

4. A 1500-kg car traveling east at 20 m/s collides with a moving 2500-kg truck. After they collide, the two interlock and move together with a velocity of 30 m/s west. What was the original velocity of the truck?

5. A 4-kg gun shoots a 0.1-kg bullet at 400 m/s. If it takes you 0.1 second to stop the gun from recoiling, then what is the average force you must exert?

6. A 0.2 kg cue ball traveling to the right at 3 m/s collides head on with the **8** ball, which is initially at rest. After they collide, the **8** ball moves to the right at 2 m/s. How fast, and in what direction will the cue ball be moving after the collision?

