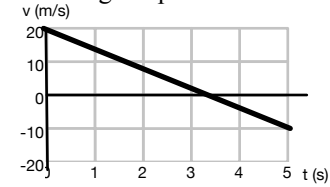# Cycle 14 Kinematics

1 Basic Kinematics

1. Using the graph below, calculate the change in position.

2. The astronaut experienced an acceleration of 20 m/s^2 upward for 10 seconds, starting from rest. What was her final velocity?

3. A truck, moving to the right, applies its brakes which provide an acceleration of 8 m/s^2 to the left. It comes to rest after traveling 36 m. What was its initial velocity?

1 m/s →

30 m

t = 0   t = 5 s
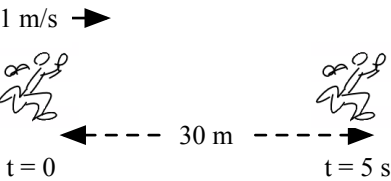
4. Calculate the acceleration of the sprinter.

5. A ball is dropped from rest and experiences an acceleration of 10 m/s^2 downward due to gravity. How fast will it be moving after 4 seconds?

6. A ball is thrown upwards at 30 m/s, coming to rest in 3 seconds. How far up did it go?