# Collision lab Practical: Testing your model !!!

## Practice problem using data, graph, motion map, and equations

|  |  |
| --- | --- |
| Two toy cars start 10 m apart, headed towards each other. The red car moves at 1.2 m/s, and the blue car has a speed of 0.8 m/s. Determine the location where they will collide.  We will start the **red  /  blue** (circle one) car at 0 m, and the **red  /  blue** (circle one) car at 10 m. | |
| Fill in the Data table | Plot a graph of your motion |
| |  |  |  | | --- | --- | --- | | Time (s) | Red car position (m) | Blue car position (m) | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  |   Collision position & time: | Collision position & time: |
| Draw a mOTION MAP of your motion | |
| Collision position & time: | |
| Solve using Two equations and two unknows | |
| Red car equation:  Blue car equation:  Combine equations, rearrange, and solve for the collision location and time.  Calculated collision position & time: | |

## Predict the collision Position and time for real toy cars

|  |  |
| --- | --- |
| Your two cars start 4 m apart and are headed towards each other. **Record you measured velocities here**: The red car has a velocity of \_\_\_\_\_\_\_ m/s, and the blue car has a velocity of \_\_\_\_\_\_\_ m/s.  We will start the **red  /  blue** (circle one) car at 0 m, and the **red  /  blue** (circle one) car at 4.0 m. | |
| Fill in the Data table | Plot a graph of your motion |
| |  |  |  | | --- | --- | --- | | Time (s) | Red car position (m) | Blue car position (m) | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  |   Collision position & time: | Collision position & time: |
| Draw a mOTION MAP of your motion | |
| Collision position & time: | |
| Solve using Two equations and two unknows | |
| Red car equation:  Blue car equation:  Combine equations, rearrange, and solve for the collision location and time.  Calculated collision position & time: | |