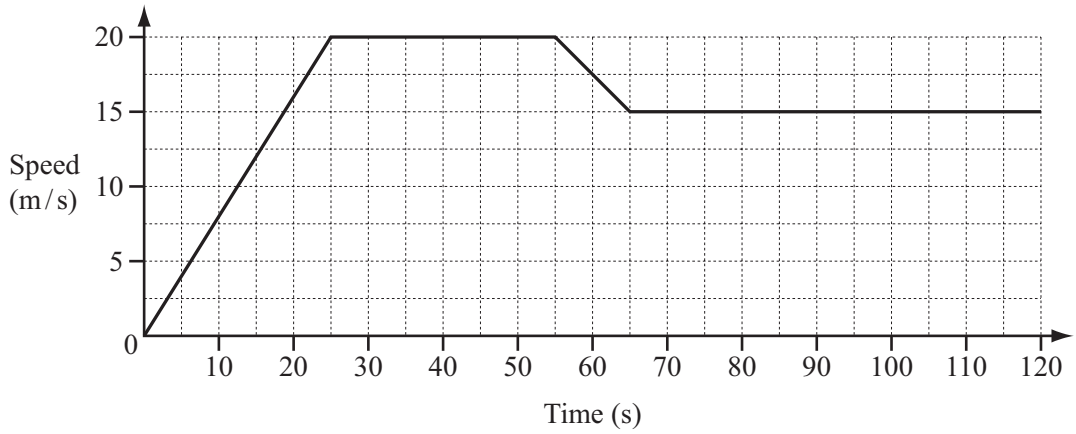
Dist Speed Time 2

1)



The diagram shows the speed-time graph for the first 120 seconds of a car journey.

(a) Calculate the acceleration of the car during the first 25 seconds.

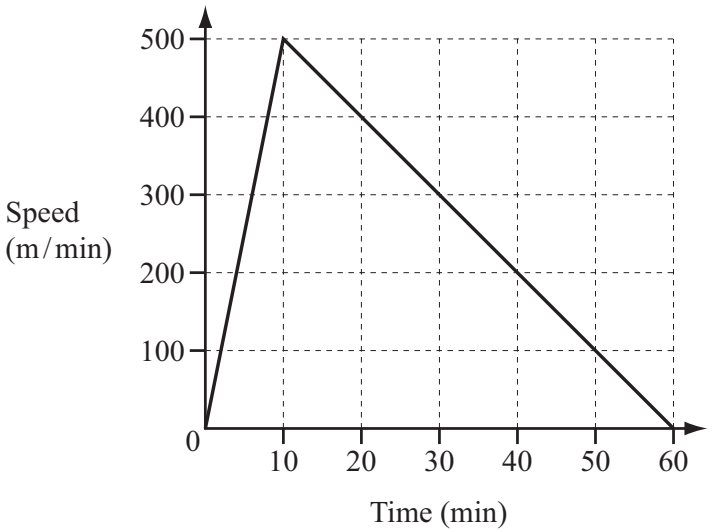
Answer(a) m/s^2 [1]

(b) Calculate the distance travelled by the car in the first 120 seconds.

Answer(b) m [4]

Dist Speed Time 2

2)



The diagram shows the speed-time graph for a boat journey.

(a) Work out the acceleration of the boat in metres/minute^2.

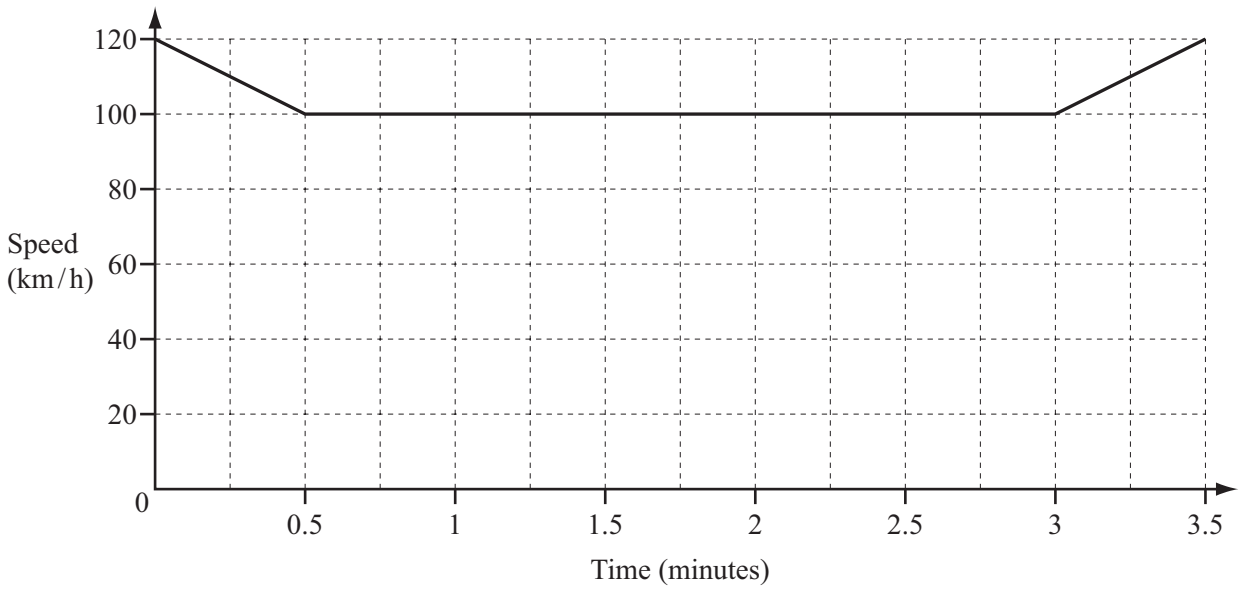
Answer(a) m/min^2 [1]

(b) Calculate the total distance travelled by the boat.
Give your answer in **kilometres**.

Answer(b) km [2]

Dist Speed Time 2

3)



The diagram shows the speed-time graph for part of a car journey.
The speed of the car is shown in kilometres/**hour**.

Calculate the distance travelled by the car during the 3.5 **minutes** shown in the diagram.
Give your answer in kilometres.

Answer km [4]

Dist Speed Time 2

4) A train travels from Paris to Milan.

(a) The train departs from Paris at 2028 and the journey takes 9 hours 10 minutes.

(i) Find the time the train arrives in Milan.

Answer(a)(i) [1]

(ii) The distance between Paris and Milan is 850 km.

Calculate the average speed of the train.

Answer(a)(ii) km/h [2]

5) Amira takes 9 hours 25 minutes to complete a long walk.

(i) Show that the time of 9 hours 25 minutes can be written as $\frac{113}{12}$ hours.

Answer (b)(i)

[1]

(ii) She walks $(3y + 2)$ kilometres at 3 km/h and then a further $(y + 4)$ kilometres at 2 km/h.

Show that the total time taken is $\frac{9y + 16}{6}$ hours.

Answer(b)(ii)

[2]

5) continued

(iii) Solve the equation $\frac{9y+16}{6} = \frac{113}{12}$.

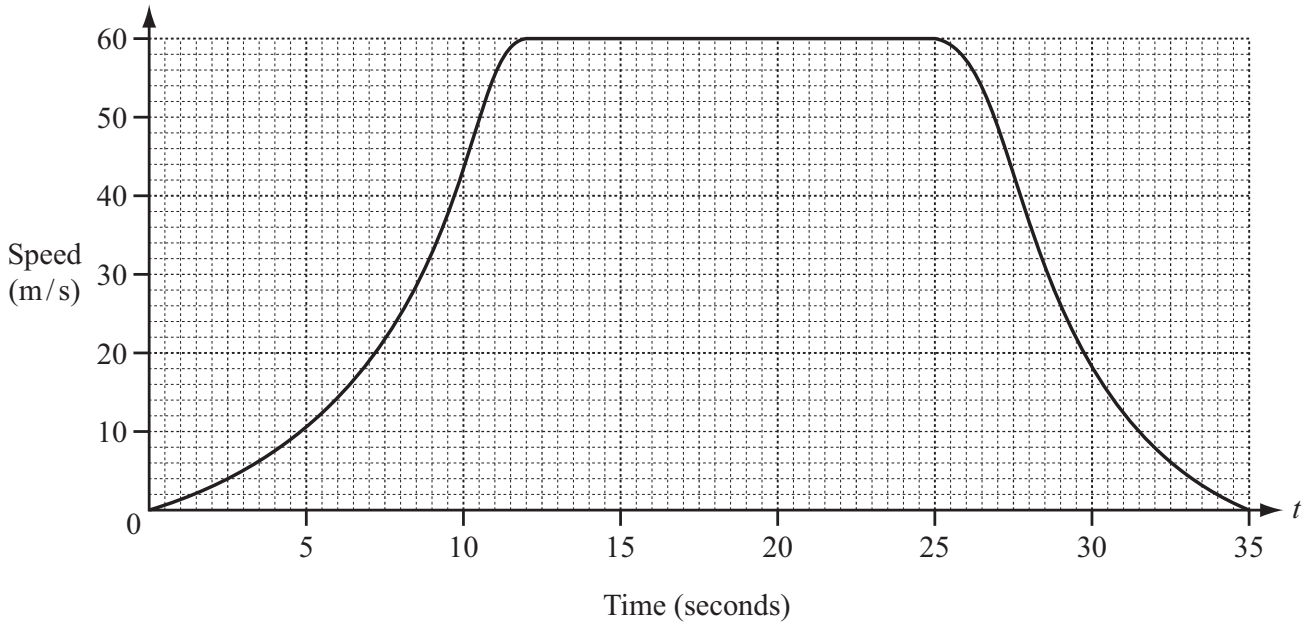
Answer(b)(iii) $y =$ [2]

(iv) Calculate Amira's average speed, in kilometres per hour, for the whole walk.

Answer(b)(iv) km/h [3]

Dist Speed Time 2

6)



The graph shows the speed of a sports car after t seconds.

It starts from rest and accelerates to its maximum speed in 12 seconds.

(a) **(i)** Draw a tangent to the graph at $t = 7$. [1]

(ii) Find the acceleration of the car at $t = 7$.

Answer(a)(ii) m/s^2 [2]

(b) The car travels at its maximum speed for 13 seconds.

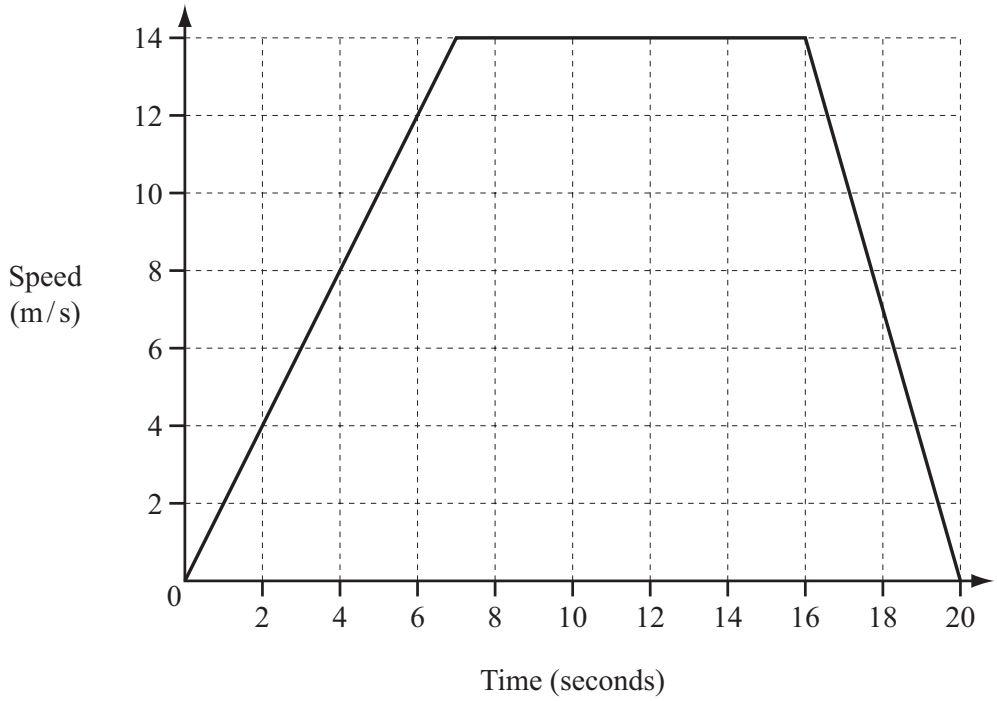
Find the distance travelled by the car at its maximum speed.

Answer(b) m [2]

Dist Speed Time 2

7) An animal starts from rest and accelerates to its top speed in 7 seconds. It continues at this speed for 9 seconds and then slows to a stop in a further 4 seconds.

The graph shows this information.



(a) Calculate its acceleration during the first seven seconds.

Answer(a) m/s^2 [1]

(b) Write down its speed 18 seconds after the start.

Answer(b) m/s [1]

(c) Calculate the total distance that the animal travelled.

Answer(c) m [3]

8) A plane flies from London to Dubai and then to Colombo.
It leaves London at 01 50 and the total journey takes 13 hours and 45 minutes.
The local time in Colombo is 7 hours ahead of London.
Find the arrival time in Colombo.

Answer(b) [2]

Another plane flies the 8710 km directly from London to Colombo at an average speed of 800 km/h.
How much longer did the plane in **part (b)** take to travel from London to Colombo?
Give your answer in hours and minutes, correct to the nearest minute.

Answer(c) h min [4]