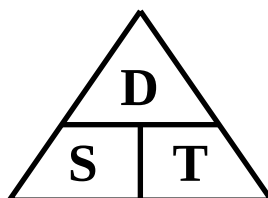


7.1 REVISION

You May Use A Calculator

Question 1



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

time =

[2 marks]

Question 2

(i) How many metres are in a kilometre ?

(ii) How many seconds are in an hour ?

[2 marks]

Question 3

Brian, my pet snail, moves at a constant speed of 0.2 ms^{-1} for 20 minutes.

(i) How many seconds are in 20 minutes ?

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

(iii) Is this more or less than $\frac{1}{4} \text{ km}$?

[4 marks]

Question 4

A woman leaves her house at 2.25 pm.

She jogs at a steady speed of 3 m/s returning home at 2.40 pm.

- (i) For how long did the woman jog ?
Give your answer in seconds.

[2 marks]

- (ii) How far did the woman travel ?
Give your answer in metres.

[2 marks]

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

[1 mark]

Question 5

A speed boat accelerates uniformly from a speed of 2 ms^{-1} to a speed of 24 ms^{-1} over 10 seconds.

- (i) What is the average speed of the speed boat over the 10 seconds ?

[1 mark]

- (ii) Use the formula;

$$\text{Distance} = \text{Average Speed} \times \text{Time}.$$

to calculate the distance the speed boat covers whilst accelerating.

[1 mark]

Question 6

In mathematics the Greek letter delta, Δ , is used for the word *change*

A man's weight, W , increases from 65.7 kg to 72.6 kg

What is ΔW ?

[1 mark]

Question 7

On a speed-time graph;

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

[1 mark]

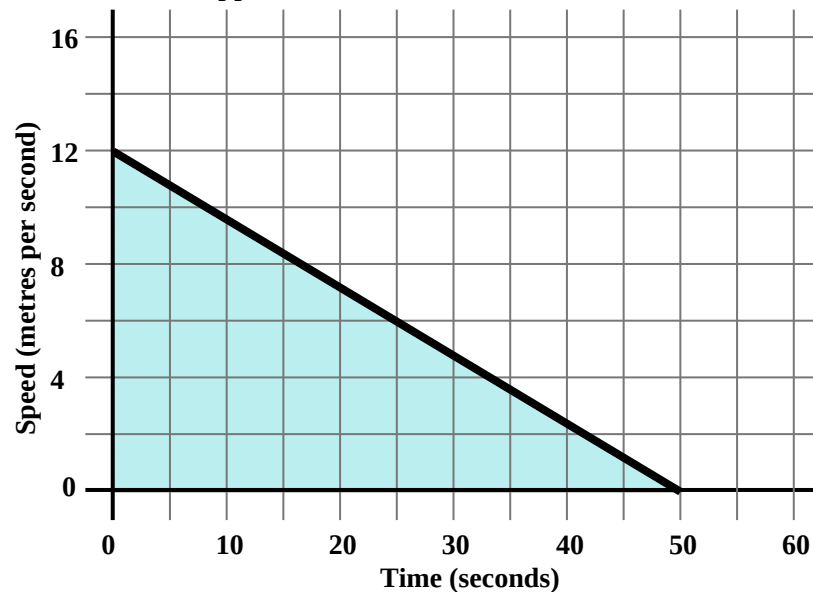
(ii) What does the “gradient of a line” represent ?

[1 mark]

Question 8

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

At $t = 0$ the train first applies the brakes.



(i) What speed was the train doing when it first applies the brakes ?

[1 mark]

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

[1 mark]

(iii) What distance does the train travel whilst stopping ?

[2 marks]

(iv) The train first applied the brakes when the STOP sign was 0.4 km away.
Does it stop before or after reaching the STOP sign ?

[1 mark]

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

[2 marks]

Question 9

GCSE Examination Question from January 2014, Q2

A plane flew from Frankfurt to Hong Kong.

The flight time was 10 hours 45 minutes.

The average speed was 852 km/h.

Work out the distance, in km, the plane flew.

[3 marks]

Question 10

- (i) I move from a point with x coordinate 13 to a point with x coordinate 21.
What is Δx ?

[1 mark]

- (ii) I move from a point with y coordinate 5 to a point with y coordinate 29.
What is Δy ?

[1 mark]

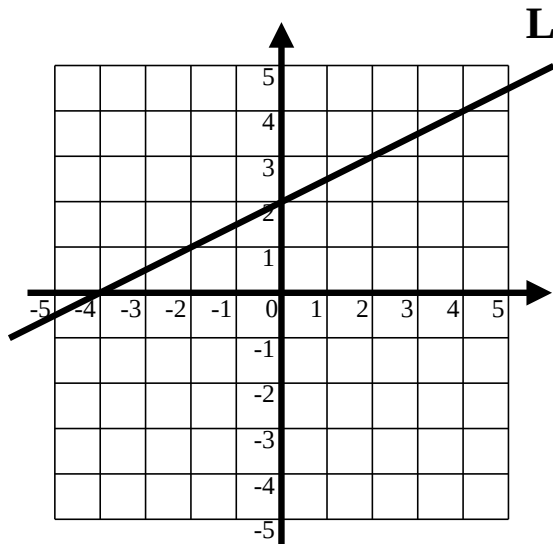
- (iii) Use your part (i) and part (ii) answers to help calculate the gradient
between the points with coordinates (13, 5) and (21, 29).

[2 marks]

Question 11

GCSE Examination Question from June 2009, Q12 (a)

The straight line, **L**, passes through the points $(0, 2)$ and $(2, 3)$



Work out the gradient of **L**

[2 marks]

Question 12

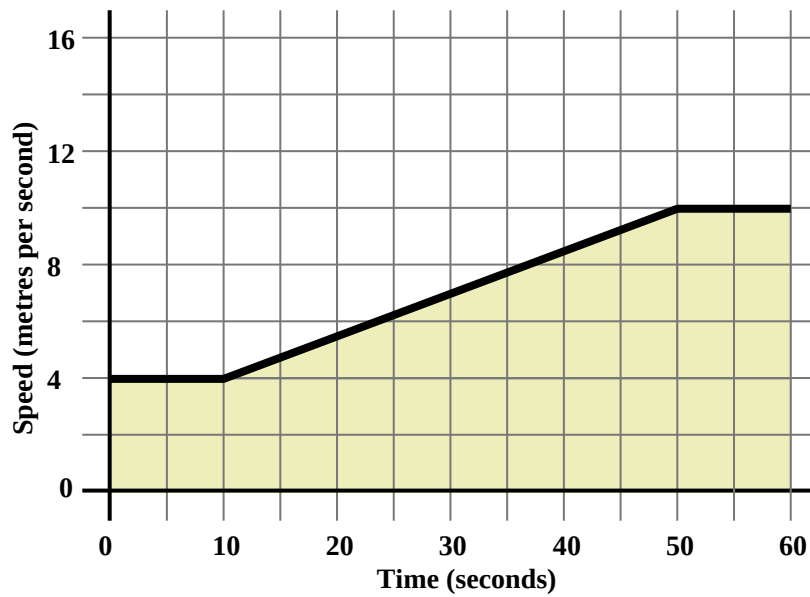
GCSE Examination Question from June 2011, Q4

The length of Rachael's journey from her home to work is 72 km.
The journey takes 1 hour 20 minutes.

Work out her average speed in km/h

[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 accelerating ?

[1 mark]

(ii) Calculate the rate of acceleration.

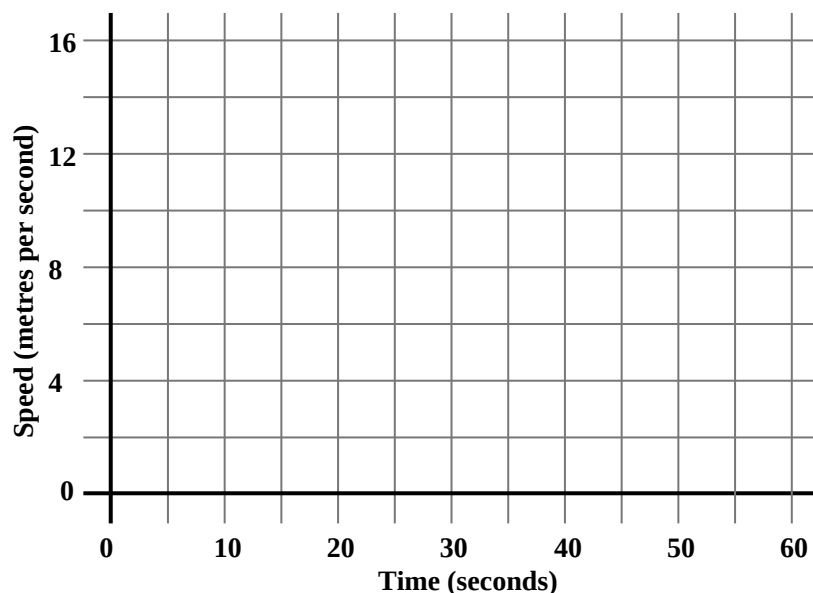
[2 marks]

(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 2 ms^{-1} between $t = 0$ and $t = 20$ seconds.
Then, over 25 seconds, it accelerates uniformly to a speed of 12 ms^{-1}
It then moves at a constant speed of 12 ms^{-1} for 15 seconds.



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

[3 marks]

Question 15

GCSE Examination Question from January 2012, Q2

An aeroplane flew from Qatar to Bahrain.
The distance flown was 135 km
The average speed was 180 km/h.

Work out the time taken.

Give your answer in minutes.

[3 marks]

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Teachers may obtain detailed worked solutions to the exercises by email from MHHShrewsbury@Gmail.com