


Please check the examination details below before entering your candidate information

Candidate surname					Other names				
Pearson Edexcel International GCSE		Centre Number				Candidate Number			
		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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	
								<input type="text"/>	

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.
- Good luck with your examination.

Turn over ►

P66022RA

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1/1/1/1



P 6 6 0 2 2 R A 0 1 3 2



Pearson

Answer ALL ELEVEN questions.

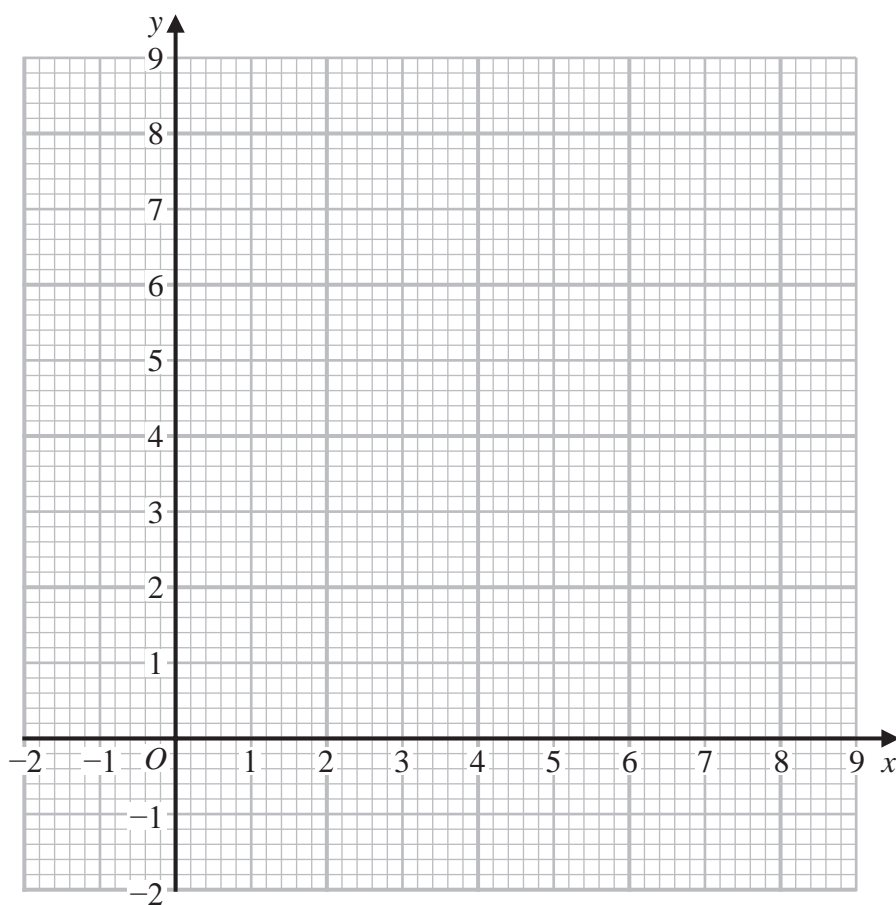
Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 (a) By drawing suitable straight lines on the grid below, show, by shading, the region R defined by all of the inequalities

$$y \leq x \quad x + y \leq 8 \quad y \geq 2$$

Label the region R .



(3)

The point P with coordinates (x, y) is a point of the region R .

Given that x and y are **integers** and that P lies on the straight line with equation $x - 2y + 2 = 0$

- (b) write down the coordinates of **all** possible points P .

(2)

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Question 1 continued

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Area with horizontal dotted lines for writing.

(Total for Question 1 is 5 marks)



P 6 6 0 2 2 R A 0 3 3 2

Question 2 continued

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(Total for Question 2 is 8 marks)



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Question 3 continued

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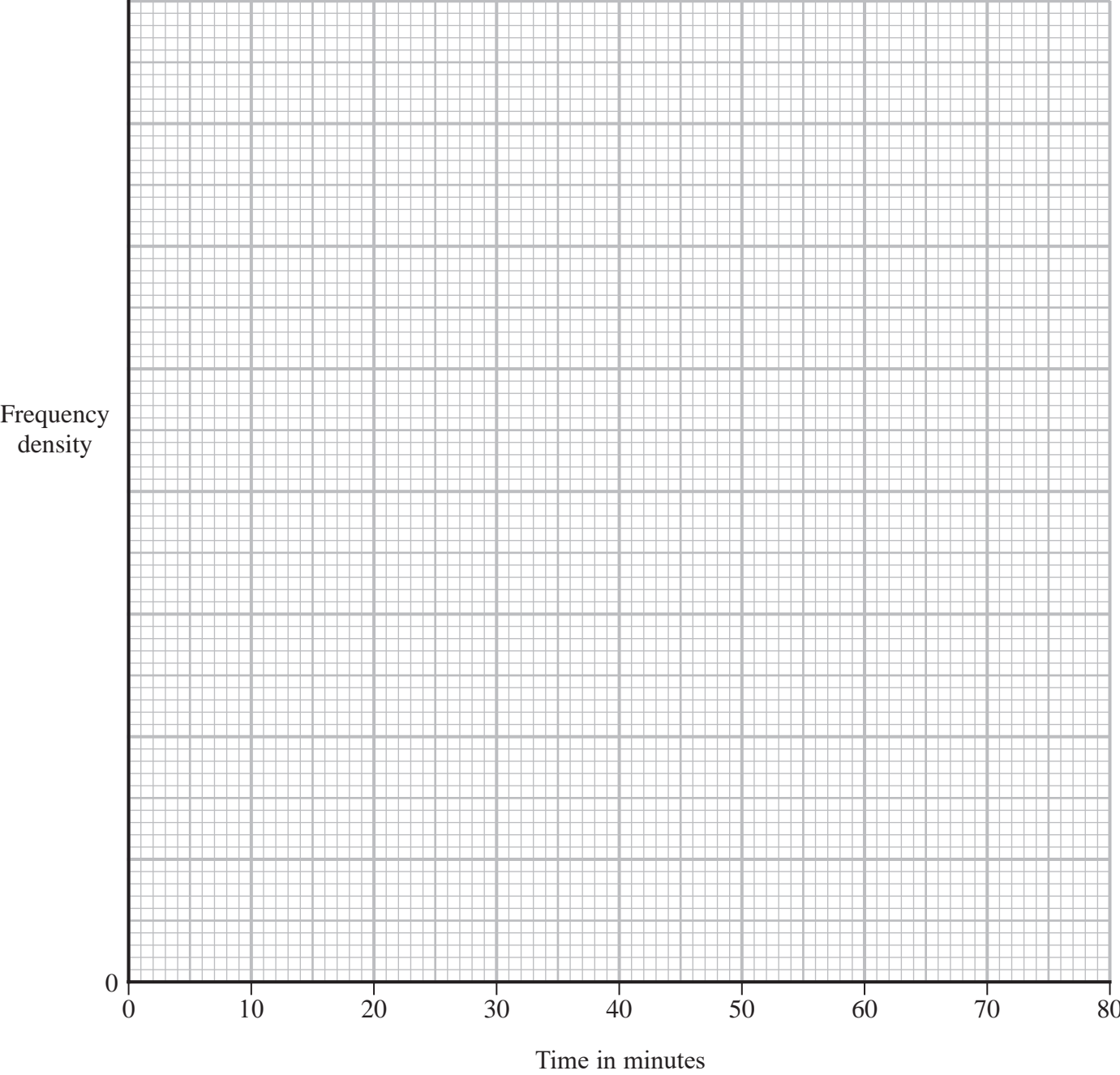
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(Total for Question 3 is 9 marks)



Question 4 continued

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(Total for Question 4 is 12 marks)

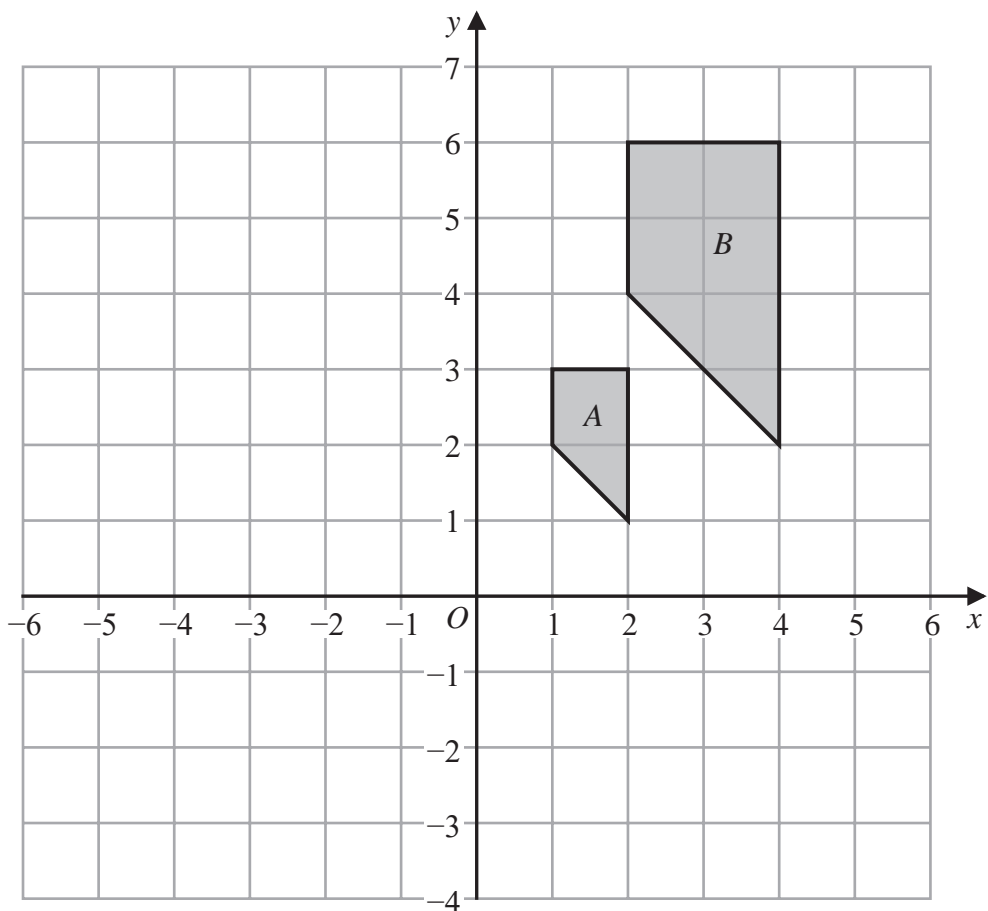


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Question 5 continued



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

A series of horizontal dotted lines for writing or drawing.



Question 5 continued

Area with horizontal dotted lines for writing.

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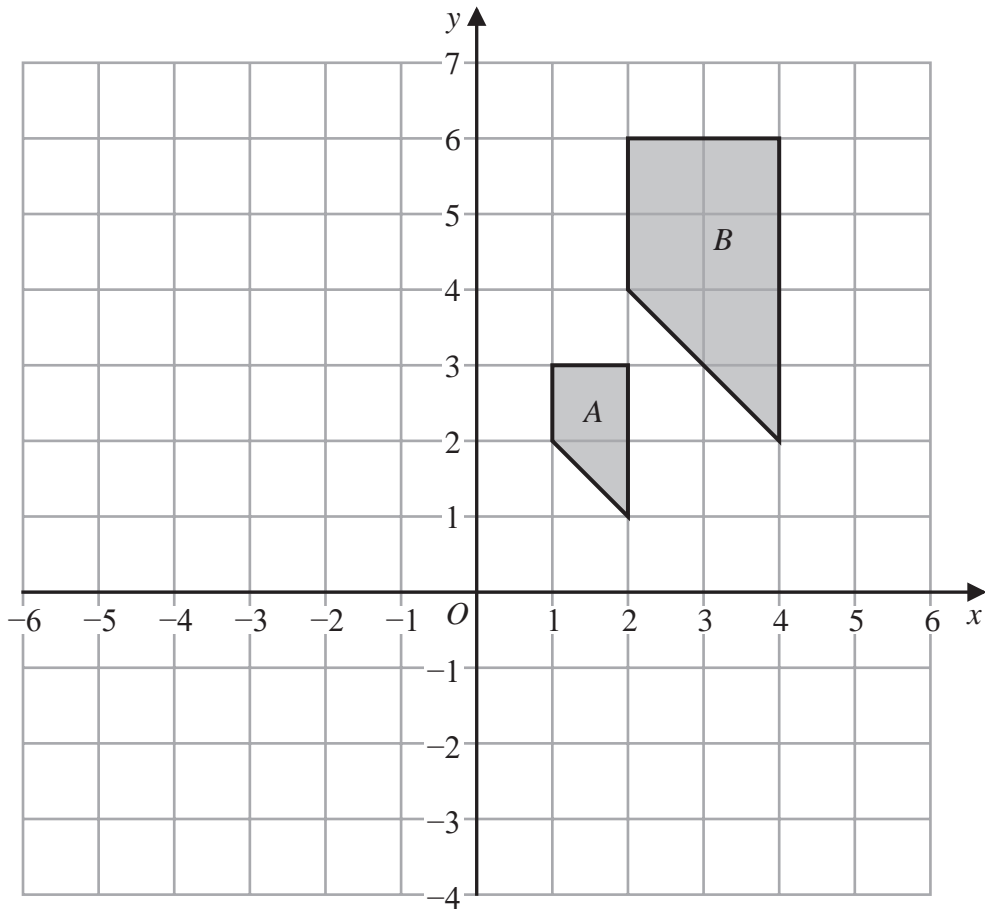
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Question 5 continued

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(Total for Question 5 is 11 marks)



- 6 The point A has coordinates $(5, 4)$ and the point B has coordinates $(-7, -1)$

The point C is such that $\overrightarrow{BC} = \begin{pmatrix} 3 \\ 4 \end{pmatrix}$

- (a) Find the coordinates of the point C .

(2)

The point D is such that $ABCD$ is a parallelogram with diagonals AC and BD .

The length of BC is 5 cm.

- (b) Find the area, in cm^2 , of the parallelogram $ABCD$.

(5)

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$$\left[\begin{array}{l} \text{Cosine rule : } a^2 = b^2 + c^2 - 2bc \cos A \\ \text{Area of triangle} = \frac{1}{2} ab \sin C \end{array} \right]$$



Question 6 continued

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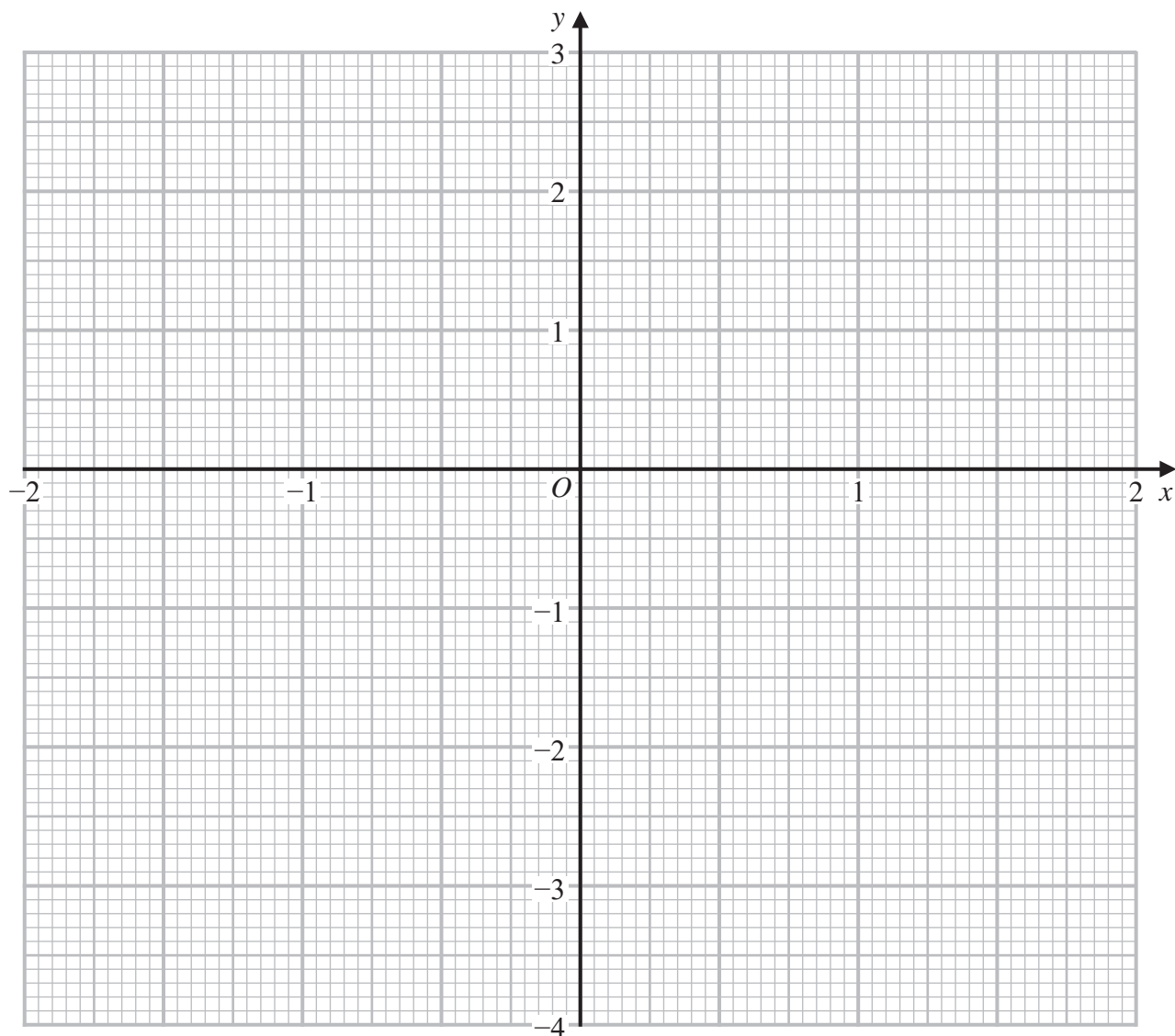
Area with horizontal dotted lines for writing.

(Total for Question 6 is 7 marks)



P 6 6 0 2 2 R A 0 1 5 3 2

Question 7 continued



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

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Question 7 continued

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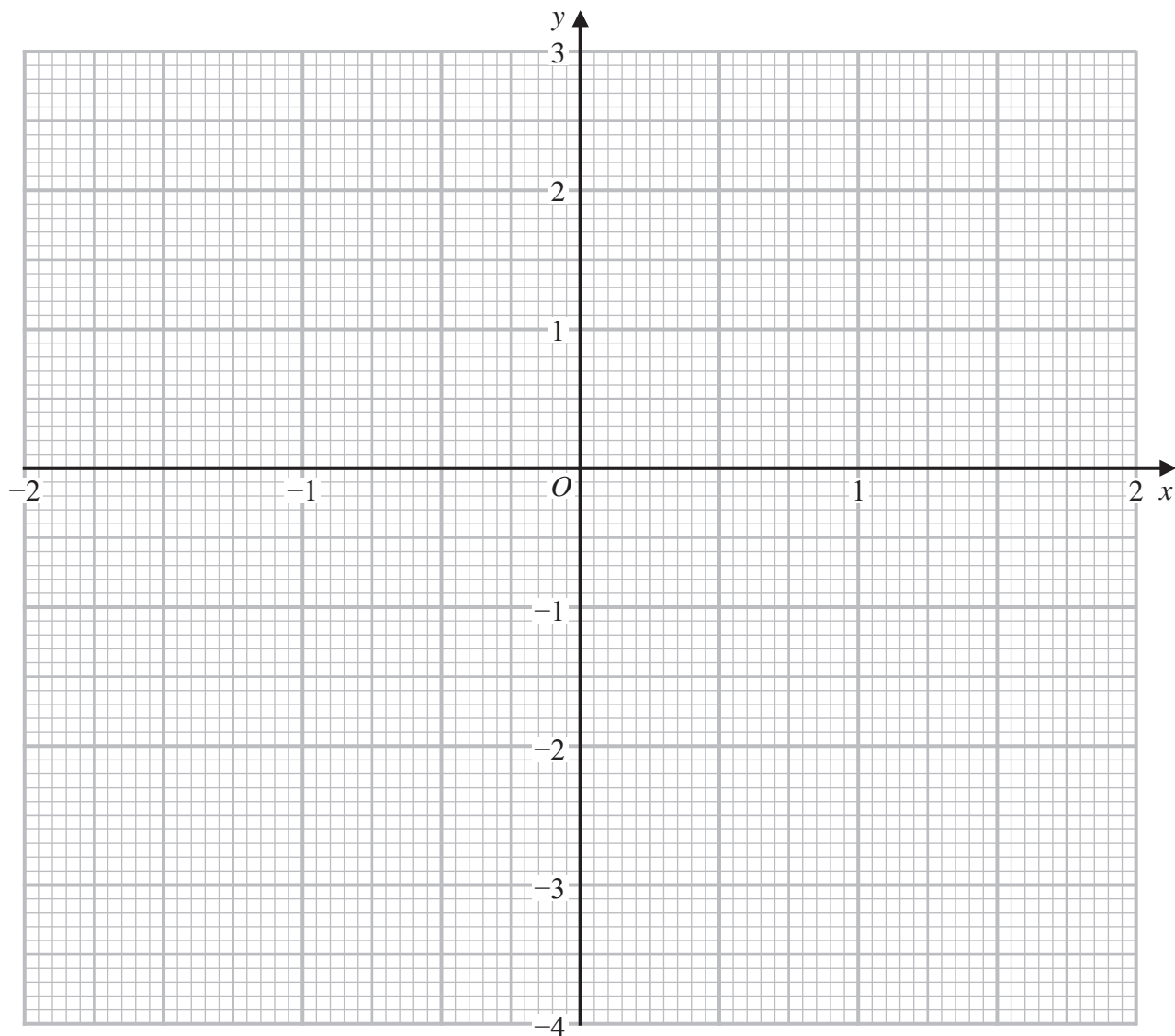
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Question 7 continued

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



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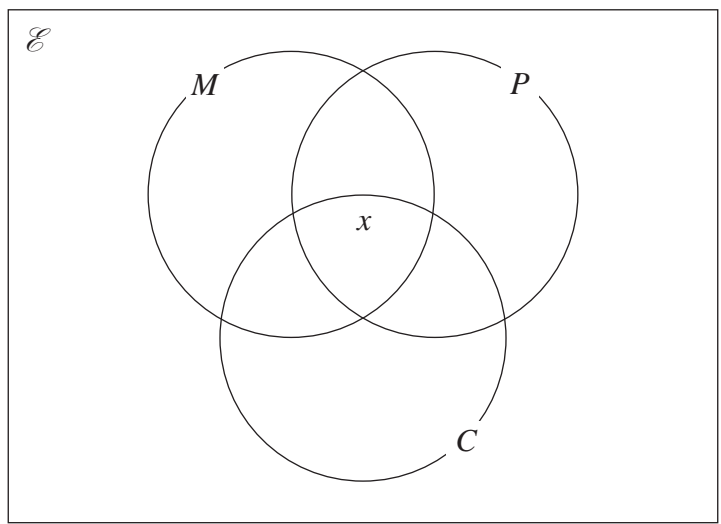
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(Total for Question 7 is 10 marks)



Question 8 continued



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(Total for Question 8 is 10 marks)



Question 9 continued

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Area with horizontal dotted lines for writing.

(Total for Question 9 is 6 marks)



10

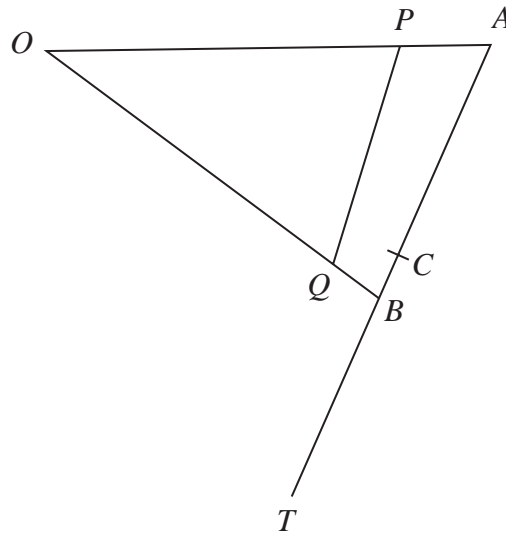


Diagram NOT accurately drawn

Figure 3

Figure 3 shows the triangle OAB in which $\vec{OA} = 4\mathbf{a}$ and $\vec{OB} = 6\mathbf{b}$

C is the point on AB such that $AC : CB = 3 : 1$

(a) Find and simplify an expression for \vec{OC} in terms of \mathbf{a} and \mathbf{b} .

(3)

The point T is such that ABT is a straight line and $AC = CT$.

The point P is such that $\vec{OP} = \frac{3}{4}\vec{OA}$

Q is the point on OB such that the points P , Q and T are collinear.

Given that $OQ : QB = n : 1$

(b) find the value of n .

(4)

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Question 10 continued

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Question 10 continued

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Area with horizontal dotted lines for writing.

(Total for Question 10 is 7 marks)



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Question 11 continued

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Question 11 continued

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(Total for Question 11 is 15 marks)

TOTAL FOR PAPER IS 100 MARKS



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