

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Centre Number

Candidate Number

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Pearson Edexcel International GCSE

Time 2 hours 30 minutes

Paper
reference

4MB1/02

Mathematics B PAPER 2



You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. 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.*
- **Calculators may be used.**

Information

- The total mark for this paper is 100.
- 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.
- Check your answers if you have time at the end.
- Without sufficient working, correct answers may be awarded no marks.

Turn over ►

P69489A

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Q:1/1/1/1/1/



P 6 9 4 8 9 A 0 1 3 2



Pearson

Question 1 continued

Area with horizontal dotted lines for writing.

(Total for Question 1 is 6 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Question 2 continued

Area with horizontal dotted lines for writing.

(Total for Question 2 is 7 marks)

DO NOT WRITE IN THIS AREA

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DO NOT WRITE IN THIS AREA



Question 5 continued

Area with horizontal dotted lines for writing.

(Total for Question 5 is 8 marks)

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DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



P 6 9 4 8 9 A 0 1 1 3 2

Question 6 continued

Area with horizontal dotted lines for writing.

(Total for Question 6 is 7 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



P 6 9 4 8 9 A 0 1 3 3 2

Question 7 continued

Handwriting practice area with 20 horizontal dotted lines.

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DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



P 6 9 4 8 9 A 0 1 5 3 2

Question 7 continued

Handwriting practice area with 20 horizontal dotted lines.

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DO NOT WRITE IN THIS AREA

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DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Question 7 continued

Area with horizontal dotted lines for writing.

(Total for Question 7 is 7 marks)

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DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



P 6 9 4 8 9 A 0 1 7 3 2

8

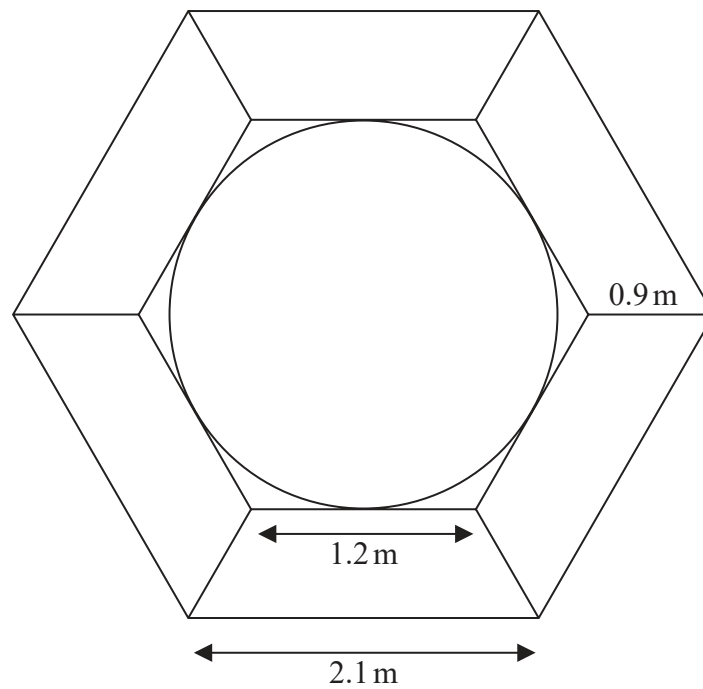


Diagram **NOT** accurately drawn

Figure 2

Figure 2 shows the design for a garden feature.

In the middle of the feature is a circular pond.
The pond is surrounded by 6 identical flower beds.
Each flower bed is in the shape of an isosceles trapezium.

(a) Calculate the area, in m^2 to 3 significant figures, of one of the flower beds.

(3)

Each flower bed needs to be filled with compost to a depth of 10 cm.
The compost is sold in bags containing 50 litres of compost.

(b) Show that 16 bags of compost will be needed to fill all six flower beds to a depth of 10 cm.
Show your working clearly.

(4)

(c) Find the area of the circular pond.
Give your answer in m^2 to 3 significant figures.

(4)

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DO NOT WRITE IN THIS AREA

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DO NOT WRITE IN THIS AREA



9

[In this question the coordinates of the points are given in centimetres]

The points with coordinates (1, 1), (2, 4), (4, 6) and (3, 3) are the vertices of quadrilateral *A*

- (a) On the grid opposite, draw and label quadrilateral *A* (1)

Quadrilateral *A* is transformed to quadrilateral *B* by a rotation of 90° anticlockwise about the origin, *O*

- (b) On the grid opposite, draw and label quadrilateral *B* (2)

Quadrilateral *B* is transformed to quadrilateral *C* under the transformation with matrix **M** where

$$\mathbf{M} = \begin{pmatrix} 1 & 3 \\ 1 & 1 \end{pmatrix}$$

- (c) On the grid opposite, draw and label quadrilateral *C* (3)

- (d) Calculate the determinant of **M** (1)

- (e) Calculate the area of quadrilateral *A* (2)

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$$\left[\text{Determinant of matrix } \begin{pmatrix} a & b \\ c & d \end{pmatrix} = ad - bc \right]$$

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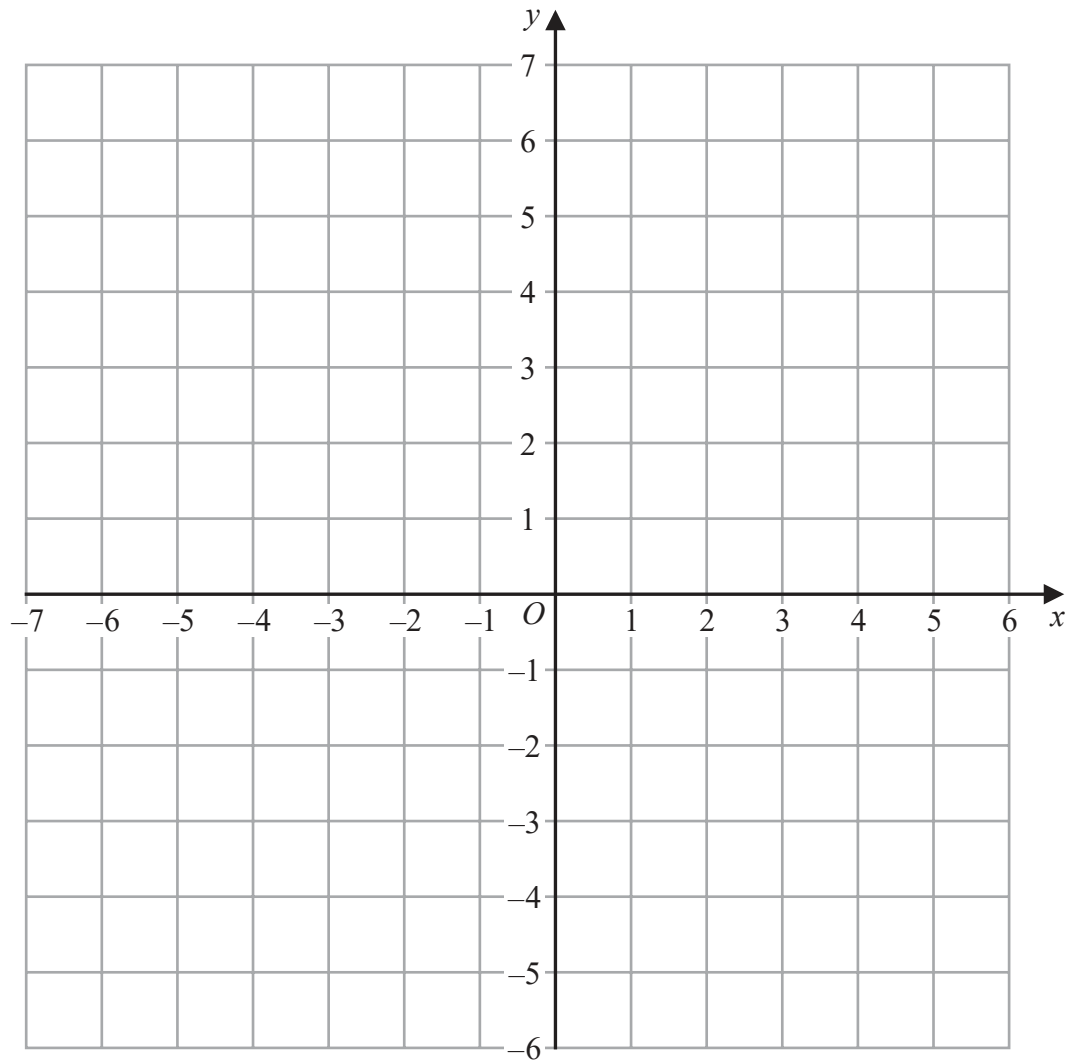
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Question 9 continued



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Turn over for a spare grid if you need to redraw your shapes.



Question 9 continued

Handwriting practice area with 25 horizontal dotted lines.

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DO NOT WRITE IN THIS AREA

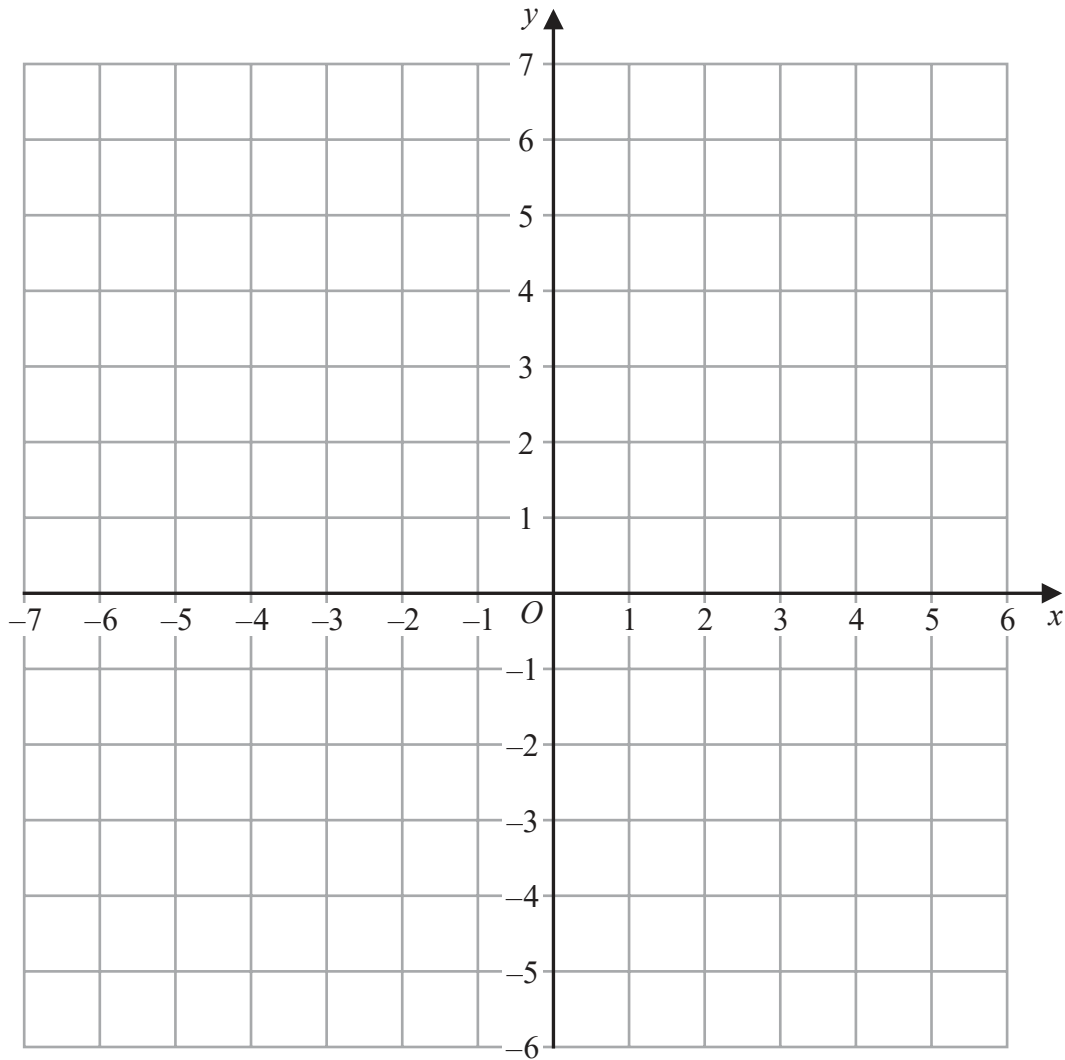
DO NOT WRITE IN THIS AREA

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Question 9 continued

Only use this grid if you need to redraw your shapes.



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(Total for Question 9 is 9 marks)



Question 10 continued

Handwriting practice area with horizontal dotted lines.

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DO NOT WRITE IN THIS AREA

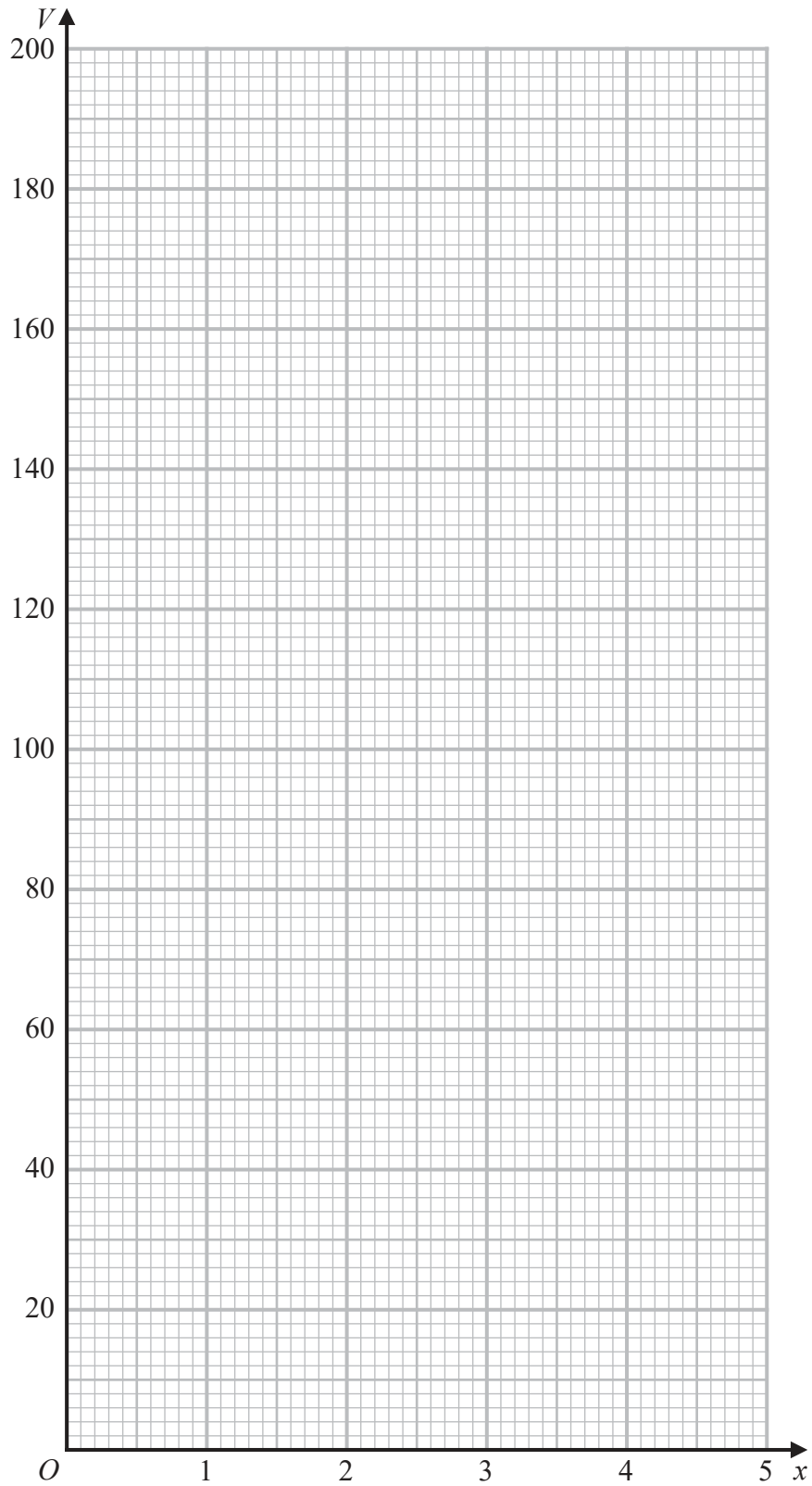
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



P 6 9 4 8 9 A 0 2 5 3 2

Question 10 continued



Turn over for a spare grid if you need to redraw your curve.

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



P 6 9 4 8 9 A 0 2 7 3 2

Question 10 continued

Handwriting practice area with 20 horizontal dotted lines.

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DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

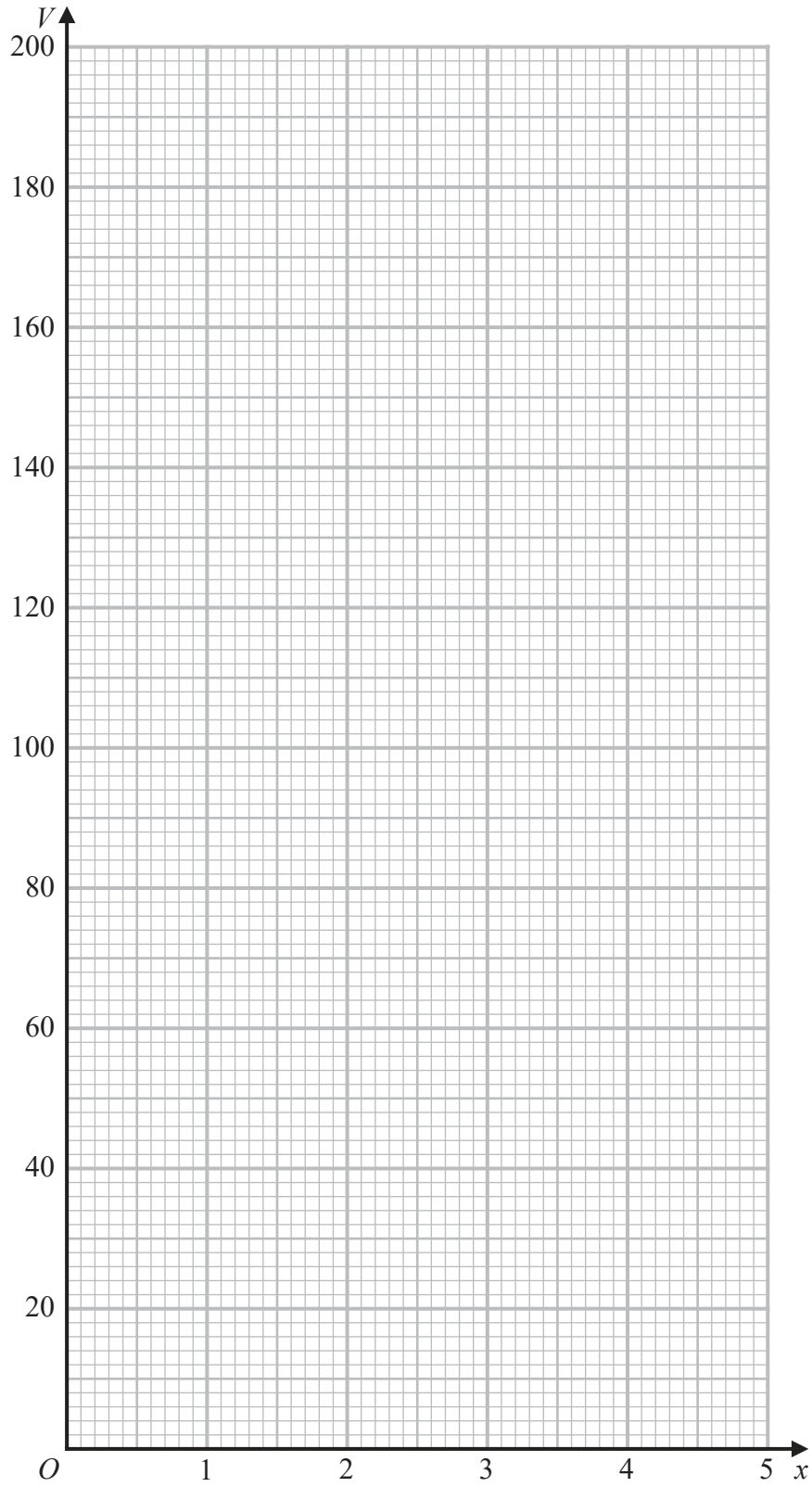
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Question 10 continued

Only use this grid if you need to redraw your curve.



(Total for Question 10 is 15 marks)

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DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



P 6 9 4 8 9 A 0 2 9 3 2

Question 11 continued

Handwriting practice area with horizontal dotted lines.

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



P 6 9 4 8 9 A 0 3 1 3 2

