Collision Practice Problems: Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A 1850 kg sedan stopped at a tragic light is struck from the rear by a compact car with a mass of 975 kg. The two cars become entangled (inelastic) as a result. If the compact car was moving at a velocity of 22 m/s, what is the velocity of the entangled mass after the collision?

**Chart:**

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| **Formula:** |
| **Plug in numbers :** |
| **Answer:** |

2. A 0.015 kg marble sliding to the right at 0.225 m/s on a frictionless surface makes an elastic head on collision with a 0.024 kg bouncy ball moving to the left at 0.18 m/s. After the collision, the marble moves to the left at 0.16 m/s. What is the velocity of the bouncy ball after the collision?  
**Chart:**

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| **Formula:** |
| **Plug in numbers :** |
| **Answer:** |

3. A dry cleaner throws a 22 kg bag of laundry into a stationary 9.0 kg cart. The cart and the laundry bag begin moving at 3.0 m/s to the right (inelastic). What was the velocity of the bag before the collision?

**Chart:**

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| **Formula:** |
| **Plug in numbers :** |
| **Answer:** |

4. A 16.0 kg canoe moving to the left at 12 m/s makes an elastic head-on collision with a 4.0 kg raft moving to the right at 6.0 m/s. After the elastic collision, the raft moves to the left at 22.7 m/s. What is the velocity of the canoe after the collision?

**Chart:**

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| **Formula:** |
| **Plug in numbers :** |
| **Answer:** |