Short Assessment 1

1.

Fig. 1.1 shows the graph of speed v against time t for a train as it travels from one station to the next.
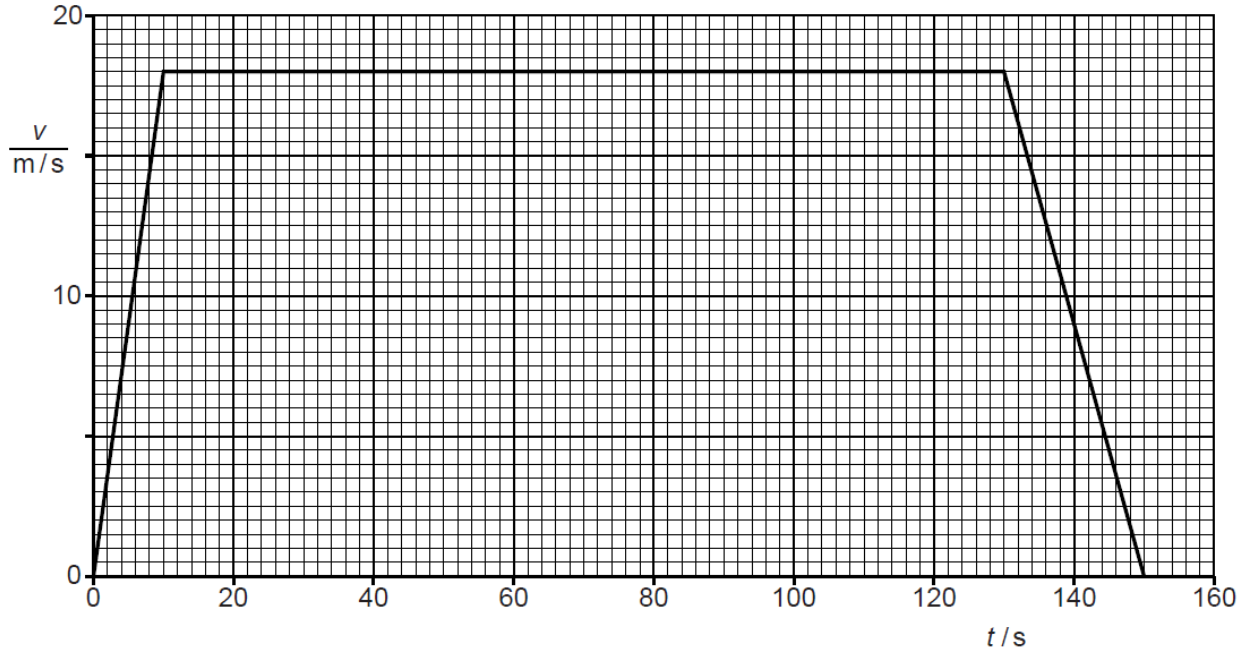

Fig. 1.1

Use Fig. 1.1 to calculate

(i) the distance between the two stations,

distance = …………………………………… [4]

(ii) the acceleration of the train in the first 10 s.

acceleration = …………………………………… [2]

2. A car is moving with a constant acceleration.

   Its velocity increases from 10 m/s to 34 m/s in 6 seconds.

   Calculate the acceleration of the Car.

   (2 marks)

3. A suitcase is moved from a lower shelf in a cupboard to a higher shelf through a vertical height of 1.8 m.

   In the process the box gains 90 J of gravitation potential energy.

   What is the mass of the suitcase?

   (3 marks)

4. An object is thrown with speed of 8 m/s.

   The kinetic energy of the object just after throwing is 38.4 J.

   Calculate the mass of the object.

   (3 marks)

5. A stone of mass 2kg is dropped from a height of 200 m above the ground.

(a) Calculate the gravitational potential energy lost by the object as it falls through the 200m height.

(2 marks)

(b) Calculate the speed with which the stone hits the ground.

(3 marks)

(c) State the assumption you made in answering part (b) above.

(1 marks)

- End of Test -