EDEXCEL IGCSE MATHEMATICS

PAPER 1H & 1HR (LINEAR)

GEOMETRY – AVERAGE SPEED AND COVERTING UNITS

QP & MS (2018 – 2025)

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

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EDEXCEL IGCSE MATHEMATICS MODULAR FOR MAY & OCT 2026

by Sir Muhammad Abdullah Shah

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1. June 2025 1HR/Q7

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

..... km/h

(Total for Question 7 is 3 marks)

2. Jan 2022 1HR/Q7

Milly went on a car journey.
She travelled from Anesey to Breigh to Clando and then to Duckbridge.

For Anesey to Breigh, Milly drove the 245 km in 2.5 hours.
For Breigh to Clando, Milly drove the 220 km at an average speed of 80 km/h
For Clando to Duckbridge, Milly drove at an average speed of 72 km/h in 50 minutes.

Work out Milly's average speed, in km/h, for the journey from Anesey to Duckbridge.
Give your answer correct to one decimal place.

..... km/h

(Total for Question 7 is 4 marks)

3. Jan 2021 1HR/Q4

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.

..... km/h

(Total for Question 4 is 3 marks)

4. Nov 2020 1H/Q6

A rocket travelled 100 km at an average speed of 28 440 km/h.

Work out how long it took the rocket to travel the 100 km.
Give your answer in seconds, correct to the nearest second.

..... seconds

(Total for Question 6 is 3 marks)

5. Nov 2020 1HR/Q7

Pedro drove from Toulouse to Montpellier in 2 hours 42 minutes.
He drove at an average speed of 90 km/hour.

Janine drove from Toulouse to Montpellier along the same route as Pedro.
The journey took her 3 hours.

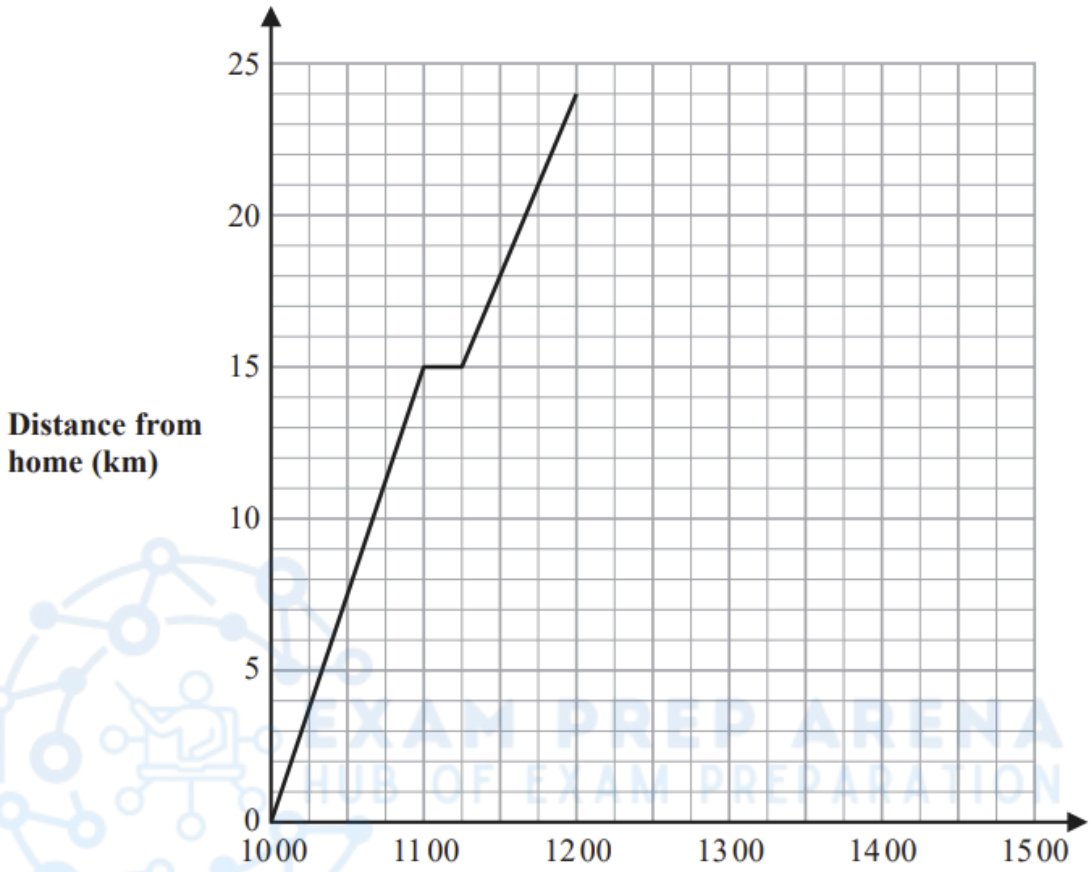
Work out Janine's average speed for the journey.

..... km/hour

(Total for Question 7 is 4 marks)

6. June 2019 1H/Q2

Jalina left her home at 1000 to cycle to a park.
On her way to the park, she stopped at a friend's house and then continued her journey to the park.
Here is the distance-time graph for her journey to the park.



(a) On her journey to the park, did Jalina cycle at a faster speed before or after she stopped at her friend's house?
Give a reason for your answer.

.....

.....

.....

(1)

Jalina stayed at the park for 45 minutes.
She then cycled, without stopping, at a constant speed of 16 km/h from the park back to her home.

(b) Show all this information on the distance-time graph.

(2)

(c) Work out Jalina's average cycling speed, in kilometres per hour, for the complete journey to the park and back.
Do **not** include the times when she was not cycling in your calculation.
Give your answer correct to 1 decimal place.

..... km/h

(3)

(Total for Question 2 is 6 marks)

7. June 2019 1HR/Q10

Change 22 metres per second to a speed in kilometres per hour.
Show your working clearly.

.....km/h

(Total for Question 10 is 3 marks)

8. Jan 2019 1HR/Q5

The Shanghai Maglev Train takes 8 minutes to travel a distance of 30.5 kilometres.

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

..... kilometres per hour

(Total for Question 5 is 3 marks)

9. June 2018 1HR/Q11

Change a speed of 72 kilometres per hour to a speed in metres per second.

..... metres per second

(Total for Question 11 is 3 marks)

10. Sample 2018 1H/Q1

Yoko flew on a plane from Tokyo to Sydney.
The plane flew a distance of 7800 km.
The flight time was 9 hours 45 minutes.

Work out the average speed of the plane in kilometres per hour.

..... km/h

(Total for Question 1 is 3 marks)

MARKING SCHEME

1. June 2025 1HR/Q7

7	$50x \div 1000$ (= $0.05x$) oe **or** $50x \times 60 \times 60$ (= $180\,000x$) oe **or** $50x \div \frac{1}{3600}$ (= $180\,000x$) oe **or** $50x \div 1000 \times 60$ (= $3x$) **or** $\frac{3600}{1000}$ or $\frac{18}{5}$ or 3.6 **or** $\frac{1000}{3600}$ or $\frac{5}{18}$ or 0.277(77…)		3	M1	Condone omission of x for this mark
	eg $\frac{50x \times 60 \times 60}{1000}$ oe **or** $50x \times 3.6$ oe **or** $50x \div \frac{1000}{3600}$ oe **or** 180			M1	for a complete method including x **or** for an answer of 180
	Correct answer scores full marks (unless from obvious incorrect working)	$180x$		A1	
					Total 3 marks

2. Jan 2022 1HR/Q7

7	$220 \div 80$ (= 2.75 or $\frac{11}{4}$) oe			M1 for a method to find the time from B to C
	$72 \times \frac{50}{60}$ (= 60) oe			M1 for a method to find the distance from C to D Allow 0.83(333…) to 2 dp truncated or rounded
	$\frac{245+220+"60"}{2.5+"2.75"+\frac{50}{60}} \left(= \frac{525}{73/12}\right)$ oe			M1 for a complete method to find the average speed for entire journey 0.83(333…) to 2 dp truncated or rounded 6.0(8333…) to 2 sf truncated or rounded
		86.3		A1 for 86.3 – 86.4
				Total 4 marks

3. Jan 2021 1HR/Q4

4	3.4 or $\frac{17}{5}$ or $3\frac{2}{5}$ or $3\frac{24}{60}$ or 204 oe		3	B1	
	$433.5 \div 3.4$ or $433.5 \div \frac{17}{5}$ or $433.5 \div 3\frac{2}{5}$ or $\frac{433.5}{'204'} \times 60$ oe			M1	for use of speed = distance ÷ time Allow $433.5 \div 3.24$ (= 133.796…) for this mark only
		127.5		A1	oe allow 128
					Total 3 marks

4. Nov 2020 1H/Q6

6	$100 \div 28\,440$ (= 0.0035…) **or** $28\,440 \div (60 \times 60)$ (= 7.9)		3	M1
	'0.0035...' × 60 × 60 **or** 100 ÷ '7.9'			M1
		13		A1 for 12.65 – 13
				Total 3 marks

5. Nov 2020 1HR/Q7

7	Use of 2 hrs 42 mins = 2.7 hrs **or** 162 mins		4	B1	
	e.g. 90×2.7 (= 243) **or** e.g. $\frac{90}{60} \times 162$ (= 243) **or** e.g. $\frac{S}{90} = \frac{2.7}{3}$			M1	for use of $D = S \times T$ (accept use of their time e.g. 90×2.42) **or** for setting up an equation using proportion
	e.g. "243" ÷ 3 **or** (S =) $90 \times \frac{2.7}{3}$			M1	(dep on M1) for their $D \div 3$ **or** for solving their equation
		81		A1	
					Total 4 marks

6. June 2019 1H/Q2

2	(a)	15 km/h or $\frac{25}{6}$ m/sec or 0.25 km/min or $\frac{15}{4}$ oe 12 km/h or $\frac{10}{3}$ m/sec or 0.2 km/min or $\frac{9}{3}$ oe	'before' with reason	1	B1	e.g. before as gradient is steeper **or** before as speed before is 15 km/h speed after is 12 km/h **or** before as she goes over 11(allow 11-12) km in ¾ hour but only goes 9 km in ¾ hour after oe NB: any figures used for the reason must be accurate if they haven't used 'gradient is steeper' oe
	(b)		line from (12:00, 24) to (12:45, 24) to (14:15, 0)	2	B2	If not B2 then B1 for a line from (12:00, 24) to (12:45, 24) **or** for a line from (t, 24) to (t + 1.5, 0) **or** for a time of 1.5 hours (oe) seen
	(c)	1h 45m + 1h 30m **or** 1 + 0.75 + 1.5 **or** 3h 15m **or** 3.25h **or** 195m oe		3	M1	ft from their graph for total time when cycling
		(24 × 2) ÷ "3.25" oe eg (48 ÷ 195) × 60			M1	ft dep on M1 for full method
			14.8		A1	awrt 14.8
						Total 6 marks

7. June 2019 1HR/Q10

10	22 × 60 × 60 (= 79 200) oe **or** 22 ÷ 1000 (= 0.022) oe		3	M1 for converting from m/s to m/h **or** from m to km	M2 for 22 × 3.6 oe
	22 × 60 × 60 ÷ 1000 oe			M1 for a complete method	
		79.2		A1 oe, dep on at least M1	
					Total 3 marks

8. Jan 2019 1HR/Q5

5	30.5 ÷ 8 (= 3.8125) **OR** 60 ÷ 8 (= 7.5)	228.75	3	M1	M2 for 30.5 ÷ $\frac{8}{60}$ oe
	"3.8125" × 60 **OR** 30.5 × "7.5"			M1	
				A1	accept 229, 228.8

9. June 2018 1HR/Q11

11	72 × 1000 (= 72000) or 72 ÷ 60 (= 1.2) or 72 ÷ 60 ÷ 60 (= 0.02) or 60 ÷ 60 × 1000 (= 3.6)	20	3	M1	for at least **one** of × 1000 or ÷ 60
	$\frac{72}{60\times60}\times1000$			M1	(dep) for a complete method
				A1	
					Total 3 marks

10. Sample 2018 1H/Q1

1	7800 ÷ 9.75 or 7800 ÷ 585 × 60	800	3	AO2	M2 A1	M1 for 7800 ÷ 9.45 or 7800 ÷ 585 or 13.3....