**Conservation of Momentum**

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| 2.89 m/s | 1. A 1200 Kg car going 13 m/s collides with a 4200 Kg truck at rest. Their bumpers lock. What is their speed afterwards? |
| -.125 m/s | 2. A 60 Kg person running 3 m/s collides head on with a 100 Kg person running -2 m/s (The other way) What is their final velocity if they stick together? |
| -.35 m/s | 3. A 50 Kg ice skater at rest throws a 5 Kg shot put at a velocity of 3.5 m/s. What is the recoil velocity of the skater? |
| 11 m/s | 4. A 1200 Kg car going 15 m/s rear-ends with a 800 Kg car going 5 m/s in the same direction. Their bumpers lock. What is their speed afterwards? |
| 43.8 m/s | 5. A 2000 Kg airplane going 45 m/s fires a 2 Kg shell forward at a speed of 1200 m/s. What is the final velocity of the plane? (Planes crashed because of this!) |
| .629 m/s | 6. A 14.5 g bullet traveling 783 m/s horizontally strikes an 9.24 Kg block of wood at rest on a level frictionless table. The bullet goes through the block, but is traveling only 382 m/s in the same direction after the collision. What is the velocity of the block after the collision? (Assume the block loses no mass) |
| 5.4 m/s | 7 Bumper car A (326 Kg) with velocity 3.7 m/s collides with the rear of car B (536 Kg) which has a velocity of 2.4 m/s in the same direction. After the collision, car A has a velocity of -1.2 m/s. What is the velocity of car B after the collision? |