final velocity *v2f* blue cart |  |

1. (2 points) Compute the percent difference between the calculated and measured final velocities for each cart and record it below*.*
2. (1 point) Paste the Vx-time plot from *elastic\_blue500.trk* here.
3. (2 points) Complete the table below.

|  |  |
| --- | --- |
| initial velocity *v*i |  |
| calculated final velocity *v1f(calc)* red cart |  |
| measured final velocity *v1f*  red cart |  |
| calculated final velocity *v2f(calc)* blue cart |  |
| measured final velocity *v2f* blue cart |  |

1. (2 points) Compute the percent difference between the calculated and measured final velocities for each cart and record it below*.*
2. (5 points) Were the measured final velocities greater than or less than the calculated final velocities in the three elastic collisions? Explain why.