1. A student practicing for a track meet ran 250 m in 30 sec.
   a. What was her average speed?

   b. If on the following day she ran 300 m in 30 sec, by how much did her speed increase?

2. A car traveled 1025 km from El Paso to Dallas in 13.5 hr. What was its average velocity?

3. How fast was a plane flying if it traveled 400 km in 30 min?

4. If the average speed of a car is 45 km/hr, how far can it travel in 40 min?

5. A driver starts his parked car and within 5 sec reaches a velocity of 54 km/hr as he travels east. What is his acceleration?

6. A car traveling north with a velocity of 30 m/sec slows down to a velocity of 10 m/sec within 10 sec. What is the car’s deceleration?

7. A steel ball whose mass is 100 g is rolling at a rate of 2.8 m/sec. What is its momentum?
8. A marble is rolling at a velocity of 100 cm/sec with momentum of 10,000 g-cm/sec. What is its mass?

9. An object whose mass is 3 kg is fired from a cannon, giving it a forward momentum of 1050 kg-m/sec. What is its velocity?

10. What is the force on a 1-kg ball that is falling freely due to the pull of gravity? (neglect air resistance)

11. A man has a mass of 66 kg on the Earth. What is his weight?

12. A person weighs 540 N on the Earth. What is the person’s mass? What would the person weigh on the moon where the acceleration due to gravity is 1.67 N/kg?

13. An originally stationary car with a mass of 1500 kg reaches a velocity of 15 m/sec 5 sec after starting. What is the car’s acceleration? How much force was required to reach this acceleration?
14. An astronaut has a mass of 50 kg.

   a. How much does she weigh before liftoff?

   b. When her space vehicle is 6400 km above the Earth’s surface, she will weigh one quarter of what she weighed on Earth.

      1. What does she weigh at that point in space?

      2. What is the acceleration on her mass at that point in space?