Speed, Distance & Time (F)

A collection of 9-1 Maths GCSE Sample and Specimen questions from AQA, OCR, Pearson-Edexcel and WJEC Eduqas.

Name:	
Total Marks:	

1. The table shows information about journeys A and B.

	Distance travelled	Time taken	Average speed
A	32 miles		64 mph
B		1 hour 20 minutes	42 mph

Complete the table.

[2]

2. Josef runs 400 metres in 1 minute.

He assumes he can run any distance at the same rate.

He says,

"I would run 10 000 metres in 25 minutes."

Tick a box to show whether his time to run 10 000 metres is likely to be accurate.

No, the time will be longer ☐

Yes, the time will be 25 minutes ☐

No, the time will be shorter ☐

Give working and a reason to support your answer.

[2]

3. Jo went for a bike ride one evening.

She travelled x kilometres in 5 hours.

Show that her average speed can be written as m/s.

[4]

4. Darren says

I can run 100 m in 15 seconds, so I should be able to run 800 m in 120 seconds.

Do you think that he would take more or less than 120 seconds to run 800 m?

Explain your answer, with reference to any assumptions Darren has made.

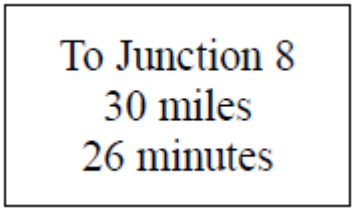
[3]

5. Axel and Lethna are driving along a motorway.

They see a road sign.

The road sign shows the distance to Junction 8

It also shows the average time drivers take to get to Junction 8



The speed limit on the motorway is 70 mph.

Lethna says:

"We will have to drive faster than the speed limit to drive 30 miles in 26 minutes."

Is Lethna right?

You must show how you get your answer.

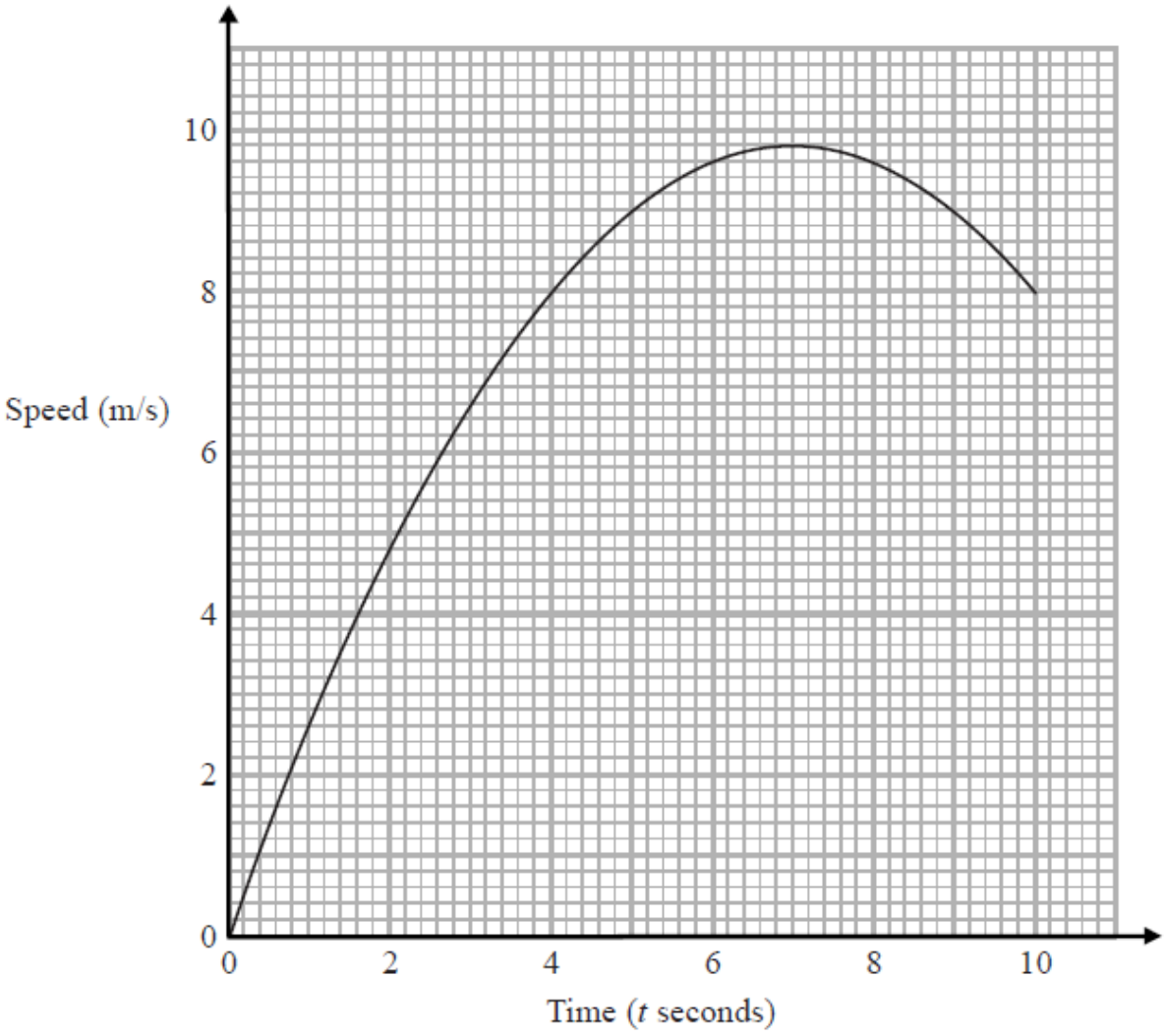
[3]

6. Change 72 km/h into m/s.

.....m / s [3]

7. Karol ran in a race.

The graph shows her speed, in metres per second, t seconds after the start of the race.



(a) Write down Karol's speed 3 seconds after the start of the race.

.....m/s [1]

(b) Write down Karol's greatest speed.

.....m/s [1]

There were two times when Karol's speed was 9 m/s.

(c) Write down these two times.

.....seconds [1]

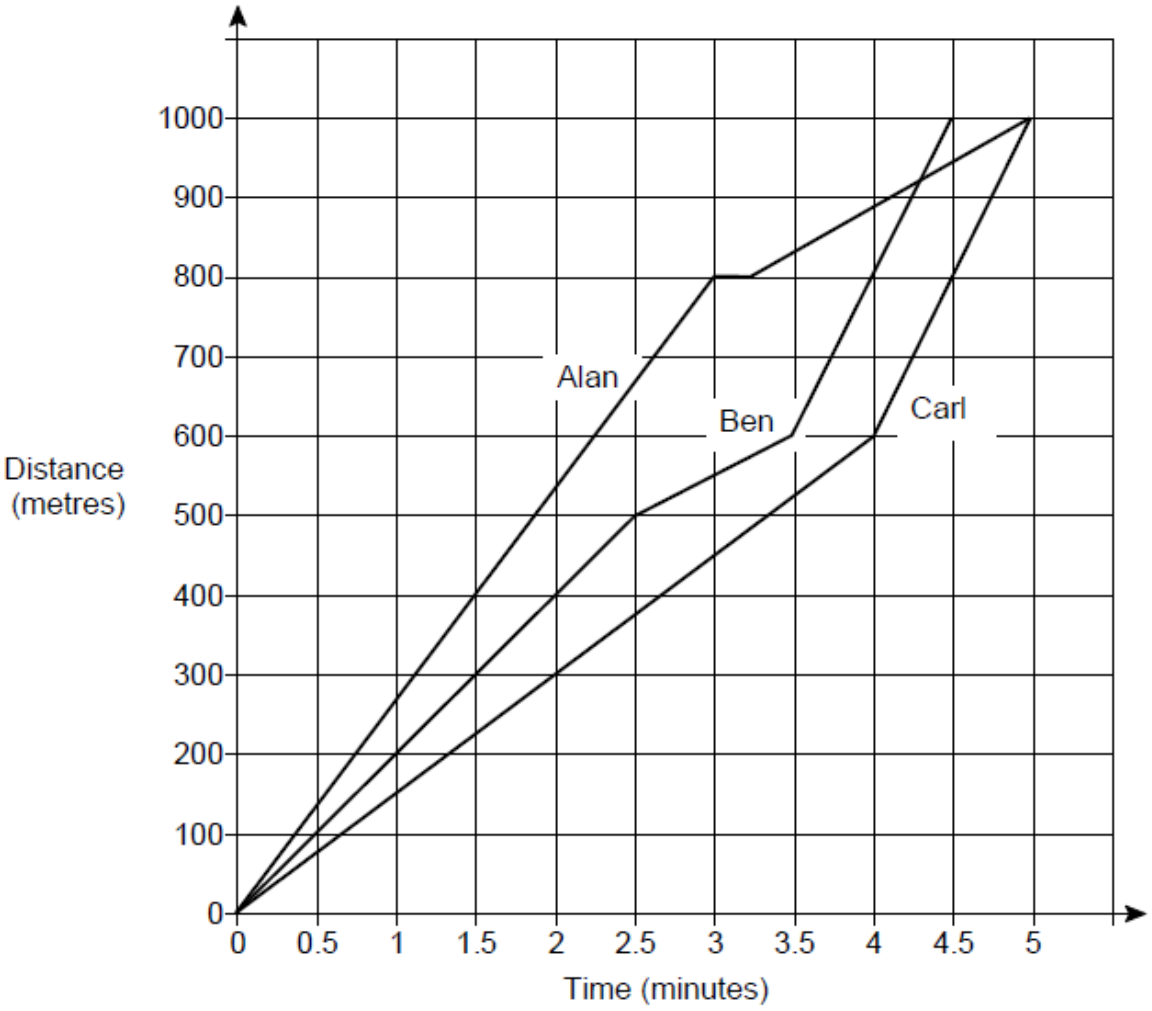
8. A sprinter runs a distance of 200 metres in 25 seconds.

Work out the average speed of the sprinter.

.....m/s [1]

9. Alan, Ben and Carl ran a 1000 metre race.

The distance-time graph shows the race.



(a) Who won the race?

Give a reason for your answer.

[1]

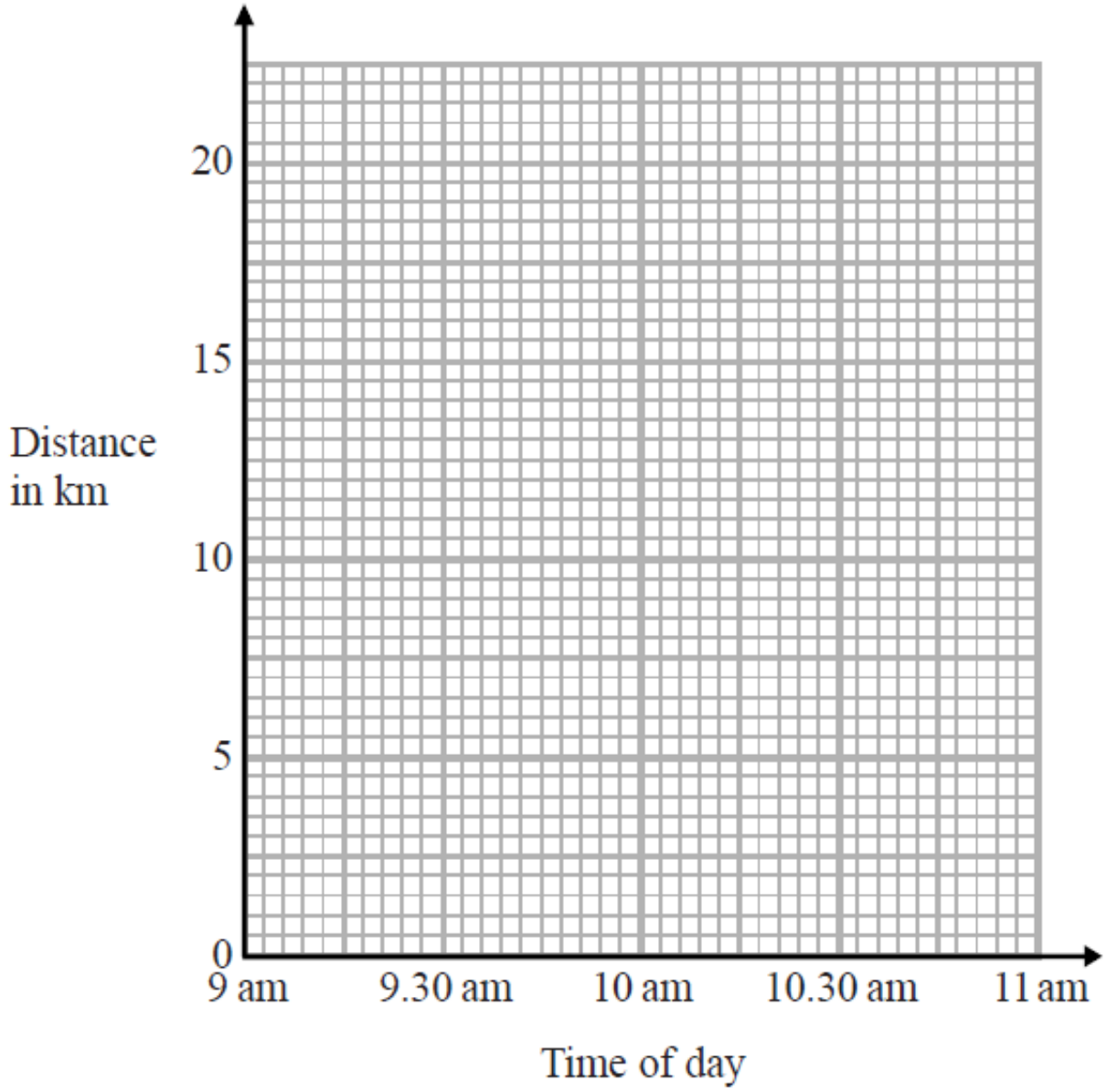
(b) Describe the race.

[4]

10. At 9 am, Bradley began a journey on his bicycle.

From 9 am to 9.36 am, he cycled at an average speed of 15 km/h.

From 9.36 am to 10.45 am, he cycled a further 8 km.



(a) Draw a travel graph to show Bradley's journey.

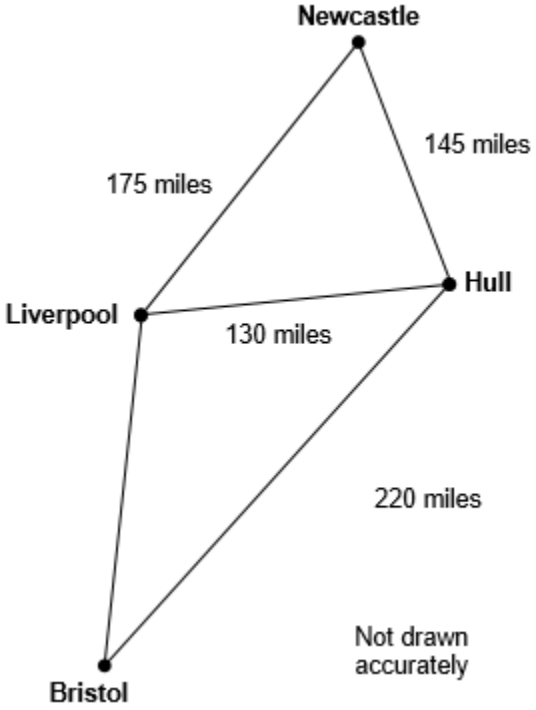
[3]

From 10.45 am to 11 am, Bradley cycled at an average speed of 18 km/h.

(b) Work out the distance Bradley cycled from 10.45 am to 11 am.

..... km [2]

11. The diagram shows distances by road between four cities.



a) Sam drives from Newcastle to Hull, and then from Hull to Bristol.
Tim drives from Newcastle to Liverpool, and then from Liverpool to Bristol.
Sam drives 10 more miles than Tim.

Work out the distance by road from Liverpool to Bristol.

[3]

b) Rob is going to drive 130 miles from Hull to Liverpool.
There are road works for 25 miles of the journey.
He assumes his average speed will be
50 mph where there are road works
70 mph for the rest of the journey.
Using his assumptions, work out his journey time.

[4]

c) Rob's assumptions about his average speeds are too high.

How does this affect his journey time?

[1]

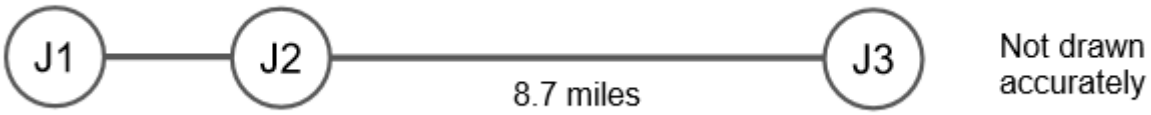
12. Which unit is not a unit of speed? Circle your answer.

km/h mph m/s km

[1]

13. J1, J2 and J3 are three junctions on a motorway.

The distance from J2 to J3 is 8.7 miles.



The distance from J1 to J2 is one-third of the distance from J2 to J3

Work out the distance from J1 to J3

[3]

CREDITS AND NOTES

Question	Awarding Body	Question	Awarding Body
1	AQA	11	AQA
2	AQA	12	AQA
3	OCR	13	AQA
4	OCR		
5	Pearson Edexcel		
6	Pearson Edexcel		
7	Pearson Edexcel		
8	Pearson Edexcel		
9	AQA		
10	Pearson Edexcel		

Notes:

These questions have been retyped from the original sample/specimen assessment materials and whilst every effort has been made to ensure there are no errors, any that do appear are mine and not the exam board s (similarly any errors I have corrected from the originals are also my corrections and not theirs!).

Please also note that the layout in terms of fonts, answer lines and space given to each question does not reflect the actual papers to save space.

These questions have been collated by me as the basis for a GCSE working party set up by the GLOW maths hub - if you want to get involved please get in touch. The objective is to provide support to fellow teachers and to give you a flavour of how different topics "could" be examined. They should not be used to form a decision as to which board to use. There is no guarantee that a topic will or won't appear in the "live" papers from a specific exam board or that examination of a topic will be as shown in these questions.

Links:

AQA http://www.aqa.org.uk/subjects/mathematics/gcse/mathematics-8300

OCR http://ocr.org.uk/gcsemaths

Pearson Edexcel http://qualifications.pearson.com/en/qualifications/edexcel-gcses/mathematics-2015.html

WJEC Eduqas http://www.eduqas.co.uk/qualifications/mathematics/gcse/

Contents:

This version contains questions from:

AQA – Sample Assessment Material, Practice set 1 and Practice set 2

OCR – Sample Assessment Material and Practice set 1

Pearson Edexcel – Sample Assessment Material, Specimen set 1 and Specimen set 2.

WJEC Eduqas – Sample Assessment Material