Exam Style Questions

Speed, distance, time

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed
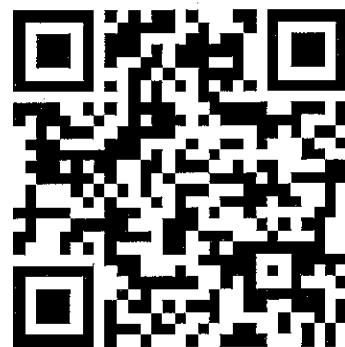
Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

www.corbettmaths.com/contents

Video 299

1. A car drives 120 miles in 3 hours.

Calculate the average speed, in mph, of the car.

$$S = \frac{d}{t} \qquad S = \frac{120}{3}$$

...........40...........mph

(2)

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2. A lorry travels 100 miles at an average speed of 25 mph.

Work out how long the journey lasts.

$$t = \frac{d}{s}$$

$$t = \frac{100}{25}$$

...........4...........hours

(2)

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3. A pigeon flies for 7 hours at a speed of 70 km/h.

Calculate how far the pigeon flies.

$$d = s \times t$$

$$d = 70 \times 7$$

...........490...........km

(2)

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4. Matthew jogs 300 metres at 4m/s.

Work out how long it takes Matthew.

$$t = \frac{d}{s}$$

$$t = \frac{300}{4}$$

...........75...........seconds

(2)

5. A helicopter flies 240 miles in 2 hours 30 minutes.

    Calculate the average speed, in mph, of the helicopter.

    $$S = \frac{d}{t} = \frac{240}{2.5}$$

    ....96........mph

    (2)

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6. Harry cycles 8 kilometres in 30 minutes.

    Calculate his average speed, in km/h.

    or   8 km in 30 mins
          so 16 km in 1 hour

    $$S = \frac{d}{t} = \frac{8}{0.5} = 16$$

    ....16........km/h

    (2)

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7. Edith leaves her home at 11:50 am.
    She travels 75 miles at an average speed of 30 mph.

    At what time does she finish the journey.

    $$t = \frac{d}{S}$$
    $$t = \frac{75}{30} = 2.5 \text{ hours}$$

    ....14:20........

    (3)

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8. Fiona drives for 4 hours.
    Her average speed is 25.5 mph.

    How far does Fiona drive?

    $$d = S \times t$$
    $$d = 4 \times 25.5 =$$

    ....102........miles

    (2)

9. A plane travels at an average speed of 550km/h.
   The plane travels 3300 kilometres.

   Calculate how long the plane journey took.

   $$t = \frac{d}{s} \qquad t = \frac{3300}{550}$$

   _____ 6 hours _____

   (2)

10. The distance between two cities is 2898 miles.
    The plane journey took 6 hours.

    $$\begin{array}{r} 0\ 4\ 8\ 3 \\ 6\overline{)2\,8\,9\,8} \end{array}$$

    Calculate the average speed of the plane.

    $$S = \frac{d}{t} = \frac{2898}{6} =$$

    _____ 483 mph _____

    (2)

11. Thomas drove from Junction 2 to Junction 3 on a road.
    The distance between the junctions is 12 miles and it takes 15 minutes.

    Hannah also drove from Junction 2 to Junction 3 on the same road.
    She drove at an average speed of 50 mph.

    Who has the faster speed?   Thomas   12 miles in 15 mins
    Explain your answer.   24 miles in 30 mins
                                                 48 miles in 60 mins
    Hannah = 50mph
                                                 48 mph

    Faster speed ..... Hannah .....

    Hannah drove at 50mph which was 2 mph faster
    than Thomas.

    (4)

12. Roger drives for 2 hours 15 minutes at an average speed of 36 mph.

How far does Roger drive?

$$d = s \times t$$
$$= 36 \times 2.25$$
$$= 81$$

.............81............miles

(2)

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13. Martin runs 2 kilometres in 2 minutes.

Calculate his average speed.
Give your answer in m/s

$$s = \frac{d}{t} = \frac{2000}{120} = 16.\dot{6}$$

$2\,km = 2000\ metres$
$2\ minutes = 120\ seconds$

.............$16.\dot{6}$............m/s

(3)

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14. Victoria walks 11 kilometres at a speed of 4 km/h

Calculate how long it takes Victoria.
Give your answer in hours and minutes.

$$t = \frac{d}{s}$$
$$t = \frac{11}{4} = 2.75\ hours$$

.............2............hours ....45............minutes

(3)

15. A car travels 240 kilometres in 3 hours 20 minutes.

Calculate the average speed, in km/h, of the car.

$$S = \frac{d}{t}$$

$$S = \frac{240}{3.\dot{3}}$$

...........72...........km/h

(3)

16. Richard drives 110 miles to the hotel.
His journey takes 2 ½ hours.

Work out his average speed.

$$S = \frac{d}{t} = \frac{110}{2.5}$$

...........44...........mph

(2)

17. The distance from Leek to Milton is 310 miles.
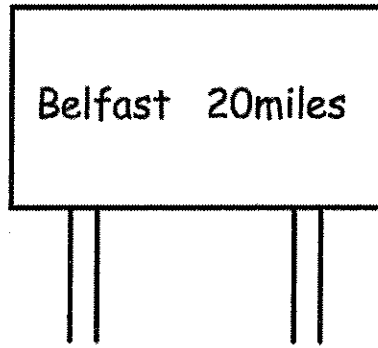A train travels this distance in 4 hours 15 minutes.

Calculate the average speed of the train.

$$S = \frac{d}{t}$$

$$S = \frac{310}{4.25} = 72.94117..$$

72.94   (to 2 dp)
...........mph

(3)

18.

Belfast 20miles

A village is 20 miles from Belfast.

Conor drives from the village to Belfast at 40mph
Kelly drives from the village to Belfast at 50mph

Work out how much longer the journey takes Conor.
Give your answer in minutes.

$t = \dfrac{d}{s}$

Conor $\quad t = \dfrac{20}{40} = 0.5$ hour

30 minutes

Kelly $\quad t = \dfrac{20}{50} = 0.4$ hour

24 minutes

.............6............minutes

(3)

19. A dog runs 100 metres in 4.98 seconds.
Estimate his average speed in kilometres per hour.

$s = \dfrac{d}{t}$

$s \approx \dfrac{100}{5} = 20 \, m/s$ ✓ metres per second found by

$0.02 \, km/s$ kilometres per second $(\div 1000)$

$1.2 \, km/min$ kilometres per minute $(\times 60)$

$72 \, km/hour$ kilometres per hour $(\times 60)$

............72............km/h

(4)

20. Lee complete a journey in three stages.

In stage 1 of his journey, he drives at an average speed of 30km/h for 45 minutes.

(a) How far does Lee travel in stage 1 of his journey?

$$d = s \times t$$
$$d = 30 \times 0.75 =$$

.........22.5.........km

(2)

In stage 2 of his journey, Lee drives at an average speed of 50km/h for 2 hours 48 minutes.

Altogether, over all three stages, Lee drives 200 km in 4 hours.

What is his average speed, in km/h, in stage 3 of his journey?

Stage 2 : $d = s \times t$
$d = 50 \times 2.8 = 140 \, km$

Stage 3: distance $200 - 22.5 - 140 = 37.5$
time 4 hours $-$ 45 mins $-$ 2 hours 48 mins $= 27$ mins

$S = \dfrac{d}{t} = \dfrac{37.5}{0.45} = 83.\dot{3}$

.........$83.\dot{3}$.........km/h

(4)

21. Convert 5km/h into m/s.

$5000 \, m/h$

$83.\dot{3} \, m/min$

$1.3\dot{8} \, m/s$

..........$1.3\dot{8}$..........m/s

(3)

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22. The speed limit on a road is 50 mph.

A car drives 19 miles in 22 minutes.

Is the car breaking the speed limit?
You must show your workings.

$22 \div 60 = 0.3\dot{6} \, hours$

$S = \dfrac{d}{t} = \dfrac{19}{0.3\dot{6}} = 51.\dot{8}\dot{1} \, mph$

yeo, the Car is breaking the speed limit by $1.\dot{8}\dot{1}$ mph

(3)

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23. Drone A has a maximum speed of 35 mph
Drone B has a maximum speed of 57 km/h

Which drone has the greater maximum speed?
Show your workings.

Drone A   35 mph $\overset{\times 1.6}{\approx}$ 56 km/h
Drone B   57 km/h

Drone B is faster (or has a faster maximum speed)

(2)