

Name:

Date:

Work each of the following problems. SHOW ALL WORK.

1. A 1,200 kg car travels at 20 m/s. What is its momentum?

2. If the car in the previous question slows to a stop, what is its final momentum?

3. What is the change in momentum of the car in the previous questions?

4. If the car slows down in 5 seconds, what force does the car experience in braking?

Work each of the following problems. SHOW ALL WORK.

5. While catching an egg, the receiver “gives” with her hands and arms, making the stopping time of the egg about seven times longer than if it were caught stiff-armed. By what factor does the force encountered by the egg change?

6. What is the momentum in kg m/s of a 62 g golf ball traveling at 73 m/s?

7. If the impact of the golf club on the ball in the previous question occurs over a time of 2×10^{-3} seconds, what force does the ball experience to accelerate from rest to 73 m/s?

8. How long must a tow truck apply a force of 550 N to increase the speed of a 1,200 kg car at rest to 2 m/s?