Chapter 3.3 (Pg. 91) Name _____

Motion, Forces, and Simple Machines Virtual LAB

How is momentum conserved in a vehicle collision?

Question 1: In a 50 km/h head-on crash test, the steering column of passenger car 1 moved 3 cm upward and 2 cm rearward. The steering column of passenger car 2 moved 6 cm up and 24 cm toward the rear of the car. Which of the two cars would protect people better in a crash? Explain your answer.

Question 2: Why does a properly adjusted head restraint help prevent head and neck injuries to occupants in rear-end collisions? Explain your answer in terms of the law of conservation of momentum.

Question 3: A skater wearing in-line skates (no friction) is standing in the middle of the aisle inside a bus and is not holding on to anything. Which way would the skater move in relation to the bus as it pulls away from the bus stop? Explain your answer.

Question 4: You drive a bumper car into another bumper car whose driver has a much large body mass than you do. Who experience more of a jolt, you or theother driver? Explain your answer.

How is momentum conserved in a vehicle collision?

Vehicle Data	Collision 1	Collision 2
Vehicle 1, Mass		
Vehicle 1, Speed Before		
Vehicle 1, Speed After		
Vehicle 1, Direction of Motion Before		
Vehicle 1, Momentum Before		
Vehicle 1, Direction of Motion After		
Vehicle 1, Momentum		
Vehicle 2, Mass		
Vehicle 2, Speed Before		
Vehicle 2, Speed After		
Vehicle 2, Direction of Motion Before		
Vehicle 2, Momentum Before		
Vehicle 2, Direction of Motion After		
Vehicle 2, Momentum		