Pearson Edexcel Level 1/Level 2 GCSE (9-1)

Wednesday 8 November 2023

Morning (Time: 1 hour 30 minutes)

Paper reference **1MA1/1H**

First half of the paper

PAPER 1 (Non-Calculator)
Higher Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, Formulae Sheet (enclosed). Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may not be used**.

Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question*.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1   Work out 6.3×2.4

....

(Total for Question 1 is 3 marks)

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1   Work out 7.4×3.6

....

(Total for Question 1 is 3 marks)

2 (a) (i) Write down the value of 5^0

....

(1)

(ii) Write down the value of 5^{-2}

....

(1)

(b) Write $\dfrac{2^5 \times 2^4}{2^3}$ in the form 2^n where n is an integer.

....

(2)

(Total for Question 2 is 4 marks)

2 (a) (i) Write down the value of 6^0

....
(1)

(ii) Write down the value of 6^{-2}

....
(1)

(b) Write $\dfrac{3^4 \times 3^2}{3^3}$ in the form 3^n where n is an integer.

....
(2)

(Total for Question 2 is 4 marks)

3 (a) Write 156 as a product of its prime factors.

....

(2)

(b) Find the highest common factor (HCF) of 156 and 130

....

(2)

(Total for Question 3 is 4 marks)

3   (a) Write 264 as a product of its prime factors.

....

(2)

(b) Find the highest common factor (HCF) of 264 and 165

....

(2)

(Total for Question 3 is 4 marks)

4 The mean length of 5 sticks is 4.2 cm.

Nawal measured the length of one of the sticks as 7 cm.

(a) Work out the mean length of the other 4 sticks.

.... cm

(3)

Nawal made a mistake.
The stick was not 7 cm long.
It was 17 cm long.

(b) How does this affect your answer to part (a)?

....

....

....

(1)

(Total for Question 4 is 4 marks)

4   The mean height of 6 towers is 50 m.

Nathan measured the height of one of the towers as 70 m.

(a) Work out the mean height of the other 5 towers.

.... m

(3)

Nathan made a mistake.
The stick was not 70 m high.
It was 60 m high.

(b) How does this affect your answer to part (a)?

....

....

....

(1)

(Total for Question 4 is 4 marks)

5 The point P lies on the line AB.
Use ruler and compasses to construct an angle of 90° at P.
You must show all your construction lines.

A ————————————×———————————— B
P
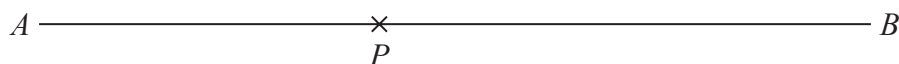
(Total for Question 5 is 2 marks)

5 The point *P* lies on the line *AB*.

Use ruler and compasses to construct an angle of 90° at *P*.
You must show all your construction lines.

A

×*P*

B

(Total for Question 5 is 2 marks)

6 The diagram shows an isosceles triangle *ABD* and the straight line *ABC*.
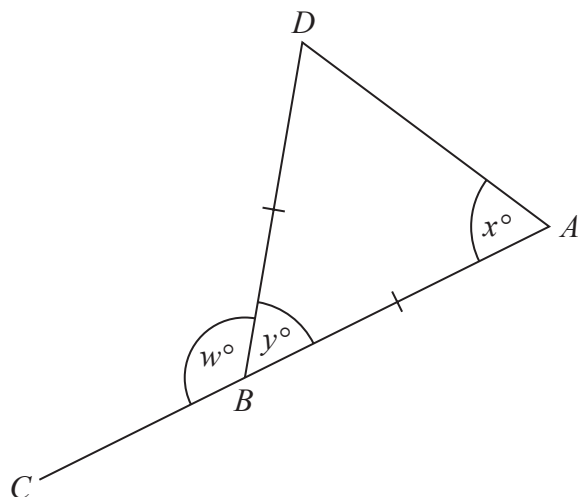
BA = *BD*

x : *y* = 2 : 1

Work out the value of *w*.

w = ...

(Total for Question 6 is 4 marks)

Turn over ▶

6 The diagram shows an isosceles triangle *ABD* and the straight line *ABC*.
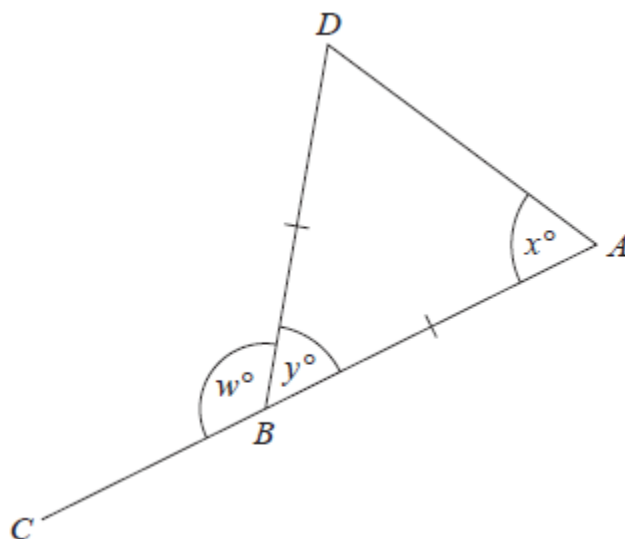
BA = BD

$x : y = 3 : 2$

Work out the value of *w*.

$w =$ ....

(Total for Question 6 is 4 marks)

7 Mano has three shelves of books.

There are x books on shelf **A**.
There are $(3x + 1)$ books on shelf **B**.
There are $(2x - 5)$ books on shelf **C**.

There is a total of 44 books on the three shelves.

All the books have the same mass.

The books on shelf **B** have a total mass of 7500 g.

Work out the total mass of the books on shelf **A**.

.... g

(Total for Question 7 is 5 marks)

7   Martina has three lorry loads of paving slabs.

There are x paving slabs on lorry **A**.
There are $(2x - 1)$ paving slabs on lorry **B**.
There are $(3x + 5)$ paving slabs on lorry **C**.

There is a total of 58 paving slabs on the three lorries.

All the paving slabs have the same mass.

The paving slabs on lorry **B** have a total mass of 680 kg.

Work out the total mass of the paving slabs on lorry **A**.

.... g

(Total for Question 7 is 5 marks)

8 The normal price of a mattress is reduced by 40% in a sale.
The price of the mattress in the sale is £660

Work out the normal price of the mattress.

£...

(Total for Question 8 is 2 marks)

8 The normal price of a sofa is reduced by 30% in a sale.
The price of the sofa in the sale is £1155

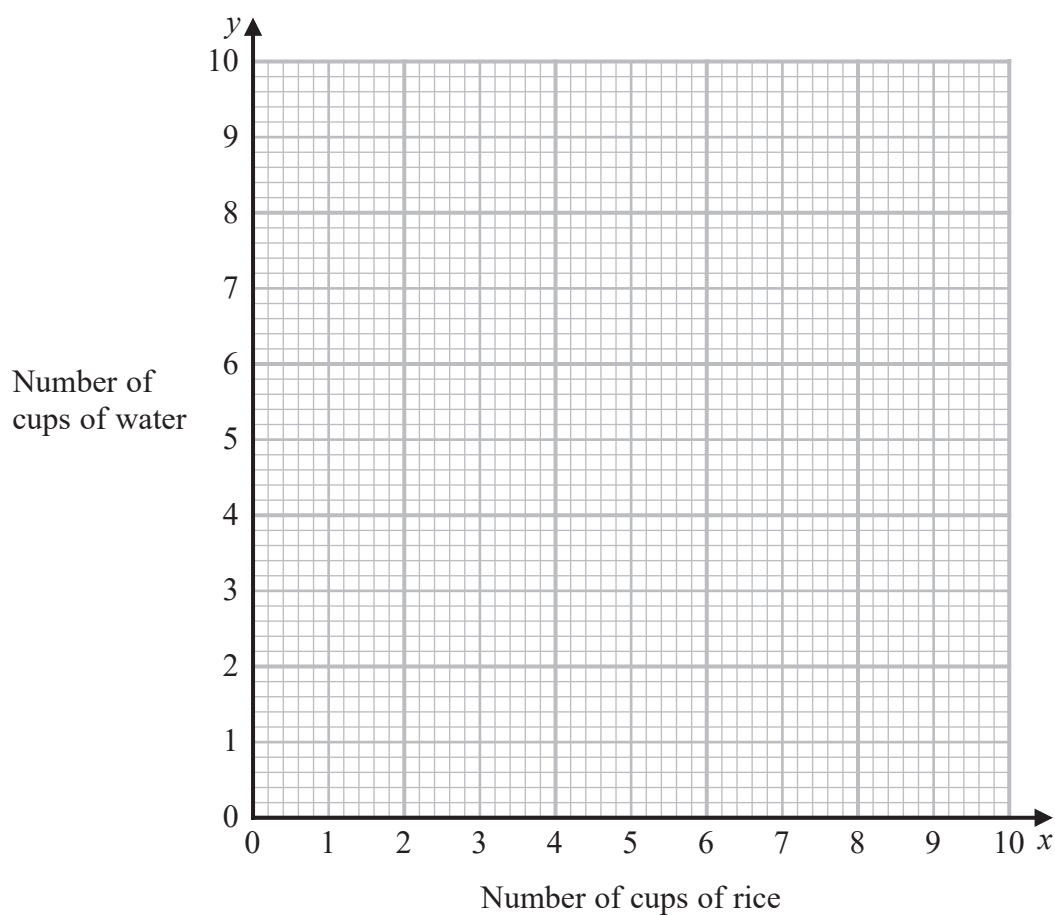Work out the normal price of the sofa.

£..

(Total for Question 8 is 2 marks)

_____

9 To cook rice

the number of cups of rice (x) : the number of cups of water (y) = 4 : 5

(a) Use this information to draw a graph to show the relationship between the number of cups of rice and the number of cups of water needed to cook rice.

Number of cups of water

Number of cups of rice

(2)

(b) (i) Find the gradient of the line drawn in part (a).

....

(1)

(ii) Explain what this gradient represents.

....

....

....
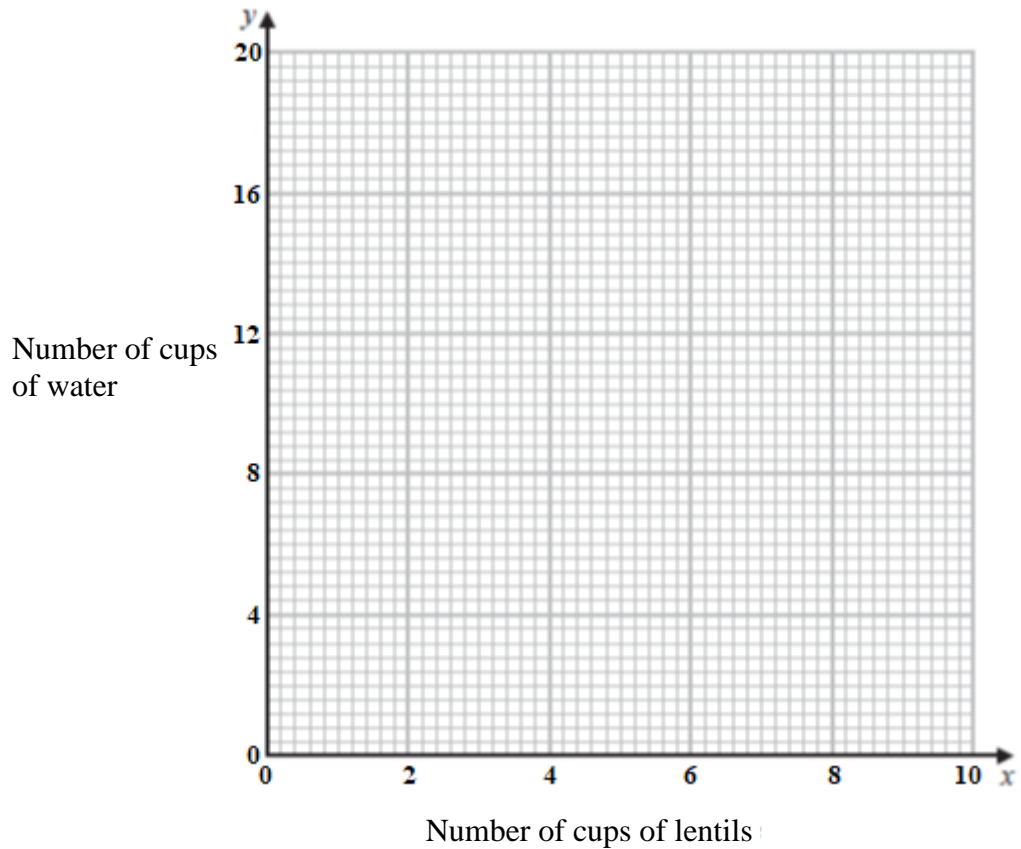
(1)

(Total for Question 9 is 4 marks)

9 To cook lentils

the number of cups of lentils (x) : the number of cups of water (y) = 2 : 5

(a) Use this information to draw a graph to show the relationship between the number of cups of lentils and the number of cups of water needed to cook lentils.

Number of cups of lentils

(2)

(b) (i) Find the gradient of the line drawn in part (a).

....

(1)

(ii) Explain what this gradient represents.

....

....

....

(1)

(Total for Question 9 is 4 marks)

10 The circumference of a circle is 10 m.

Work out the area of the circle.
Give your answer in terms of π.

.... m^2

(Total for Question 10 is 3 marks)

P 6 9 5 3 3 A 0 1 1 2 4

10 The area of a circle is 36π cm.

Work out the circumference of the circle.
Give your answer in terms of π.

.... cm^2

(Total for Question 10 is 3 marks)

11 Alice recorded the number of cars going into a village on each of 80 days.

The incomplete table and the incomplete box plot give information about her results.

	Number of cars
Least number	300
Lower quartile	
Median	900
Upper quartile	
Range	1000
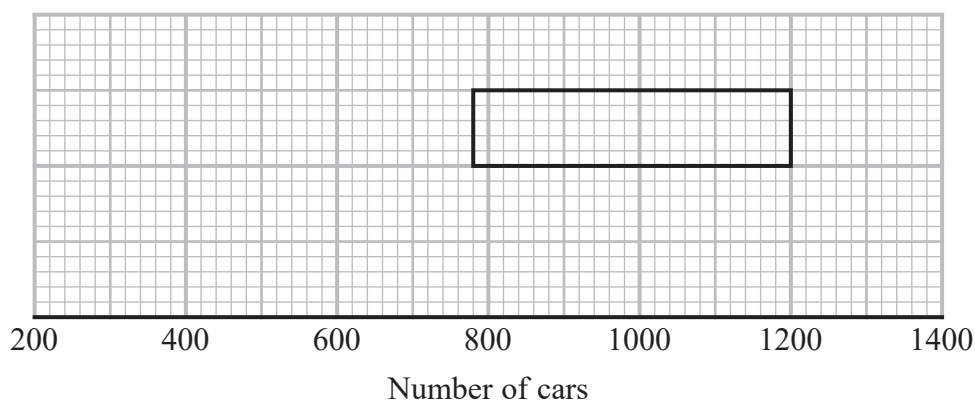
Number of cars

(a) (i) Use the information in the table to complete the box plot.

   (ii) Use the information in the box plot to complete the table.

(3)

On some of these 80 days Alice saw fewer than 1200 cars going into the village.

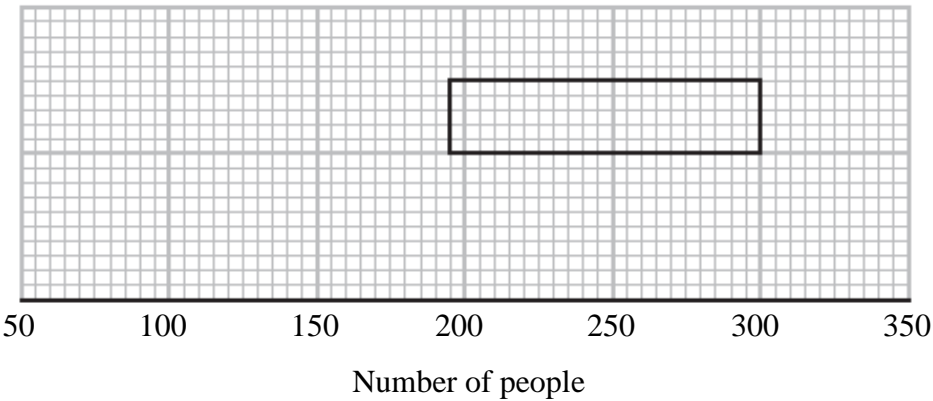(b) Work out an estimate for the number of days Alice saw fewer than 1200 cars going into the village.

....

(2)

(Total for Question 11 is 5 marks)

11 Bernie recorded the number of people using a swimming pool on each of 40 days.

The incomplete table and the incomplete box plot give information about his results.

	Number of people
Least number	85
Lower quartile	
Median	225
Upper quartile	
Range	260

Number of people

(a) (i) Use the information in the table to complete the box plot.

(ii) Use the information in the box plot to complete the table.

(3)

On some of these 40 days Bernie saw more than 300 people using into the swimming pool.

(b) Work out an estimate for the number of days Bernie saw more than 300 people using the swimming pool.

....

(2)

(Total for Question 11 is 5 marks)

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P 6 9 5 3 3 A 0 2 3 2 4