1) A person is walking at 2 m/s. They reach a new speed of 4.5 m/s in a time of 5 s. What was their acceleration?

2) A car started from rest and accelerated at 5 m/s². How far did it travel in 12 s?

3) In a garage, a car battery falls off a shelf. It hits the floor 0.51 s later. How high was the shelf?

What was the speed of the battery as it hit the floor?

$$d = vt \qquad v_f = v_i + at \qquad d = v_it + (1/2)at^2 \qquad g = 9.8 \text{ m/s}^2$$

4) A car is travelling at 52 mph (miles per hour). How far does it travel in 43 minutes?

5) You will design this problem. Fill in the missing information. Solve the problem.

A _____ is moving at a speed of _____ m/s. It accelerates
       (noun)   (number)

at a rate of _____ m/s² for _____ s. What is the new speed of the _____?
          (number)   (number)

$$d = vt \qquad v_f = v_i + at \qquad d = v_i t + (1/2)at^2 \qquad g = 9.8 \text{ m/s}^2$$

6) You will also design this problem. Write out a word problem where you give the initial speed, final speed and time and ask for the acceleration. Then, solve the problem.

7) A Monroe student runs 10 yards in 3.87 s. A yard is 3 feet. There are 5280 feet in a mile. What was the student's speed in mph (miles per hour)?

$$d = vt \qquad v_f = v_i + at \qquad d = v_i t + (1/2)at^2 \qquad g = 9.8 \ m/s^2$$

8) A student starts from rest and accelerated at 3 m/s² for 4 s. They then remain at their new speed for 7 s. How far did they travel all together?

9) On another planet, a space vehicle battery falls off the shelf of a garage. It falls a distance of 25 m in 8 s. What is the acceleration due to gravity on this planet?

Answers: 1) 0.5 m/s² 2) 360 m 3) 1.27 m 5 s 4) about 37 miles 5) answers will vary
6) answers will vary 7) 5.3 mph 8) 108 m 9) 0.78 m/s²