

- Which apparatus is needed to get an accurate measurement?

- 3** A piece of paper torn out of an exercise book is shown.

describes how a massive object affects the space around it, including the size and direction of the force it would exert on other objects placed in that space.

A gravitational charge
B gravitational field
C gravitational mass
D gravitational potential energy

- A** acceleration and force
B acceleration and pressure
C density and force
D density and pressure

- A** 4.0s **B** 4.4s **C** 7.5s **D** 12s

- [1]

- | | | | |
|--------------|--------|-------------|-------------------------|
| acceleration | mass | momentum | electric field strength |
| | energy | temperature | |

[2]

- (i) Show that the initial velocity of the tennis ball is 9.9 m/s upwards.

[3]

- (ii) Calculate the momentum of the tennis ball as it leaves the tennis player's hand.

momentum = [2]

[Total: 8]

1 (a) Circle the vector quantities in the list.

acceleration mass speed time velocity

[1]

(b) Fig. 1.1 shows the speed–time graph for a train travelling from station A to station B.

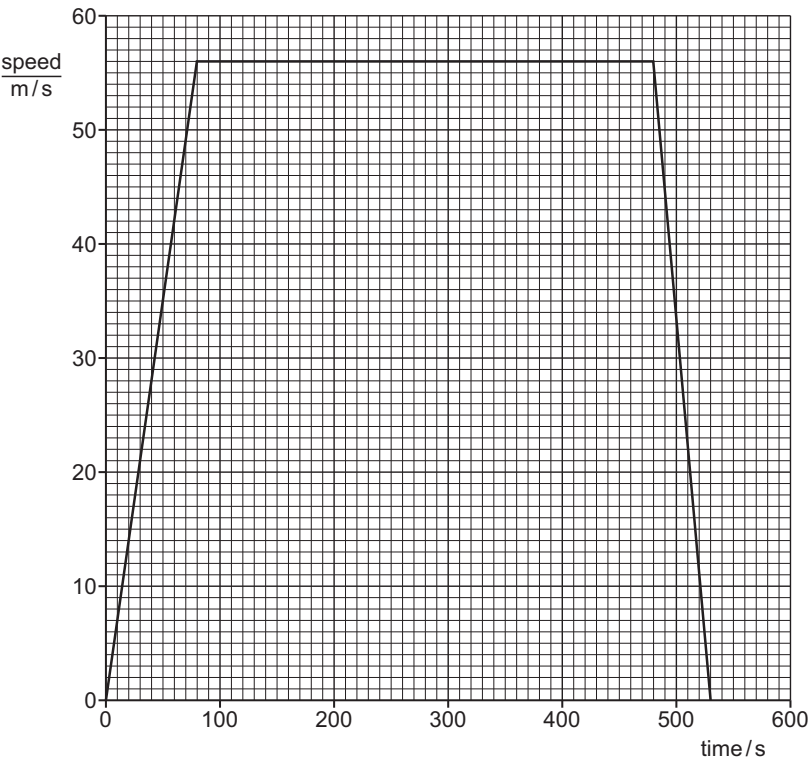


Fig. 1.1

(i) State the maximum speed of the train.

maximum speed = [1]

(ii) Describe the motion of the train between station A and station B.

.....
.....
..... [2]

(iii) Calculate the distance between station A and station B.

distance = [3]

(iv) On a different day, the train takes 650 s to travel between station A and station B.

Suggest **one** change to the motion of the train that leads to this longer journey time.

.....
..... [1]

[Total: 8]

1 In which row are quantities correctly categorised into scalar quantities and vector quantities?

	scalar quantities	vector quantities
A	mass and energy	weight and acceleration
B	gravitational field strength and time	force and electric field strength
C	speed and momentum	distance and force
D	distance and energy	velocity and temperature

1 Which is a vector quantity?

- A density
B mass
C pressure
D weight