

Please check the examination details below before entering your candidate information

Candidate surname

Other names

**Pearson Edexcel
International GCSE**

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--	--

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.
- Good luck with your examination.

Turn over ►

P66022RA

©2021 Pearson Education Ltd.

1/1/1/1



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



Pearson

Answer ALL ELEVEN questions.

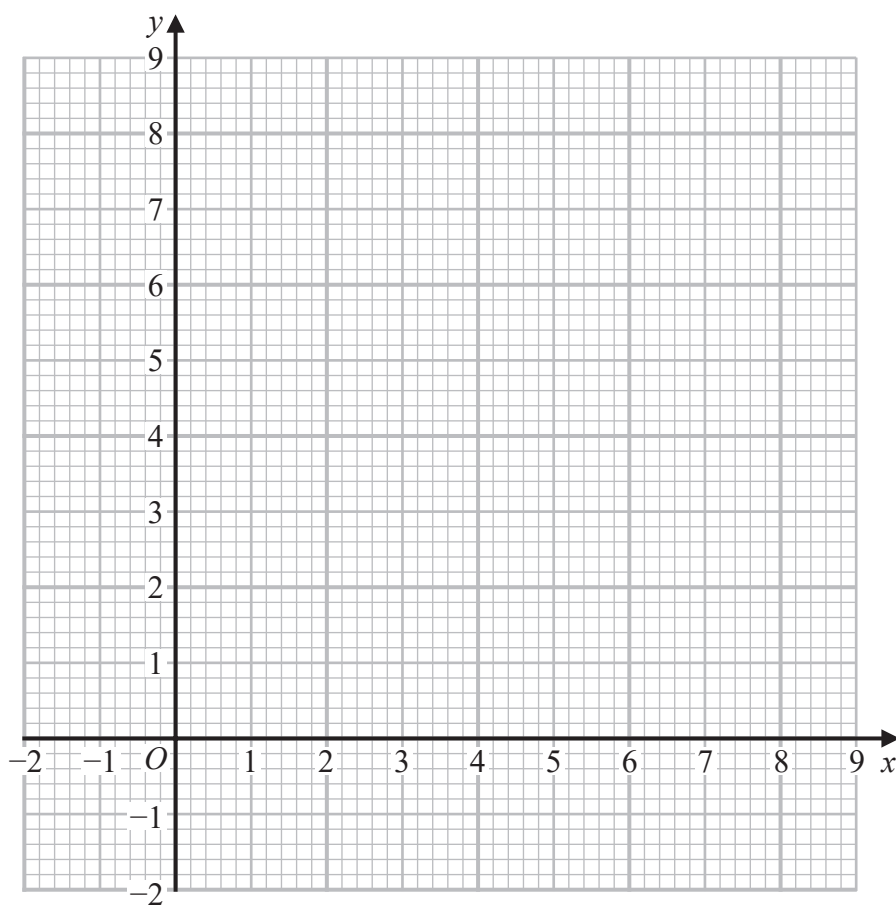
Write your answers in the spaces provided.

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)

.....

.....

.....



Question 1 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

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

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Area with horizontal dotted lines for writing.

(Total for Question 2 is 8 marks)



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

Question 3 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

.....

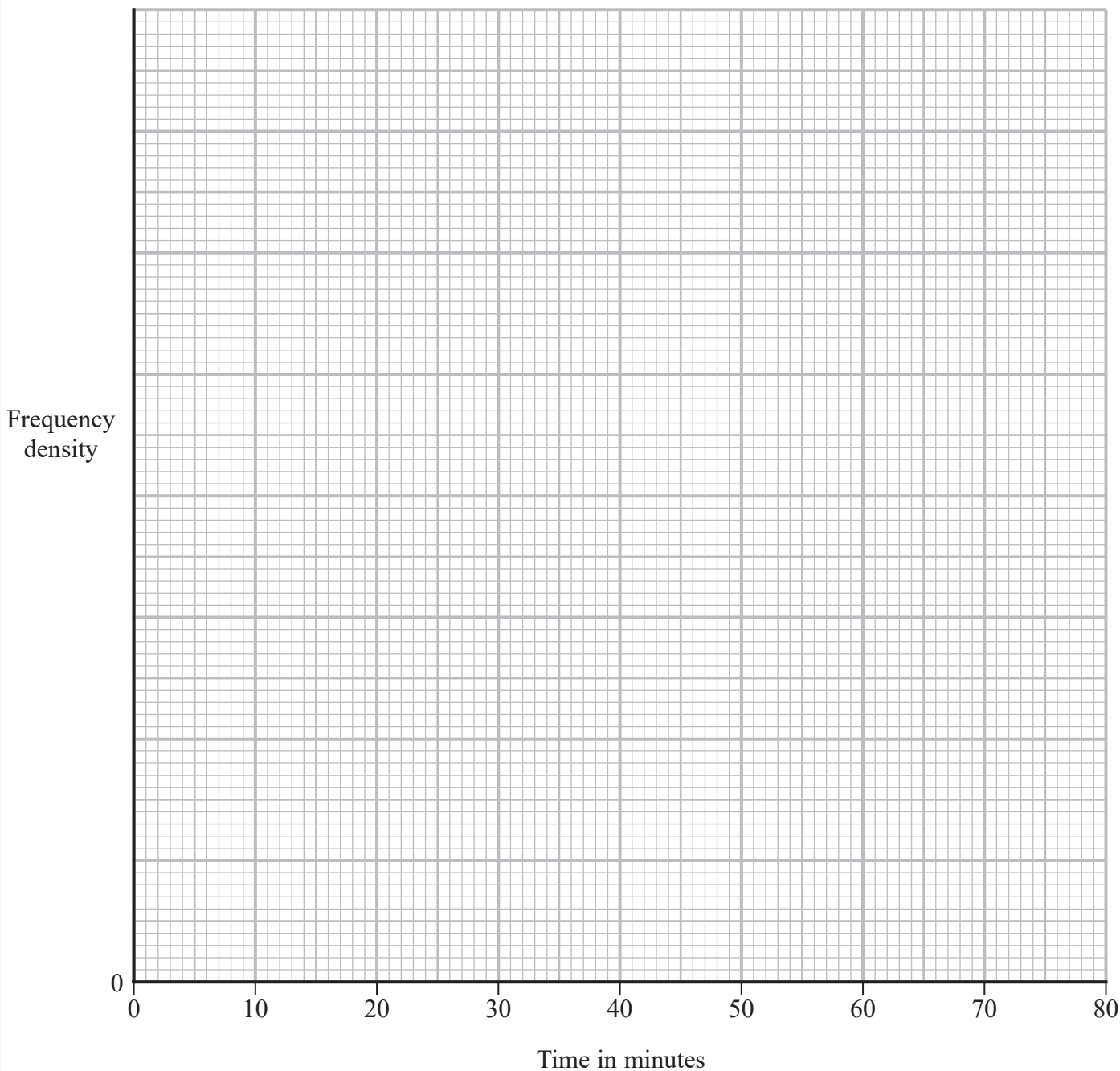
.....

.....

.....

.....

.....



(Total for Question 3 is 9 marks)



Question 4 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

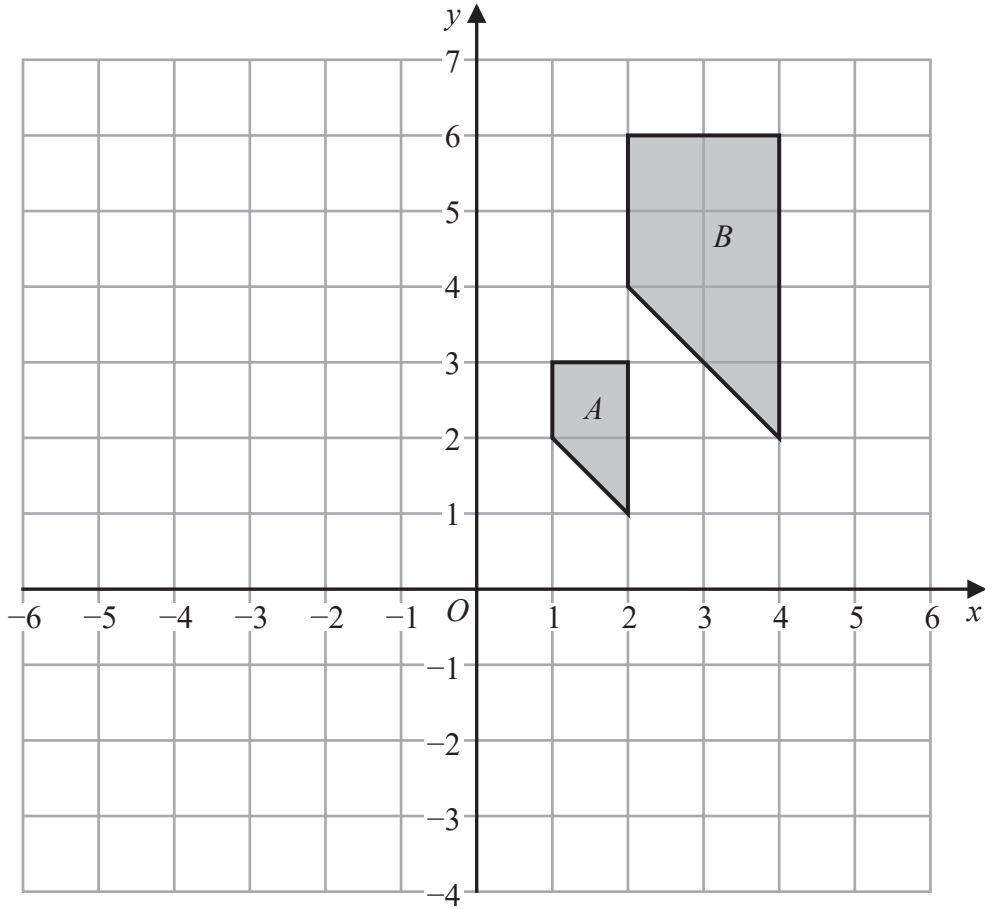
DO NOT WRITE IN THIS AREA

Area with horizontal dotted lines for writing.

(Total for Question 4 is 12 marks)



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.

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Question 5 continued

Handwriting practice area consisting of 25 horizontal dotted lines.

DO NOT WRITE IN THIS AREA

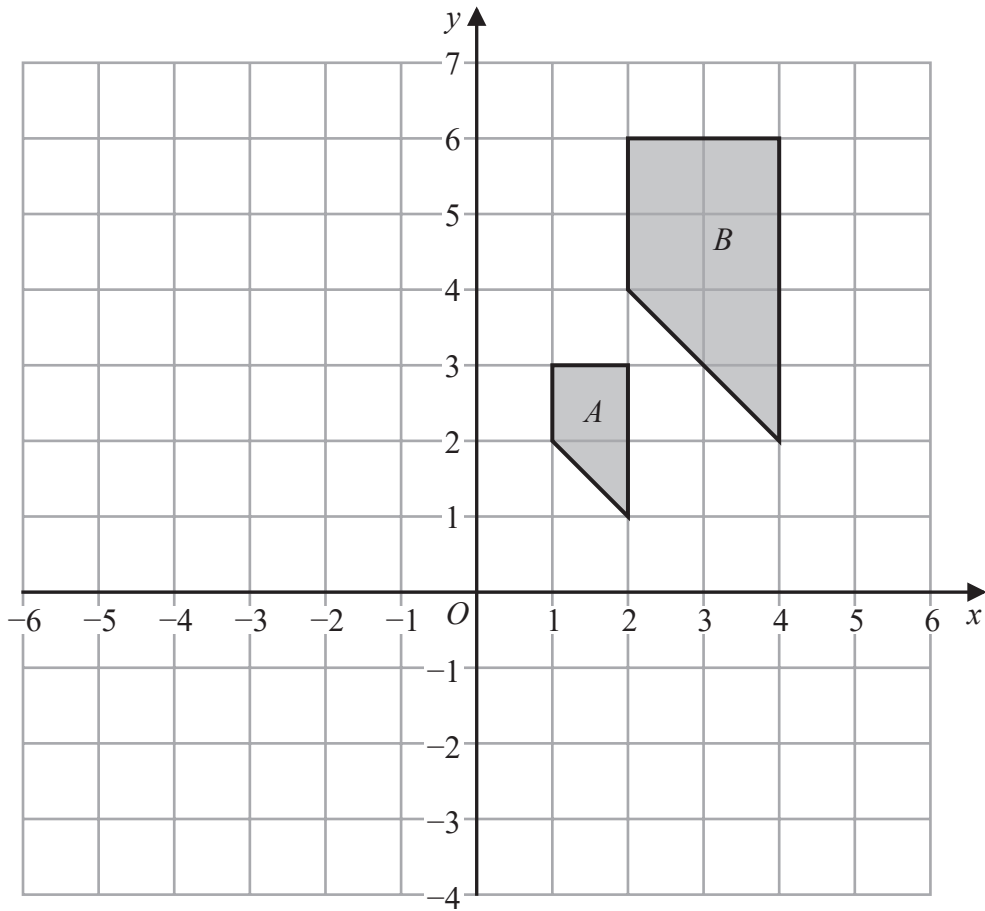
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Question 5 continued

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



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(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)

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



Question 6 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

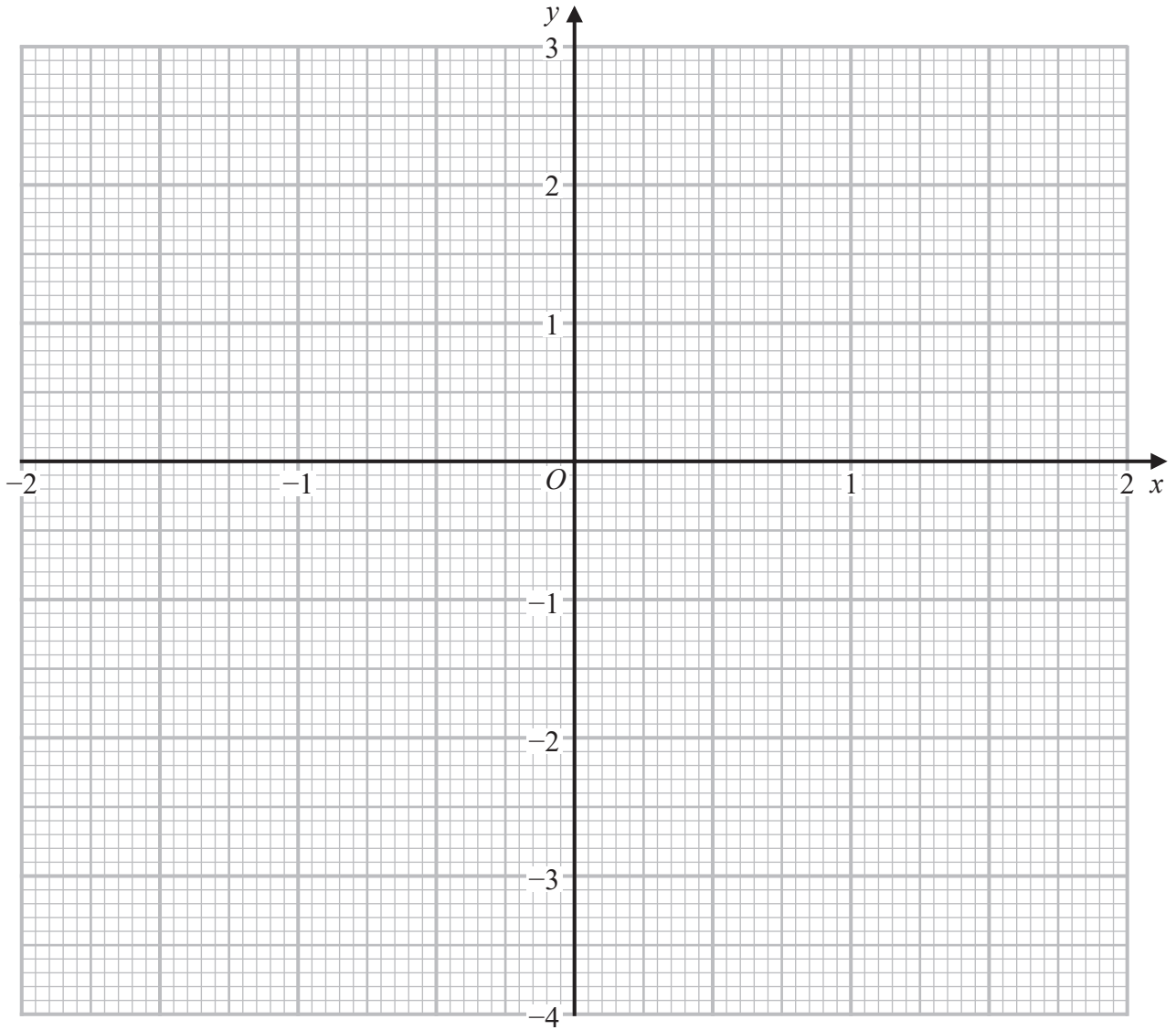
Area with horizontal dotted lines for writing.

(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.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Question 7 continued

Handwriting practice area consisting of 25 horizontal dotted lines.

DO NOT WRITE IN THIS AREA

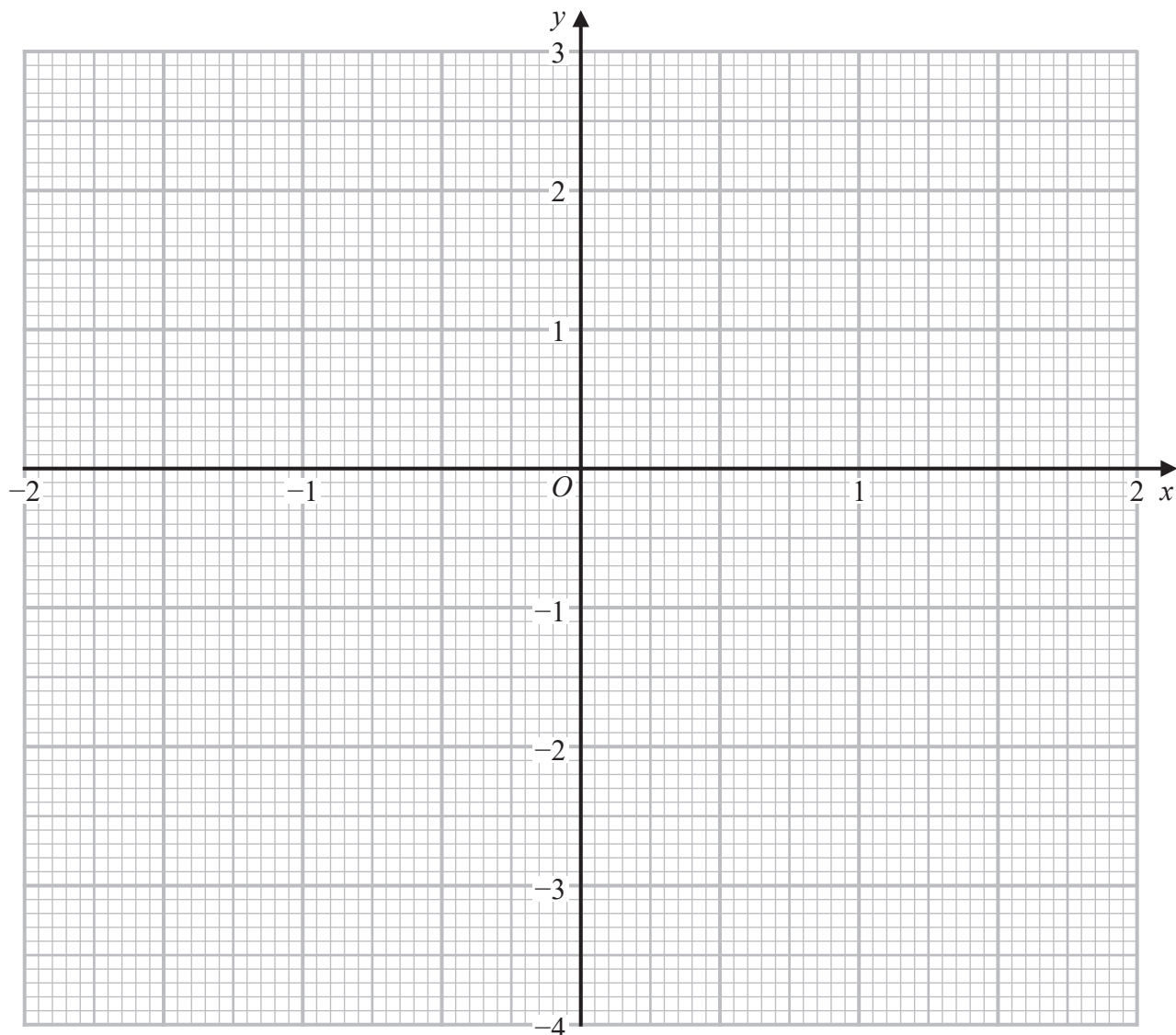
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Question 7 continued

Only use this 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

.....

.....

.....

.....

.....

.....

.....

.....

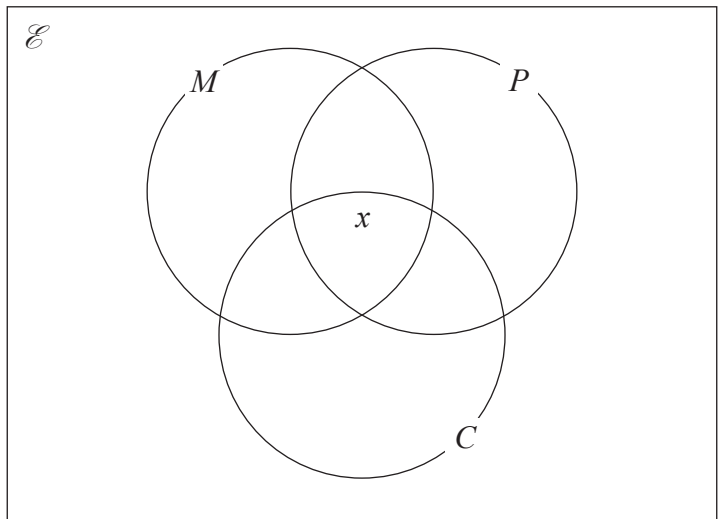
.....

.....

(Total for Question 7 is 10 marks)



Question 8 continued



Area with horizontal dotted lines for writing.

(Total for Question 8 is 10 marks)



Question 9 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Area with horizontal dotted lines for writing.

(Total for Question 9 is 6 marks)



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

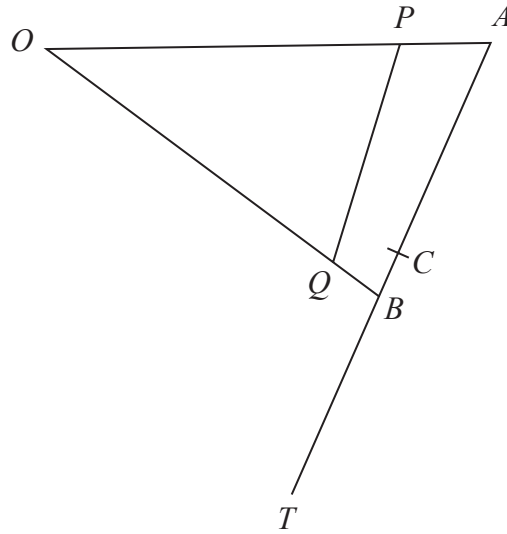


Diagram NOT accurately drawn

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)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Question 10 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Area with horizontal dotted lines for writing.



Question 10 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Area with horizontal dotted lines for writing.

(Total for Question 10 is 7 marks)



Question 11 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Handwriting practice area with 25 horizontal dotted lines.



Question 11 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Area with horizontal dotted lines for writing.

(Total for Question 11 is 15 marks)

TOTAL FOR PAPER IS 100 MARKS



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

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

BLANK PAGE

