

Write your name here	
Surname	Other names
Pearson Edexcel	Centre Number
International GCSE	Candidate Number
<h1 style="margin: 0;">Further Pure Mathematics</h1> <h2 style="margin: 0;">Paper 2</h2>	
Thursday 11 June 2015 – Afternoon	Paper Reference
Time: 2 hours	4PM0/02
Calculators 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.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

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.

Turn over ►

P44407A

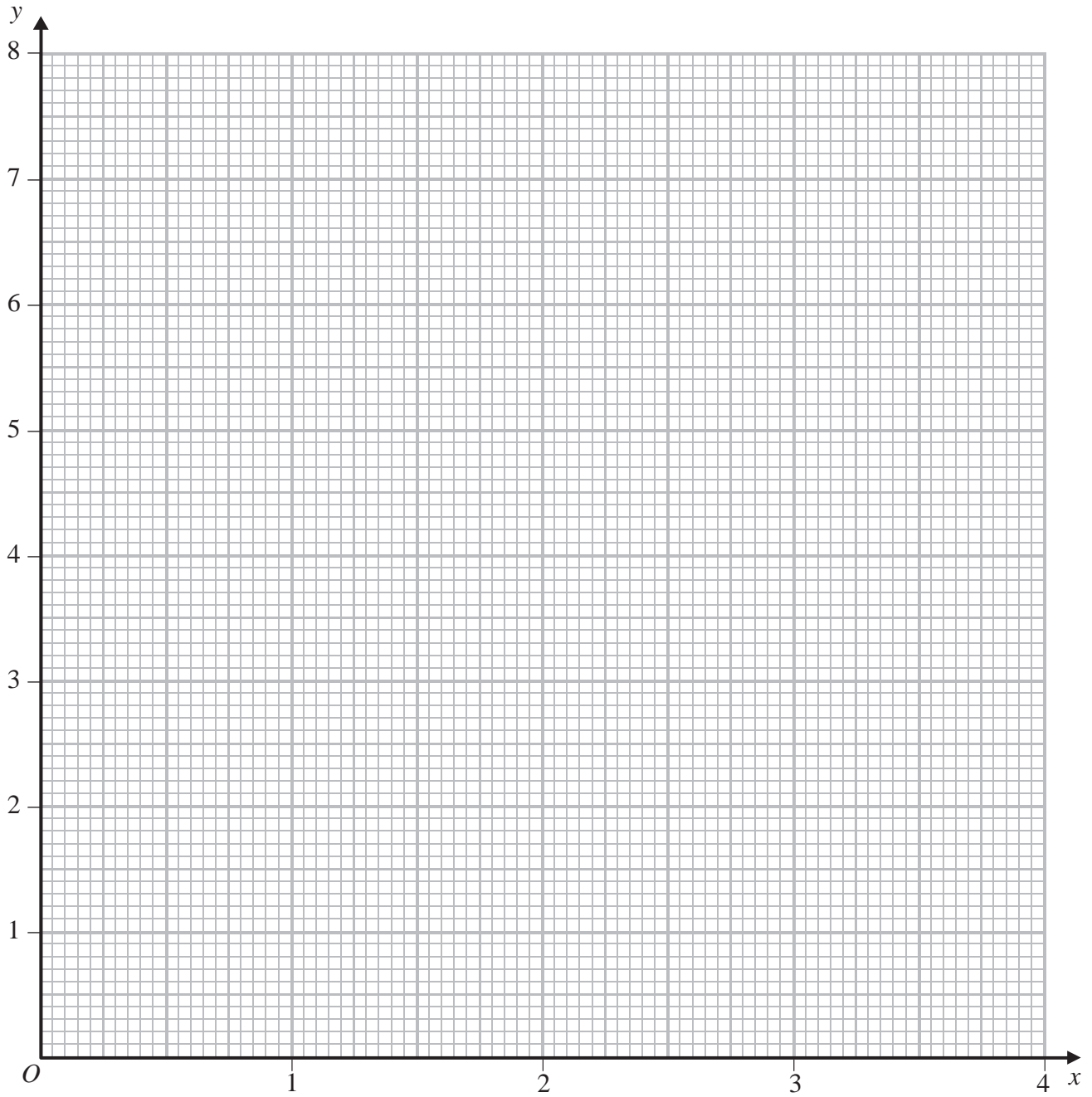
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Question 2 continued



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



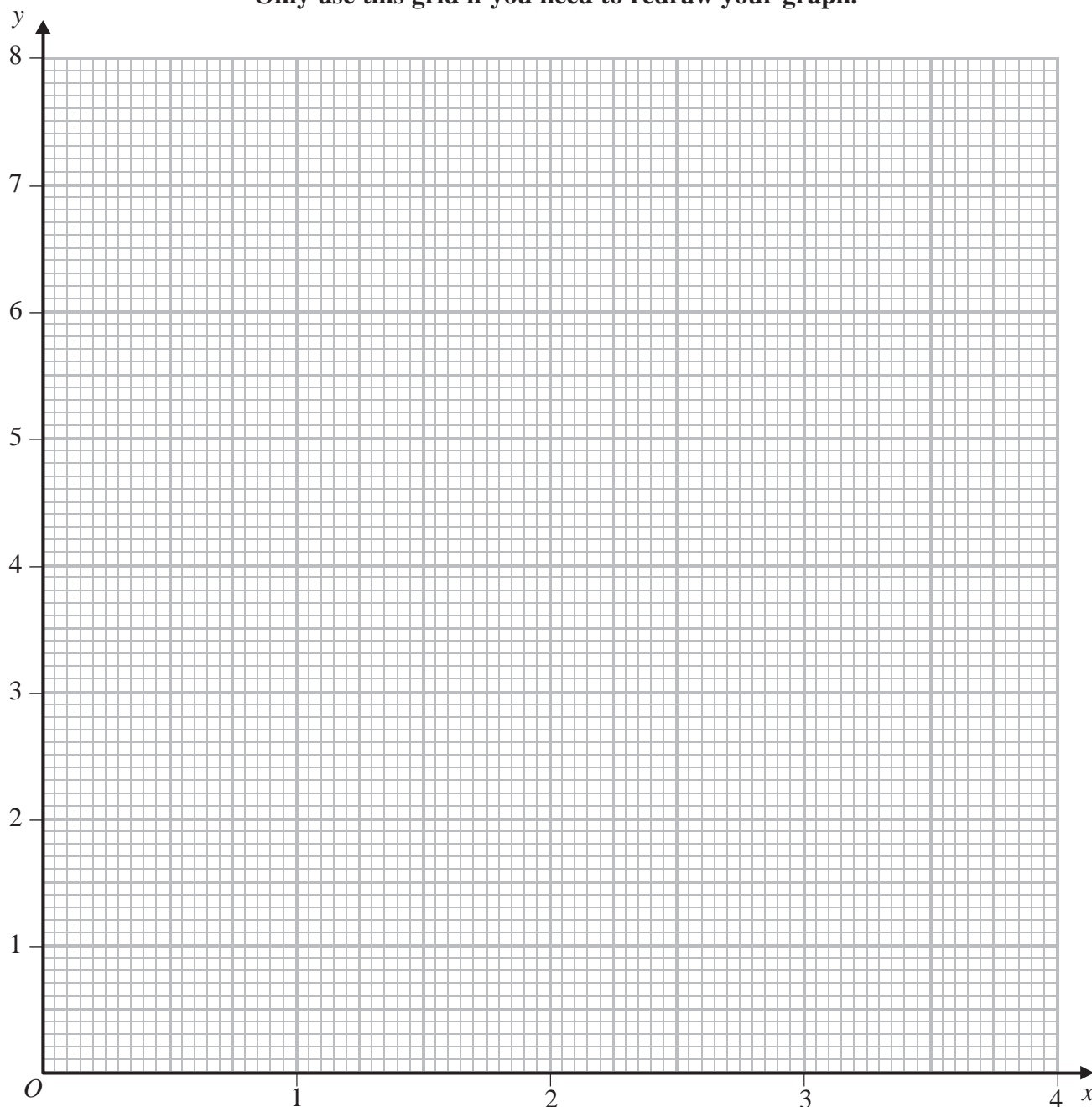
Question 2 continued

A large rectangular area with a rounded border, containing 25 horizontal dotted lines for writing.



Question 2 continued

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



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(Total for Question 2 is 8 marks)



Question 3 continued

A large rectangular area with a rounded border, containing 25 horizontal dotted lines for writing.

(Total for Question 3 is 7 marks)



Question 4 continued

A large rectangular area containing 25 horizontal dotted lines for writing answers.

(Total for Question 4 is 8 marks)



Question 5 continued

A large rectangular area containing 25 horizontal dotted lines for writing answers.

(Total for Question 5 is 10 marks)



Question 6 continued

A large rectangular area containing 25 horizontal dotted lines for writing answers.



Question 6 continued

A large rectangular area with rounded corners, containing 25 horizontal dotted lines for writing.

Question 6 continued

A large rectangular area containing 25 horizontal dotted lines for writing answers.

(Total for Question 6 is 10 marks)



Question 7 continued

A large rectangular area with rounded corners, containing 25 horizontal dotted lines for writing.



Question 7 continued

A large rectangular area containing 25 horizontal dotted lines for writing answers.

8

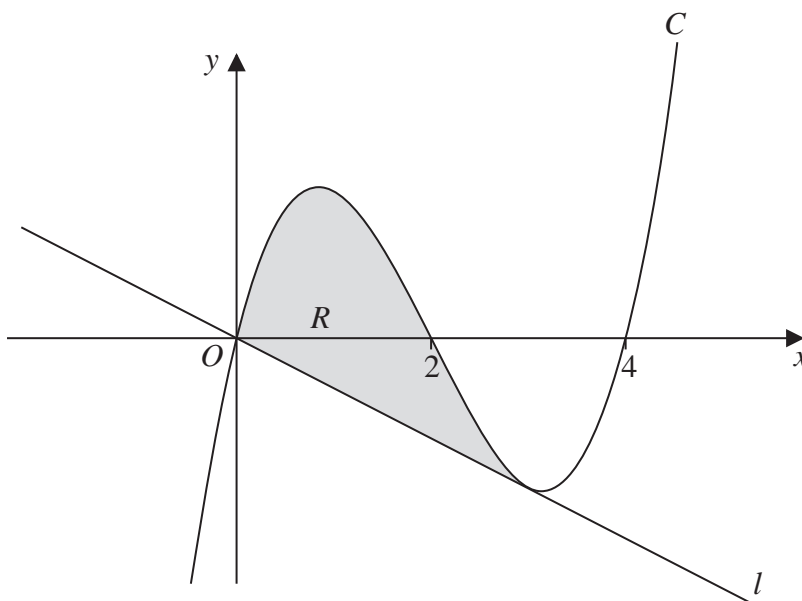


Diagram **NOT** accurately drawn

Figure 3

Figure 3 shows part of the curve C with equation $y = x^3 + ax^2 + bx + c$

The curve passes through the origin O and the points with coordinates $(2, 0)$ and $(4, 0)$.

(a) Show that $c = 0$ (1)

(b) Find the value of a and the value of b . (3)

The point P with x -coordinate 3 lies on C . The line l passes through O and meets C at P .

(c) Show that l is the tangent to C at P . (4)

The finite region R , shown shaded in Figure 3, is bounded by C and by l .

(d) Use algebraic integration to find the area of R . (5)

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Question 8 continued

A large rectangular area with rounded corners, containing 25 horizontal dotted lines for writing.



Question 8 continued

A large rectangular area containing 25 horizontal dotted lines for writing answers.

Question 8 continued

Area with horizontal dotted lines for writing.

(Total for Question 8 is 13 marks)



9 The points A and B have coordinates $(2, 9)$ and $(10, 3)$ respectively.

The point M is the midpoint of AB .

(a) Find the coordinates of M . (2)

(b) Find the length of AB . (2)

The line l is the perpendicular bisector of AB .

(c) Find an equation for l giving your answer in the form $ay = bx + c$, where a , b and c are integers. (4)

The point D lies on l and has coordinates $(d, 2)$.

(d) Find the value of d . (2)

The point E lies on l and is such that $DM : ME = 1 : 2$

(e) Find the coordinates of E . (2)

(f) Find the area of the kite $AEBD$. (4)



Question 9 continued

A large rectangular area containing 25 horizontal dotted lines for writing answers.



Question 9 continued

A series of horizontal dotted lines for writing the answer to Question 9.



Question 9 continued

A large rectangular area containing 25 horizontal dotted lines for writing answers.

(Total for Question 9 is 16 marks)



Question 10 continued

A large rectangular area containing 25 horizontal dotted lines for writing answers.



