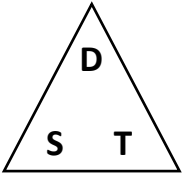# Level 3 Maths Revision – Speed, Distance and Time

A: Calculating Speed, Distance and Time

Reminder

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}} \qquad \text{Distance} = \text{Speed} \times \text{Time} \qquad \text{Time} = \frac{\text{Distance}}{\text{Speed}}$$

Examples

a) A bus travels 68 miles in 2 hours. Calculate its average speed.

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{68}{2} = 34\text{mph}$$

b) An aeroplane is flying from Edinburgh to Rome, a distance of 1200 miles. If the aeroplane flies at an average speed of 300mph, how long will this take?

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{1200}{300} = 4\text{ hours}$$

c) Eric walked at an average speed of 4.8km/h for three hours. How far has he walked?

$$\text{Distance} = \text{Speed} \times \text{Time} = 4.8 \times 3 = 14.4\text{km}$$

Now try these examples. Remember to show all your working!

1) A ship travels 72km in 3 hours. Calculate its average speed.

2) How long will it take a bus to travel 180 miles at an average speed of 45mph?

3) A truck travels for five hours at an average speed of 53mph. How far has it travelled?

4) A train travels at 125mph for three hours. How far has it travelled?

5) A car travels at an average speed of 80km/h. How long will it take to travel 400km?

6) A cyclist travels 44 miles in 4 hours. Calculate her average speed.

B: Converting hours and minutes to decimal fractions

Reminder

15 minutes = ¼ hour = 0.25 hours

30 minutes = ½ hour = 0.5 hours

45 minutes = ¾ hour = 0.75 hours

Copy and complete this table: -

Decimal fraction	Hours and minutes
2.75 hours	
4.5 hours	
8.25 hours	
	4 hours 15 minutes
	3 hours 45 minutes
	2 hours 30 minutes

C: Using decimal fractions of an hour

Examples

a) On a test track a car travel 34 miles in 15 minutes. Calculate its average speed.

15 minutes = 0.25 hours

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{34}{0.25} = 136\text{mph}$$

b) A bus leaves Stirling and travels at an average speed of 56mph for 2 hours and 45 minutes. How far has it travelled in this time?

2 hours 45 minutes = 2.75 hours

Distance = Speed × Time = 56 × 2.75 = 154 miles

c) How long will it take a boat to sail 195km at an average speed of 30km/h?

Give your answer in hours and minutes.

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{195}{30} = 6.5 \text{ hours} = 6 \text{ hours } 30 \text{ minutes}$$

Now try these examples:-

7) A car travels at an average speed of 72km/h for 1 hour 15 minutes. How far has it travelled?

8) A bus travels 84 miles in 1 hour 45 minutes. Calculate its average speed.

9) A plane flies at an average speed of 440km/h. How long will it take to travel 1650km? Give your answer in hours and minutes.

10) A snail crawls 18cm in 15 minutes. Calculate its average speed in cm per hour.

11) A train travels at an average speed of 84mph. How long will it take to travel a distance of 189 miles. Give your answer in hours and minutes

12) A motorcycle travels 51km in 45 minutes. Calculate its average speed.

13) Julie is going to see her Aunt. She walks to the bus stop at a speed of 6km/h. This takes her 15 minutes. She is on the bus for 45 minutes and it is travelling at an average speed of 48km/h. Finally, she gets a train. The train travels at an average speed of 108 km/h for 3 hours and 30 minutes. How far has Julie travelled altogether?

14) Archie is driving from Glasgow to Inverness. It is a distance of 145 miles. He left Glasgow at 8:00am and travels at an average speed of 58mph. What time will he arrive in Inverness?

15) A train travels the first 10 miles of its journey in 15 minutes. The next 160 miles take 2 hours. The last 20 miles take 15 minutes. Calculate the train's average speed over the whole trip.