# I know the relationship between speed, distance and time (Level 7/8)

**Section A:** For each question work out the speed, distance or time travelled. (L7)

1.  A man walking takes 2 hours to walk 10 miles. How fast did he walk?

    _____mph

2.  A policeman took 2 hours to travel 100 miles. What speed was he travelling at?

    _____mph

3.  A girl ran 105 metres in 15 seconds. What was her speed?

    _____m/s

4.  What distance would a car travel after 4 hours travelling at 60mph?

    _____miles

5.  Find the distance travelled by a train travelling at 140 km/h for 6 hours.

    _____km

6.  If a person runs at 5 m/s, how long will it take that person to run 300 metres?

    _____secs

7.  A horse travels at 12 km/hour. How long will it take to travel 18km?

    _____hours

8.  A cyclist took 1.5 hours to travel 24 km. What speed was the cyclist travelling at?

    _____km/h

9.  How far would an athlete run travelling at 8 m/s for one minute?

    _____metr es

10. Find the distance travelled by a horse running at 20 km/h for 30 minutes.

    _____km

**Section B:** For each question work out the speed, distance or time travelled. (L7)

1.  A car travels 50 miles in 1 hour and 15 minutes. Work out its average speed

    _____mph

2.  A car travels at 60mph for 2 hours and 40 minutes. How far has it travelled?

    _____miles

3.  A car travels at 72 mph for 2 hour and 20 minutes. How far has it travelled?

    _____miles

4.  At a health club Tanya uses a treadmill for a quarter of an hour and walks a distance of 1.3 miles. At what speed, in miles per hour has she set the treadmill?

    _____mph

**5.** The distance from the bus terminals to Amy's house is 3.5 kilometres. The journey takes 8 minutes.. Calculate the average speed of the bus in kilometres per hour.

_____km/h

**Section C:** Using the skills learnt today, can you now attempt the GCSE questions? (L8)

1.

Harry drives 182 miles.
His average speed is 35 miles per hour.

How long does the journey take?
Give your answer in hours and minutes.

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Answer ...................... hours ..................... minutes

**(Total 4 marks)**

**2.** The diagram shows a map of three paths *AB, AC* and *AD* through a wood.



(a) A rambler wants to walk towards her house from point *A*.
Her house is to the north-west of the wood.

Which path should she take?

Answer ....................................................

(1)

(b) A warden wants to know the length of the path from *D* to *A*.
He walks along the path.
It takes him 40 minutes.
He knows that he walks at 3 miles an hour.

How long is the path?

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Answer .......................................... miles

(2)

**3.** Ellie drives 169 miles from Sheffield to London.

She drives at an average speed of 65 miles per hour.
She leaves Sheffield at 6:30 am.

Does she arrive in London before 9:00 am?
You **must** show your working.

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(Total 4 marks)

**4.**

Two towns, A and B, are connected by a motorway of length 100 miles and a dual carriageway of length 80 miles as shown.
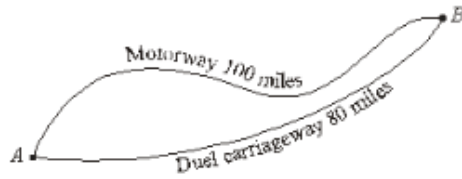


Jack travels from A to B along the motorway at an average speed of 60 mph.
Fred travels from A to B along the dual carriageway at an average speed of 50 mph.
What is the difference in time between the two journeys?
Give your answer in minutes.

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Answer ................................................. minutes

**(Total 4 marks)**

**5.**

The speed limit through some roadworks is 50 mph.

Cameras recorded the time taken for a car to travel 600 m through the roadworks as 27 seconds.

10 mph is approximately 4.47 m/s

Was the car speeding through the roadworks?
You **must** show your working.

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**(Total 4 marks)**

**6.**

Susan completes a journey in two stages.
In stage 1 of her journey, she drives at an average speed of 80 km/h and takes 1 hour 45 minutes.

(a)   How far does Susan travel in stage 1 of her journey?

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Answer ................................................. km

**(2)**

(b)   Altogether, Susan drives 190 km and takes a total time of 2 hours 15 minutes.
What is her average speed, in km/h, in **stage 2** of her journey?

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Answer ................................................. km/h

**(2)**
**(Total 4 marks)**

**7.**   Kelly runs a distance of 100 metres in a time of 10.52 seconds.

The distance of 100 metres was measured to the nearest metre.

The time of 10.52 seconds was measured to the nearest hundredth of a second.

(a) Calculate the upper bound for Kelly's average speed. Write down all the
figures on your calculator display

Answer …………………………………………….. metres per second

(3)

(a) Calculate the lower bound for Kelly's average speed. Write down all the
figures on your calculator display

Answer …………………………………………….. metres per second

(3)
(Total 6 marks)