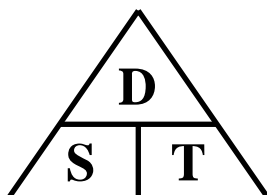


## 10.1 Later Date Revision

*You May Use A Calculator*

## Question 1



By using the constant speed formula triangle, or otherwise, write down a formula for *distance* in terms of *time* and *speed*

*distance* =

[ 2 marks ]

## Question 2

( i ) How many metres are in a kilometre ?

( ii ) How many seconds are in a day ?

[ 2 marks ]

## Question 3

Tickles, my pet spider, moves at a constant speed of  $0.6 \text{ ms}^{-1}$  for 12 minutes.

( i ) How many seconds are in 12 minutes ?

( ii ) How far does Tickles travel in this time ?

( iii ) Is this more or less than  $\frac{1}{2} \text{ km}$  ?

[ 4 marks ]

#### Question 4

A cyclist leaves her house at 6.48 am.

She peddles at a steady speed of 7 m/s returning home at 7.33 am.

( i ) For how long did the cyclist peddle ?

Give your answer in seconds.

[ 2 marks ]

( ii ) How far did the cyclist travel ?

Give your answer in metres.

[ 2 marks ]

( iii ) Change your part ( ii ) answer into km.

[ 1 mark ]

#### Question 5

A train accelerates uniformly from a speed of 4 ms<sup>-1</sup> to a speed of 28 ms<sup>-1</sup> over 32 seconds.

( i ) What is the average speed of the train over the 32 seconds ?

[ 1 mark ]

( ii ) Use the formula;

$$Distance = Average\ Speed \times Time.$$

to calculate the distance the train covers whilst accelerating.

[ 1 mark ]

#### Question 6

In mathematics the Greek letter delta,  $\Delta$ , is used for the word *change*.

A child's mass,  $M$ , increases from 15.8 kg to 18.1 kg

What is  $\Delta M$  ?

[ 1 mark ]

### Question 7

On a speed-time graph;

(i) What does the “gradient of a line” represent ?

[ 1 mark ]

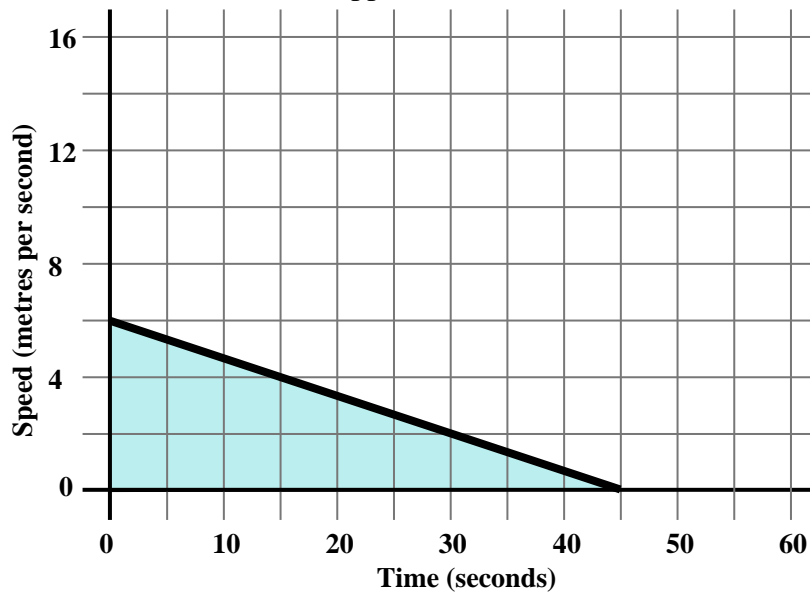
(ii) What does the “area under the graph” represent ?

[ 1 mark ]

### Question 8

The Speed-Time graph is of a mobility scooter approaching a STOP sign.

At  $t = 0$  the scooter's driver first applies the brakes.



(i) What speed was the driver doing when he first applies the brakes ?

[ 1 mark ]

(ii) How long did it take for the mobility scooter to stop ?

[ 1 mark ]

(iii) What distance does the mobility scooter travel whilst stopping ?

[ 2 marks ]

(iv) The driver first applied the brakes when the STOP sign was 0.25 km away.  
Does it stop before or after reaching the STOP sign ?

[ 1 mark ]

(v) What was the mobility scooter's rate of deceleration ?

[ 2 marks ]

**Question 9**

*GCSE Examination Question from May 2022, Paper 2H, Q3 (Edexcel)*

An aeroplane travelled from New York City to Los Angeles.

The aeroplane travelled a distance of 3980 kilometres 5 hours 24 minutes.

Work out the average speed of the aeroplane.

Give your answer in kilometres per hour correct to the nearest whole number.

[ 3 marks ]

**Question 10**

( i ) I move from a point with  $x$  coordinate 5 to a point with  $x$  coordinate 9.

What is  $\Delta x$  ?

[ 1 mark ]

( ii ) I move from a point with  $y$  coordinate 11 to a point with  $y$  coordinate 23.

What is  $\Delta y$  ?

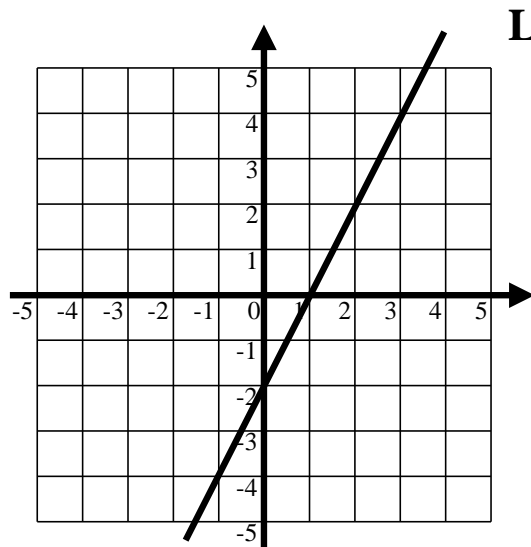
[ 1 mark ]

( iii ) Use your part ( i ) and part ( ii ) answers to help calculate the gradient between the points with coordinates ( 5, 11 ) and ( 9, 23 ).

[ 2 marks ]

**Question 11**

A line, **L**, passes through the points  $(0, -2)$  and  $(3, 4)$



Find the gradient of the line **L**

[ 2 marks ]

**Question 12**

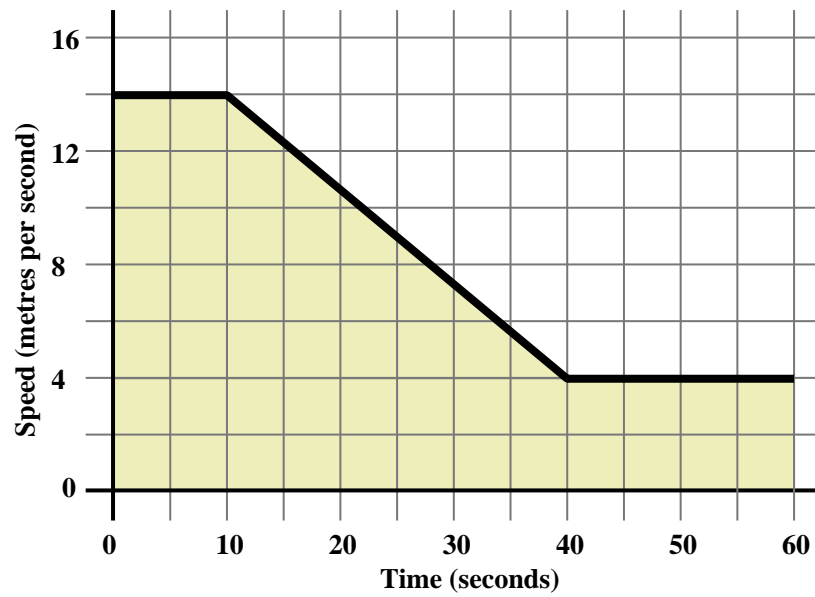
*GCSE Examination Question from January 2021, Paper 1H, Q4 (Edexcel)*

A train journey from Paris to Amsterdam took 3 hours 24 minutes.  
The total distance the train travelled was 433.5 km.

Work out the average speed of the train.  
Give your answer in kilometres per hour.

[ 3 marks ]

### Question 13



A car's speed over a sixty second period is given by the Speed-Time graph.

(i) Between which two times was the car decelerating ?

[ 1 mark ]

(ii) Calculate the rate of deceleration.

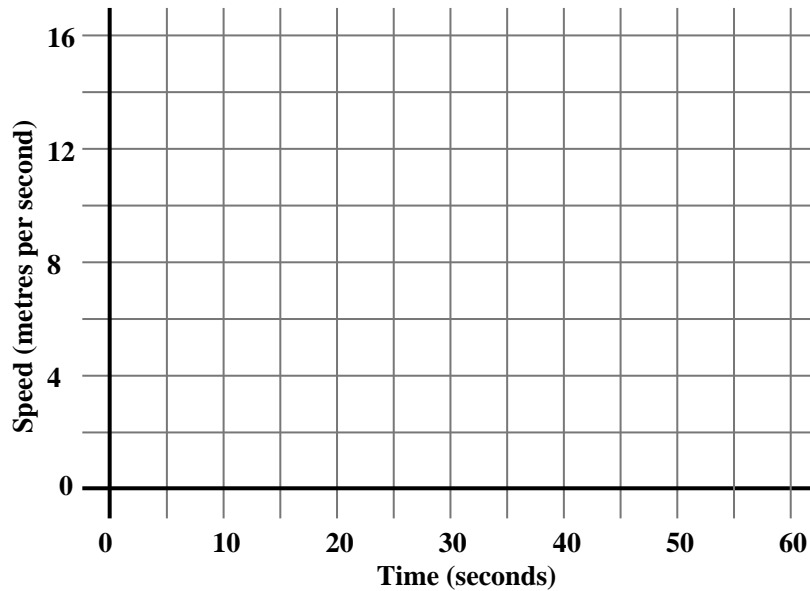
[ 2 marks ]

(iii) Calculate the total distance travelled by the car over the sixty seconds.  
Clearly show your working.

[ 4 marks ]

### Question 14

A car is moving at a constant speed of  $6 \text{ ms}^{-1}$  between  $t = 0$  and  $t = 10$  seconds. Then, over 30 seconds, it accelerates uniformly to a speed of  $12 \text{ ms}^{-1}$ . It then moves at a constant speed of  $12 \text{ ms}^{-1}$  for 20 seconds.



Draw the Speed - Time graph for the car movements described.

[ 3 marks ]

### Question 15

GCSE Examination Question from January 2020, Paper 2H, Q10 (Edexcel)

Change a speed of 50 metres per second to a speed in kilometres per hour.

[ 3 marks ]