



$$\text{Speed} = \text{Distance} / \text{Time}$$

$$\text{Average Speed} = \text{Total Distance} / \text{Total Time}$$

1. Liz takes 65 seconds to run 400m.
Calculate her average speed in m/s. [2]
0580/23/M/J/18 Q3)

2. In the book, the distance between two planets is given as 4.07×10^{12} kilometres.
The speed of light is 1.1×10^9 kilometres per hour.
Calculate the time taken for light to travel from one of these planets to the other.
Give your answer in days and hours. [3]
0580/42/M/J/12 Q5)(b)

3. Geneva and Hamburg are 864Km apart.
A plane flies from Geneva to Hamburg.
The flight takes 2 hours 20 minutes.
Calculate the average speed in kilometres per hour. [2]
0580/42/O/N/18 Q8(a)

4. Priyantha completes a 10 km run in 55 minutes 20 seconds.
Calculate Priyantha's average speed in km/h.
0580/23/O/N/10 Q14)



5. The ship takes 2 hours and 15 minutes to sail the 74 km from P to Q.

Calculate the average speed in knots. [1 knot = 1.85 km/h] [3]

0580/42/O/N/14 Q8)(d)

6. (a) Amol drives his truck at an average speed of 50km/h. He leaves at 0700 and arrives at 1115. Calculate the distance he drives [2]

(b) Priya drives her van a distance of 54km. She leaves at 1055 and arrives at 1238.

Calculate her average speed. [2]

0580/42/F/M/19 Q1)

7. A train leaves Barcelona at 21 28 and takes 10 hours and 33 minutes to reach Paris.

(a) Calculate the time the next day when the train arrives in Paris. [1]

(b) The distance from Barcelona to Paris is 827 km.

Calculate the average speed of the train in kilometres per hour.[3]

0580/21/M/J/11 Q12)



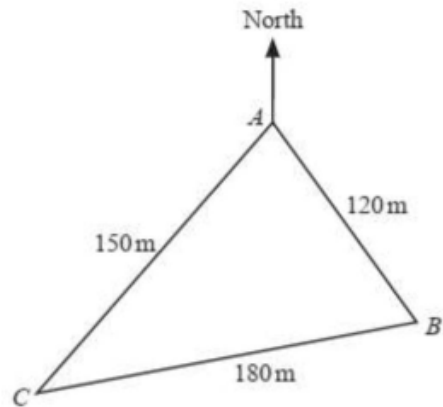
8. The distance between Prague and Vienna is 254 kilometres.
The local time in Prague is the same as the local time in Vienna.
A train leaves Prague at 15 20 and arrives in Vienna at 19 50 the same day.
Calculate the average speed of the train. [2]
0580/22/M/J/19 Q5)

9. Asif cycles a distance of 105km.
On the first part of his journey he cycles 60km in 2 hours 24 minutes.
On the second part of his journey he cycles 45km at 20km/h.
Find his average speed for the whole journey [4]
0580/43/O/N/19 Q1(d)

10. Fritz drives a distance of 381km in 2 hours and 18 minutes.
He then drives 75km at a constant speed of 30km/h.
Calculate his average speed for the whole journey. [4]
0580/22/F/M/15 Q19)



11. The diagram shows a triangular field, ABC, on horizontal ground.



Olav runs from A to B at a constant speed of 4m/s and then from B to C at a constant speed of 3m/s. He then runs at a constant speed from C to A. His average speed for the whole journey is 3.6m/s. Calculate his speed when he runs from C to A.

[3]

0580/41/O/N/19 Q5)

12. Every Monday, Sima travels by car to the library. The distance is 20km and the journey takes 23 minutes.
- (i) Calculate the average speed for the journey in kilometres per hour. [2]
- (ii) One Monday, she is delayed and her average speed is reduced to 32km/h.

Calculate the percentage increase in the journey time.

[5]

0580/41/O/N/17 Q1)(c)



13. (a) One day, Maria took 27 minutes to walk 1.8km to school.

She left home at 0748.

(i) Write down the time Maria arrived at school. [1]

(ii) Show that Maria's average walking speed was 4km/h [2]

(b) Another day, Maria cycled the 1.8km to school at an average speed of 15km/h.

(i) Calculate the percentage **increase** that 15km/h is on Maria's walking speed of 4km/h. [3]

(ii) Calculate the percentage **decrease** that Maria's cycling time is on her walking time of 27 minutes.[3]

(iii) After school, Maria cycled to her friend's home.

This took 9 minutes, which was 36% of the time Maria takes to walk to her friend's home.

Calculate the time Maria takes to walk to her friend's home [2]

0580/41/M/J/13 Q1)



14. Car A and car B take part in a race around a circular track.

One lap of the track measures 7.6km.

Car A takes 2 minutes and 40 seconds to complete each lap of the track.

Car B takes 2 minutes and 25 seconds to complete each lap of the track.

Both cars travel at a constant speed.

(a) Calculate the speed of car A.

Give your answer in kilometres per hour. [3]

(b) Both cars start the race from the same position, S, **at the same time.**

(i) Find the time taken when both car A and car B are next at position S at the same time.

Give your answer in minutes and seconds. [4]

(ii) Find the distance that car A has travelled at this time [2]

0580/42/O/N/19 Q9)

15. A car of length 4.3 m is travelling at 105km/h. It passes over a bridge of length 36m.

Calculate the time, in seconds, it takes to pass over the bridge **completely.** [3]

0580/21/M/J/16 Q18)



16. (i) Show that 126km/h is the same speed as 35m/s . [1]

(ii) The train has a total length of 220m .

At 09 30, the train crossed a bridge of length 1400m .

Calculate the time, in seconds, that the train took to completely cross the bridge. [3]

0580/43/O/N/17 Q3(b) (ii)

17. (i) The distance from London to Ashford is 90 km .

A train takes 36 minutes to reach from London to Ashford

Work out the average speed, in km/h , of the train between London and Ashford. [3]

(ii) During the journey, the train takes 35 seconds to completely cross a bridge.

The average speed of the train during this crossing is 90km/h .

The length of the train is 95 metres .

Calculate the length, in metres, of this bridge. [4]

0580/43/M/J/19 Q1)



18. A train of length 105m takes 11 seconds to pass completely through a station of length 225m. Calculate the speed of the train in km/h.

0580/22/M/J/20 Q17)

Answers

Q1) 6.15	Q7) (a)8:01 am or 0801(b) 78.4	Q13) (a)(i) [0]8 15 (b) (i) 275 (ii) 73.3 (iii) 25
Q2) 154 days 4 hours	Q8) 56.4	Q14) (a)171 (b) (i) 77 [min] 20 [s] (ii) 220.4
Q3) 370	Q9) 22.6	Q15) 1.38
Q4) 10.8	Q10) 95	Q16) 46.3
Q5) 17.8	Q11) (a) 4.29	Q17) (a)(i)150 km/h (ii)780
Q6) (a)212.5 (b) 31.5	Q12) (i) 52.2 (ii) 63.0	Q18) 108