

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

Monday 10 June 2024

Morning (Time: 2 hours 30 minutes)	Paper reference	4MB1/02
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Mathematics B

PAPER 2



<p>You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.</p>	Total Marks
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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 ►

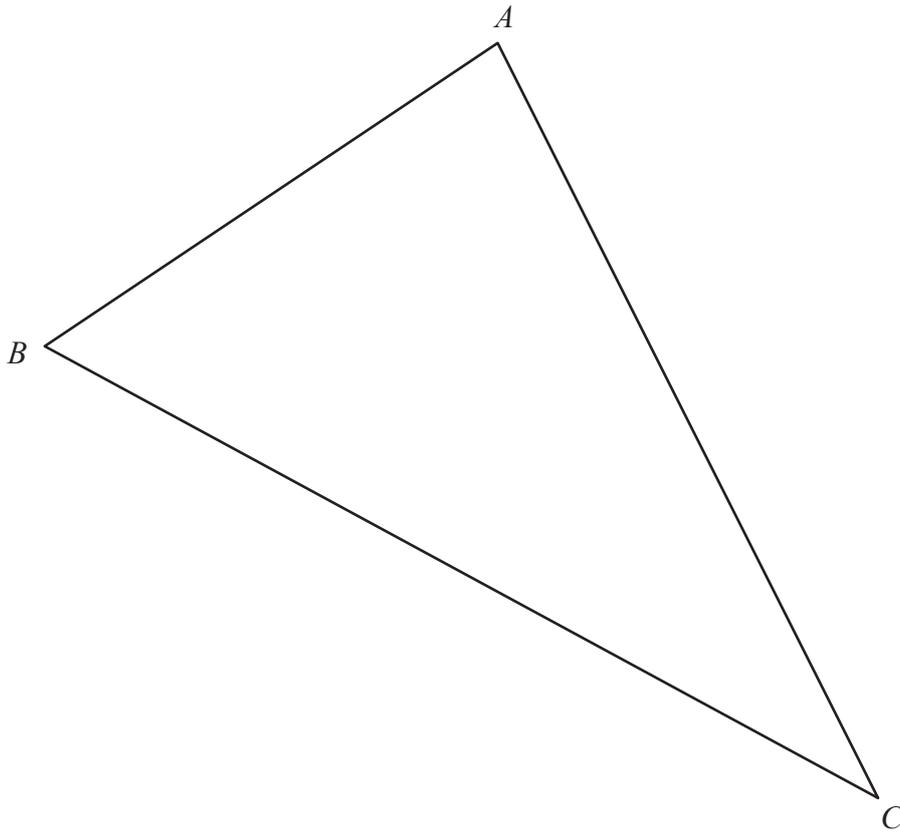
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2



The diagram shows triangle ABC

Using ruler and compasses only and **showing all your construction lines**, construct

- (a) the locus of the points that are 3 cm from B (1)
- (b) the perpendicular bisector of AC (2)
- (c) the bisector of $\angle ACB$ (2)

The region R consists of all the points inside the triangle that are closer to A than to C , closer to BC than to AC and more than 3 cm from B

- (d) Show, by shading, the region R
Label the region R (1)

(Total for Question 2 is 6 marks)

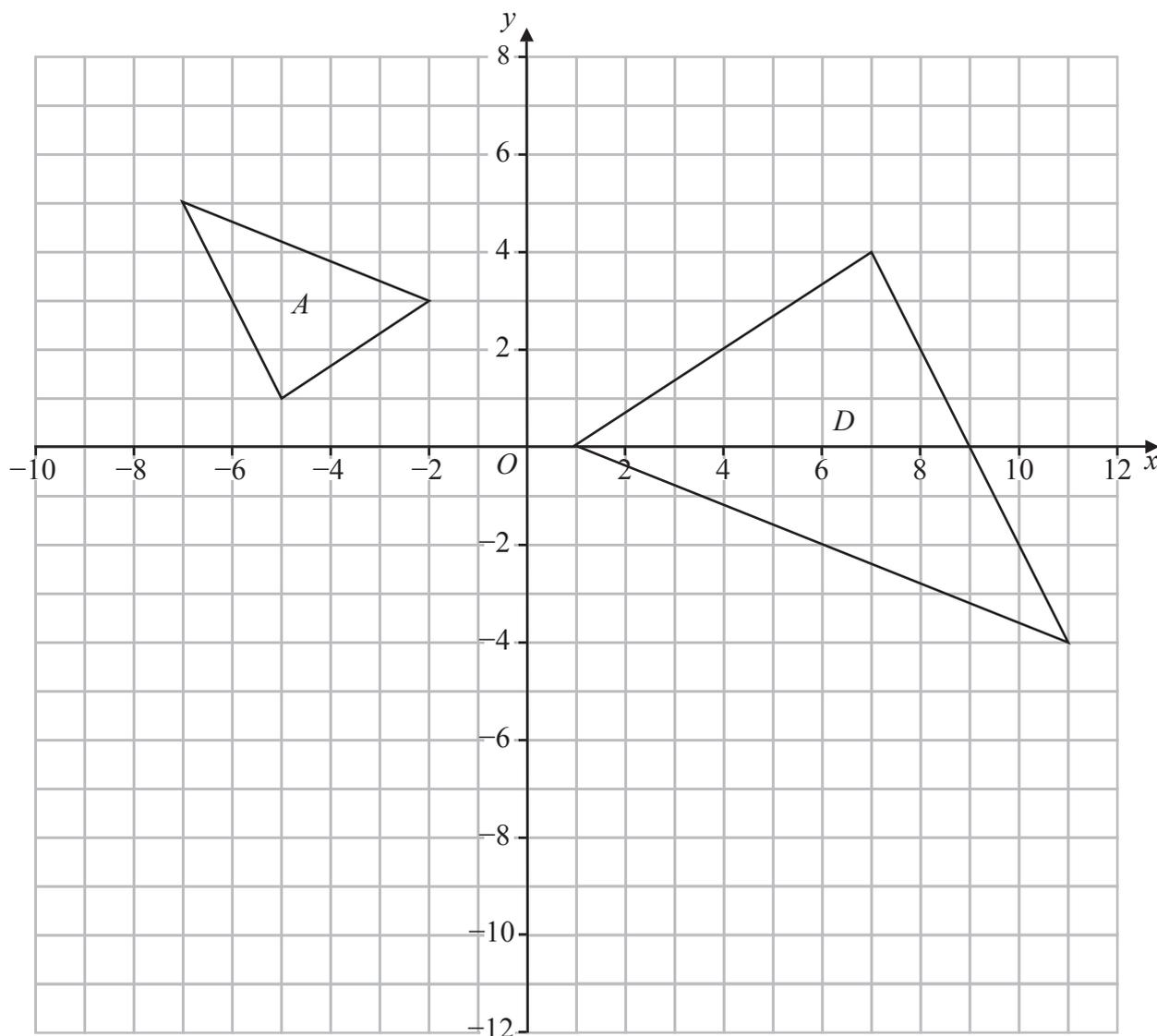
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Question 4 continued



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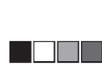
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Turn over for a spare grid if you need to redraw your triangles.



Question 4 continued

Handwriting practice area consisting of 25 horizontal dotted lines for writing.

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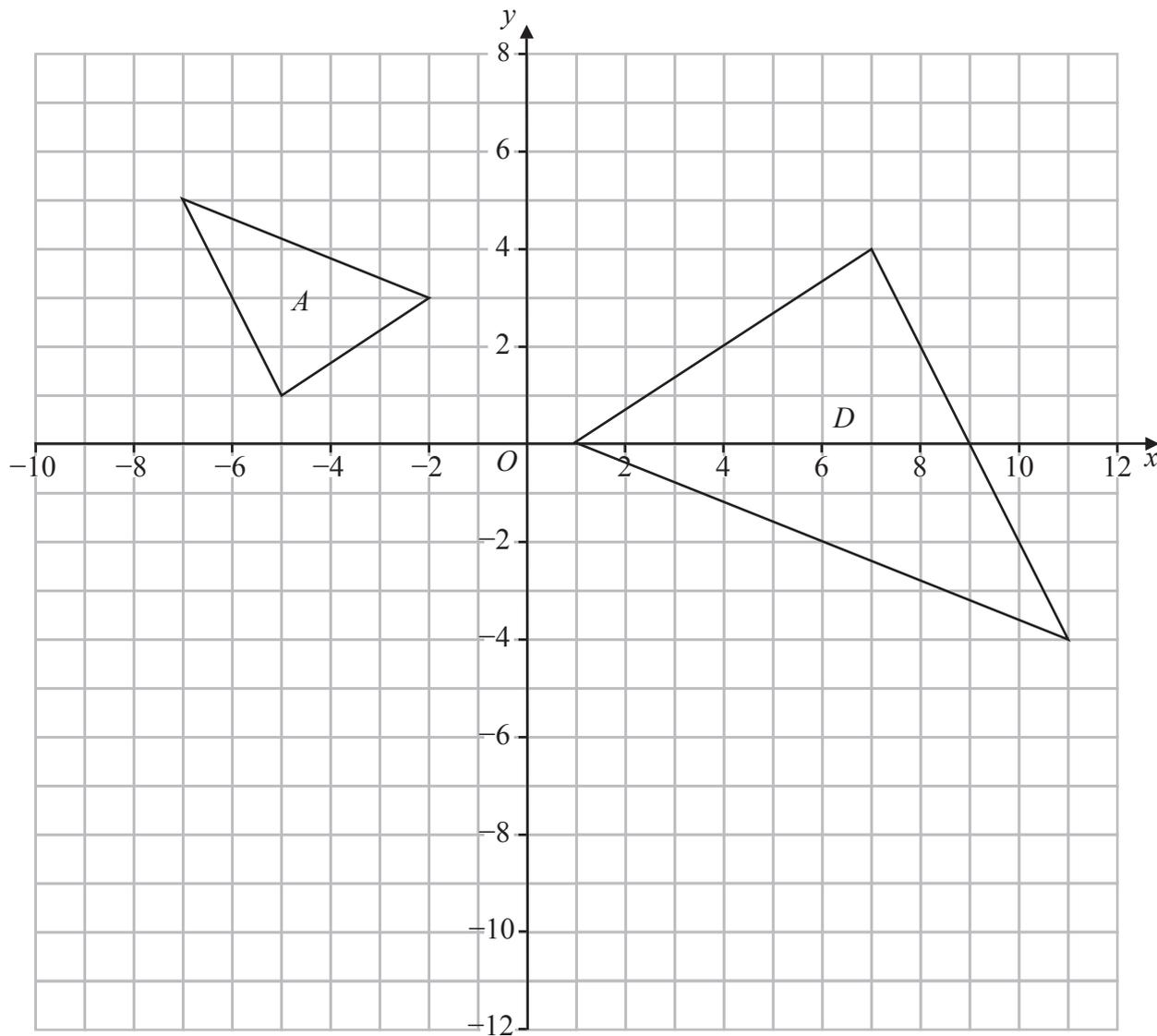
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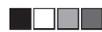
Question 4 continued

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



(Total for Question 4 is 13 marks)

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- 5 A particle P is moving along a straight line.
At time t seconds, the displacement, x metres, of P from a fixed point O on the line is given by

$$x = kt^2 - t^3$$

When $t = 2$ the velocity of particle P is 24 m/s

Particle P comes to instantaneous rest at the point A

Find the distance, in metres, between O and A

(5)

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Question 5 continued

Area with horizontal dotted lines for writing.

(Total for Question 5 is 5 marks)



Question 6 continued

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Area with horizontal dotted lines for writing.



Question 6 continued

Area with horizontal dotted lines for writing.

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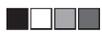
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Question 6 continued

Area with horizontal dotted lines for writing answers.

(Total for Question 6 is 10 marks)



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Question 7 continued

Handwriting practice area with horizontal dotted lines.



Question 7 continued

Handwriting practice area consisting of 25 horizontal dotted lines.

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Question 7 continued

Area with horizontal dotted lines for writing.

(Total for Question 7 is 8 marks)



8 A Swiss company makes three different types of watches, diver, calendar and automatic.

The numbers of each type of watch made in January is such that

$$\text{diver} : \text{calendar} : \text{automatic} = 4 : 6 : 5$$

The number of calendar watches the company makes in January is 54

(a) Calculate the number of diver watches the company makes in January. (2)

Mel works for the company. She earns 32 Swiss francs for each hour worked plus 6% of the value of the watches she sells.

In January Mel works 120 hours and sells watches to the value of 13 000 Swiss francs.

(b) Calculate the total amount Mel earns in January. (2)

In February Mel works 150 hours and earns a total amount of 8040 Swiss francs.

(c) Calculate the value of the watches Mel sells in February. (3)

In March the company makes 250 automatic watches.

The cost to make each automatic watch is 80 Swiss francs.

64% of these automatic watches are sold for 140 Swiss francs each.

The remaining automatic watches are sold in America for \$216 each.

Using an exchange rate of 1 Swiss franc = \$1.08

(d) calculate the total profit, in Swiss francs, the company makes on these 250 automatic watches. (5)

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Question 8 continued

Area with horizontal dotted lines for writing.



Question 8 continued

Handwriting practice area consisting of 25 horizontal dotted lines for writing.

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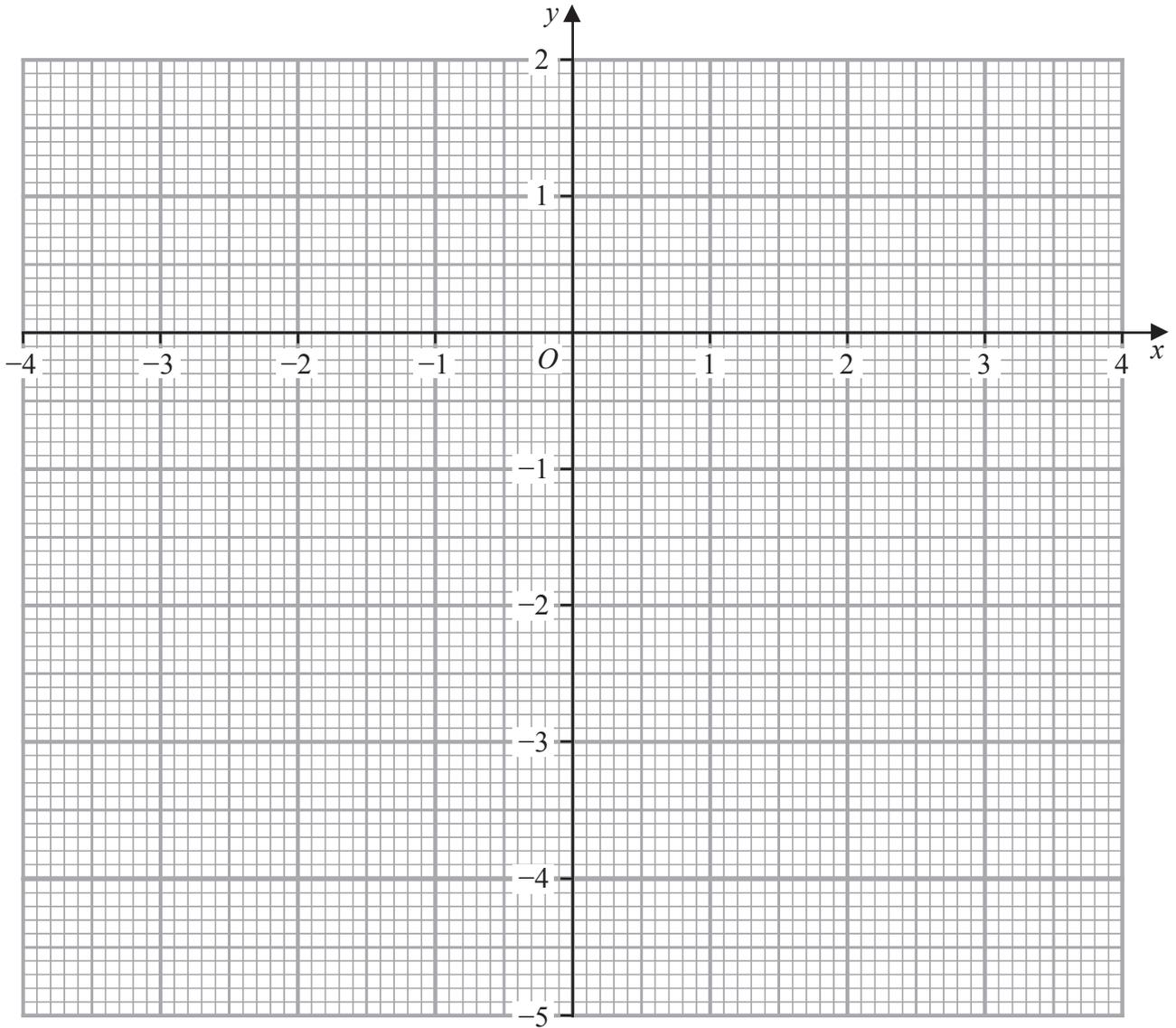
Question 8 continued

Area with horizontal dotted lines for writing answers.

(Total for Question 8 is 12 marks)



Question 9 continued



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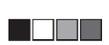
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Turn over for a spare grid if you need to redraw your graph.



Question 9 continued

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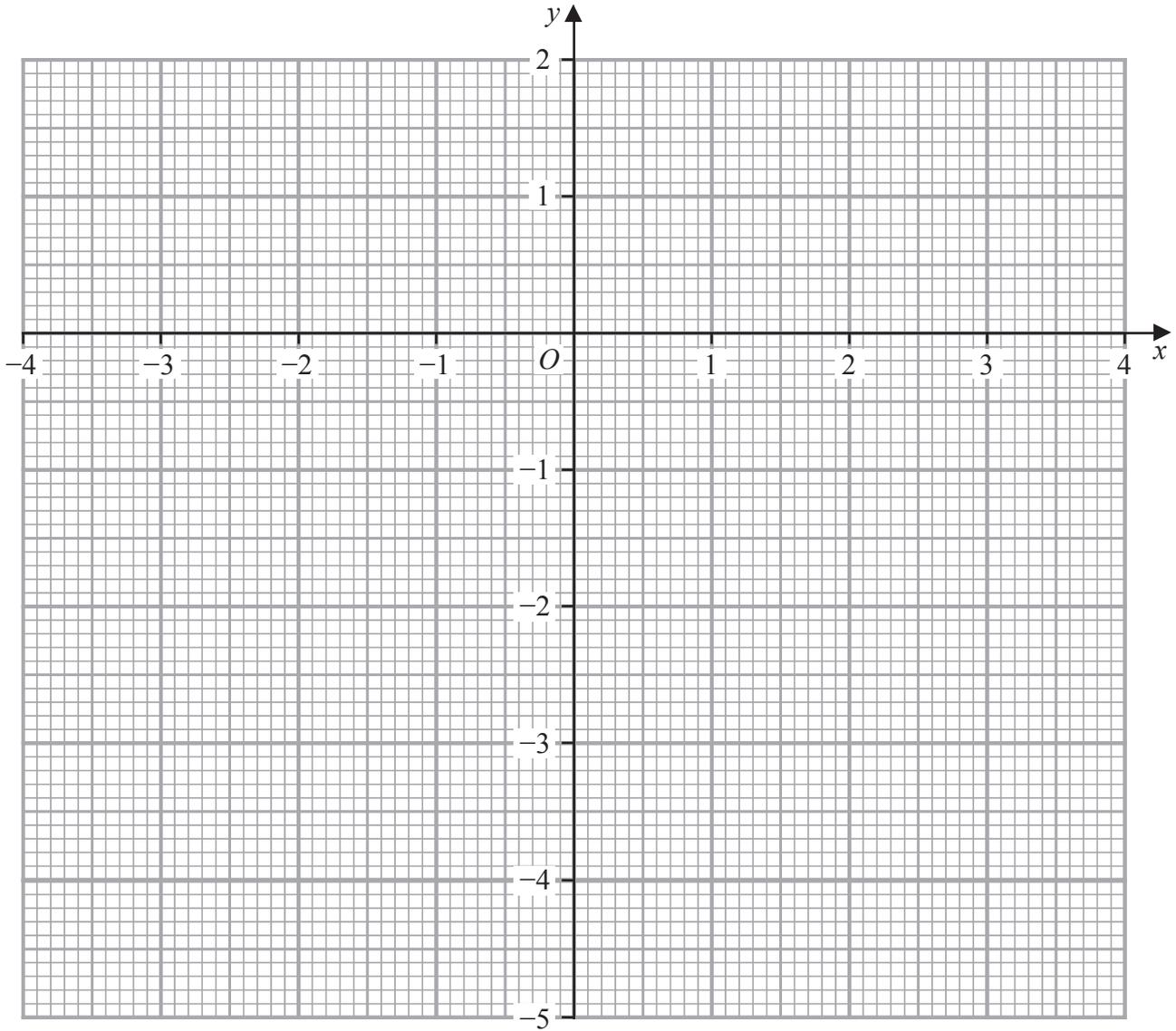
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Question 9 continued

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(Total for Question 9 is 10 marks)



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Question 10 continued

Area with horizontal dotted lines for writing.

(Total for Question 10 is 11 marks)



Question 11 continued

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Handwriting practice area with horizontal dotted lines.



