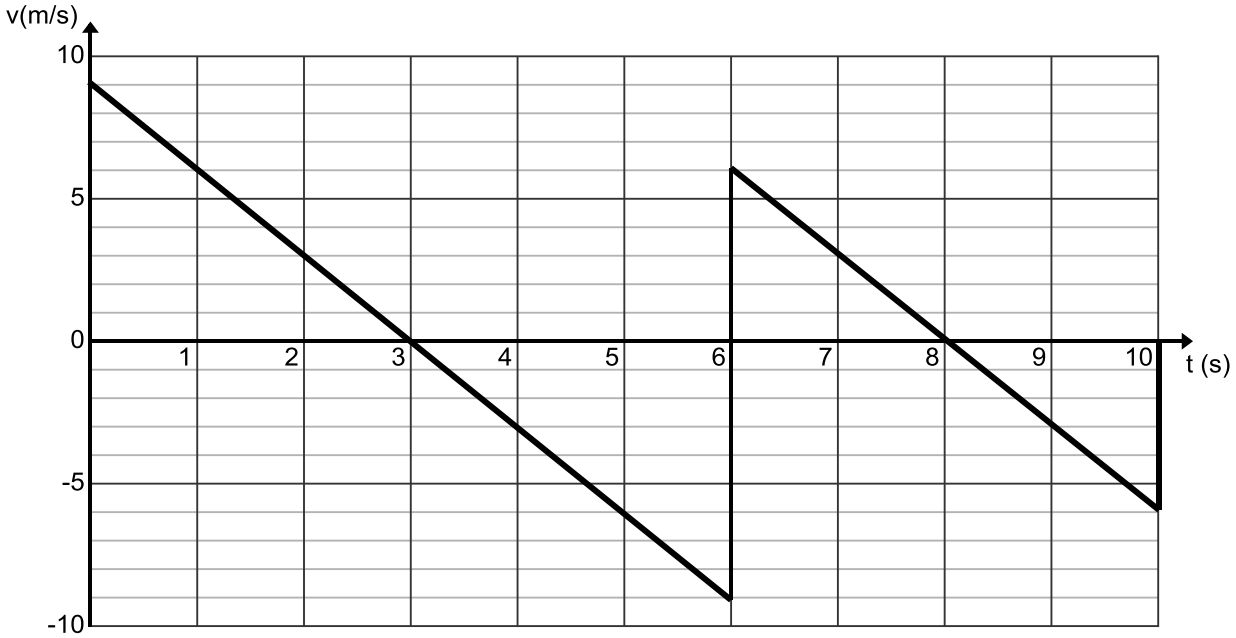
Higher Physics Assessment 002

1. An experimental aircraft flies 100 km due east then 60 km due south and finally 6 km due east again.
   The flight lasts one hour.
   a. Calculate the average speed of the flight.
   b. Find the resultant displacement of the flight.
   c. Calculate the average velocity for the flight.
   d. Find the magnitude and direction of the final vector that would make the average velocity of the flight equal to zero.

2. A small physics cart is pushed up a slope. The velocity time graph for the motion is recorded using a motion sensor.



   a. Calculate the acceleration of the physics cart during the first 6 seconds
   b. Calculate the distance the physics cart travelled up the slope after the first bounce
   c. Explain why the physics cart`s velocity is reduced after the first bounce