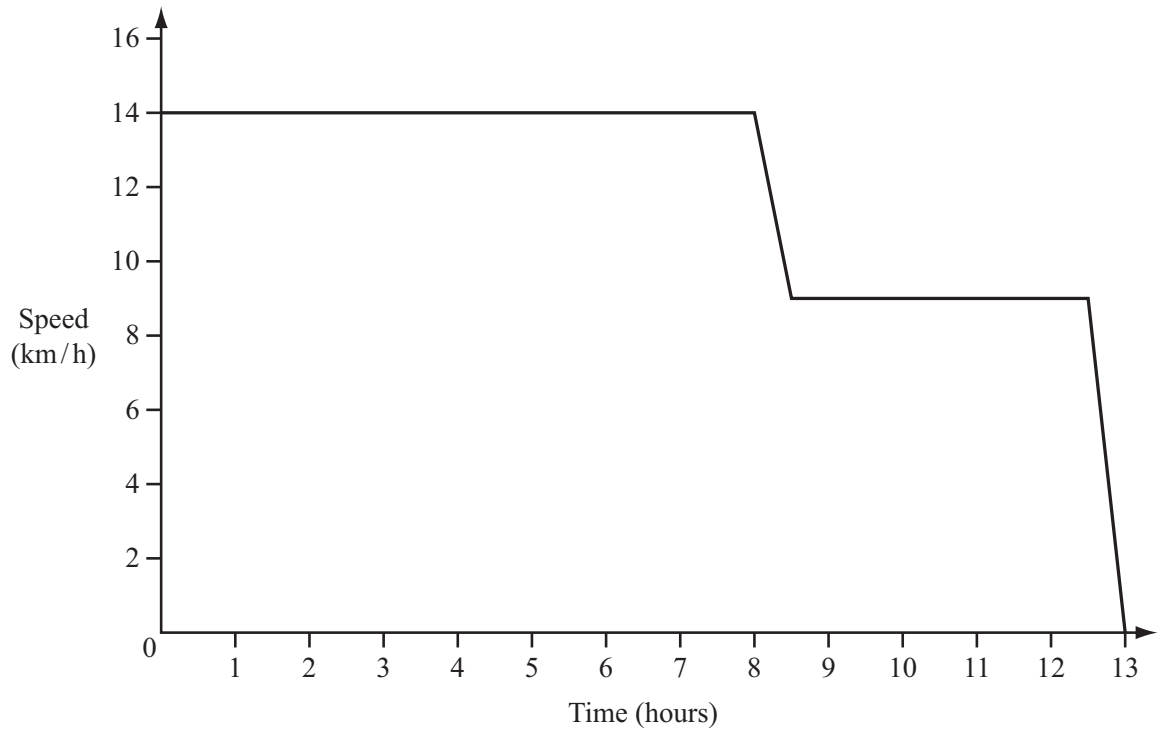


### Dist Speed Time 3

- 1) A container ship travelled at 14 km/h for 8 hours and then slowed down to 9 km/h over a period of 30 minutes.

It travelled at this speed for another 4 hours and then slowed to a stop over 30 minutes.

The speed-time graph shows this voyage.



- (a) Calculate the total distance travelled by the ship.

*Answer(a)*

km [4]

- (b) Calculate the average speed of the ship for the whole voyage.

*Answer(b)*

km/h [1]

### Dist Speed Time 3

- 2) A bus leaves a port every 15 minutes, starting at 09 00.  
The last bus leaves at 17 30.

How many times does a bus leave the port during one day?

*Answer*

[2]

- 3) A cruise ship travels at 22 knots.

[1 knot is 1.852 kilometres per hour.]

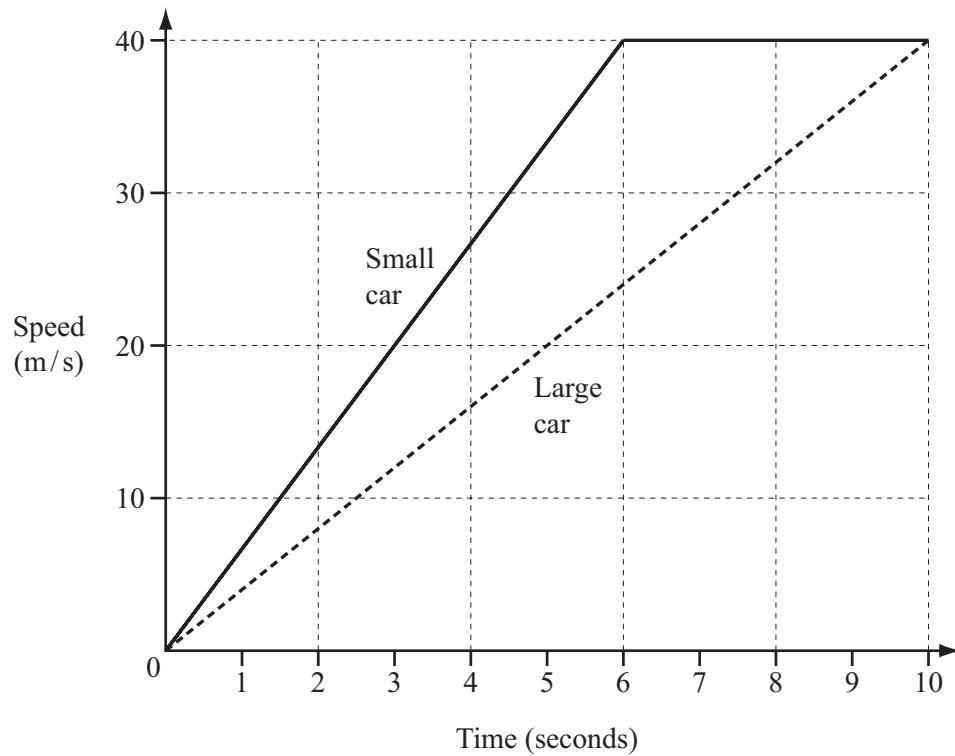
Convert this speed into metres per second.

*Answer*

m/s [3]

### Dist Speed Time 3

4)



A small car accelerates from 0 m/s to 40 m/s in 6 seconds and then travels at this constant speed.  
A large car accelerates from 0 m/s to 40 m/s in 10 seconds.

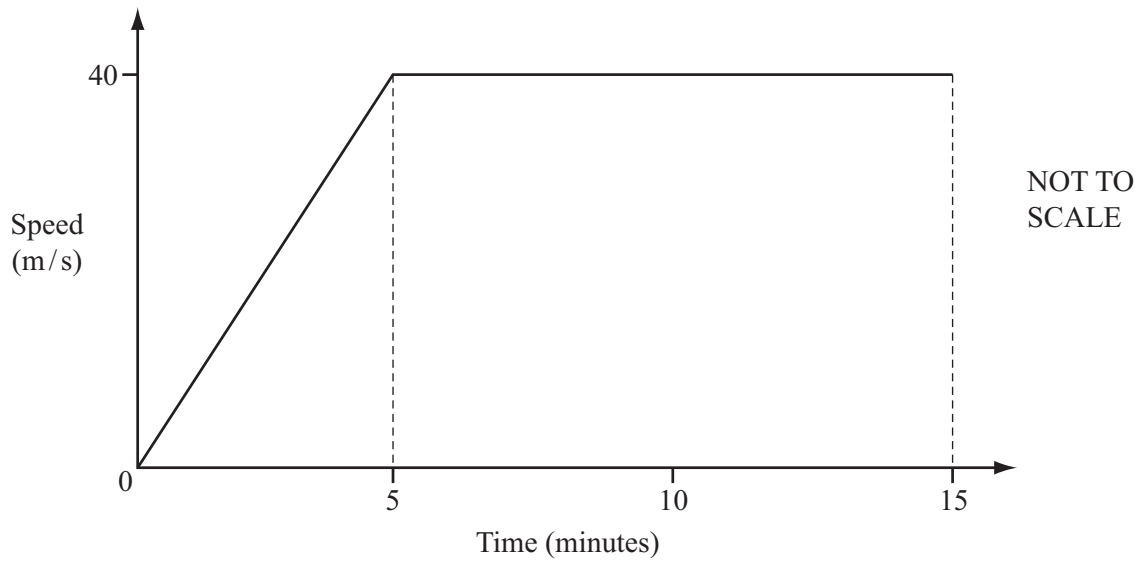
Calculate how much further the small car travels in the first 10 seconds.

*Answer*

m [4]

### Dist Speed Time 3

5)



The diagram shows the speed-time graph for the first 15 **minutes** of a train journey. The train accelerates for 5 minutes and then continues at a constant speed of 40 metres/**second**.

- (a) Calculate the acceleration of the train during the first 5 minutes.  
Give your answer in  $\text{m/s}^2$ .

*Answer(a)*

$\text{m/s}^2$  [2]

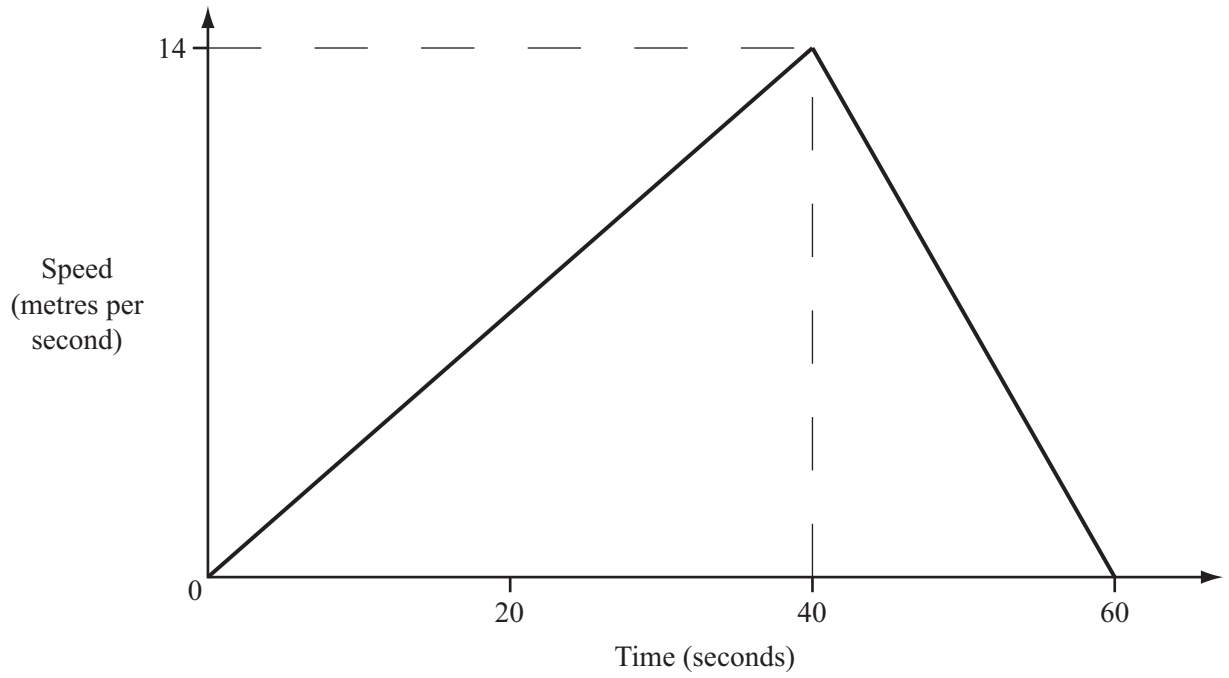
- (b) Calculate the average speed for the first 15 minutes of the train journey.  
Give your answer in  $\text{m/s}$ .

*Answer(b)*

$\text{m/s}$  [3]

### Dist Speed Time 3

6)



The diagram shows the speed-time graph of a bus journey between two bus stops.  
Hamid runs at a constant speed of 4 m/s along the bus route.  
He passes the bus as it leaves the first bus stop.  
The bus arrives at the second bus stop after 60 seconds.

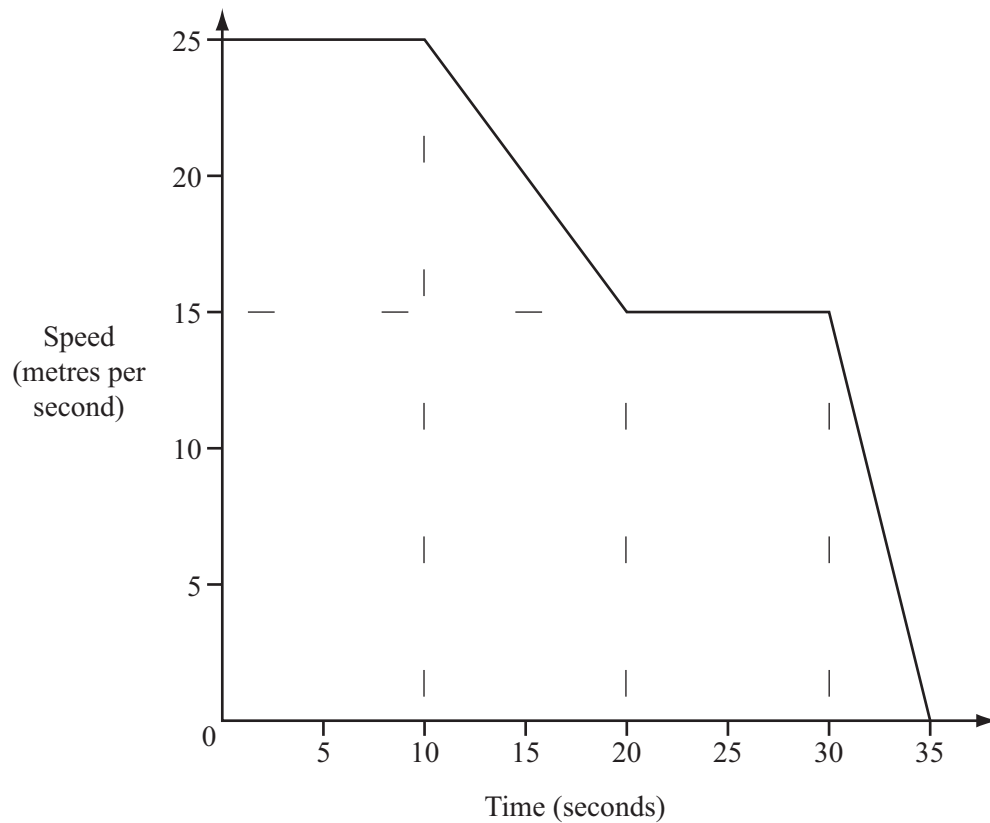
How many metres from the bus is Hamid at this time?

*Answer*

m [3]

### Dist Speed Time 3

7)



The diagram shows the speed-time graph for the last 35 seconds of a car journey.

**(a)** Find the deceleration of the car as it came to a stop.

*Answer(a)*

$\text{m/s}^2$  [1]

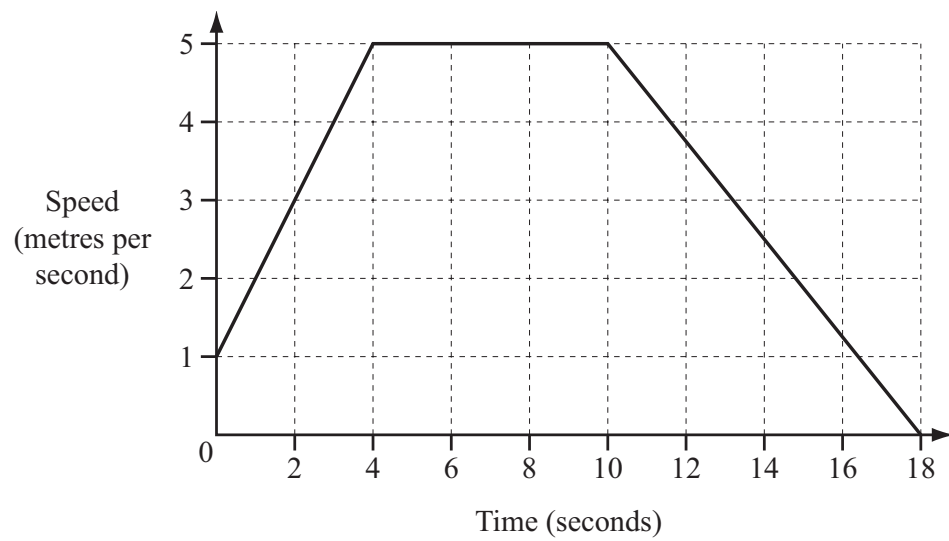
**(b)** Calculate the total distance travelled by the car in the 35 seconds.

*Answer(b)*

$\text{m}$  [3]

### Dist Speed Time 3

8)



The diagram shows the speed-time graph for the last 18 seconds of Roman's cycle journey.

**(a)** Calculate the deceleration.

*Answer(a)*

$\text{m/s}^2$  [1]

**(b)** Calculate the total distance Roman travels during the 18 seconds.

*Answer(b)*

$\text{m}$  [3]