

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 1</h2>	
Friday 13 January 2017 – Morning	Paper Reference
Time: 2 hours	4PM0/01
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 ►

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Question 1 continued

Area for writing answers, consisting of multiple horizontal dotted lines.

(Total for Question 1 is 5 marks)



Question 2 continued

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3 Use algebra to find the set of values of x for which $(3x - 1)(x - 1) < 2(3x - 1)$

(5)

Handwritten solution area with horizontal dotted lines.

(Total for Question 3 is 5 marks)



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Question 4 continued

Area for writing answers, consisting of multiple horizontal dotted lines.

(Total for Question 4 is 8 marks)



5

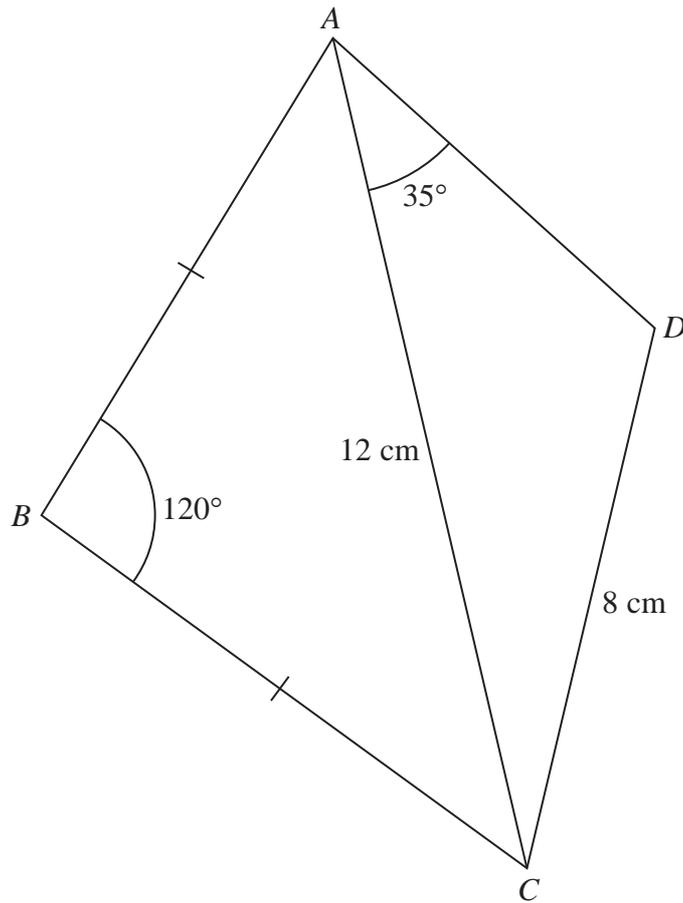


Diagram NOT accurately drawn

Figure 2

Figure 2 shows the quadrilateral $ABCD$ in which $AB = BC$.

$DC = 8 \text{ cm}$ $AC = 12 \text{ cm}$ $\angle ABC = 120^\circ$ $\angle CAD = 35^\circ$

Find

(a) the exact length, in cm, of AB . (2)

Given that angle ADC is obtuse, find

(b) the size, in degrees to 1 decimal place, of angle ADC , (3)

(c) the area, in cm^2 to 3 significant figures, of the quadrilateral $ABCD$. (6)

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Question 5 continued

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Question 5 continued

Area for writing answers, consisting of multiple horizontal dotted lines.

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Question 5 continued

Area with horizontal dotted lines for writing answers.

(Total for Question 5 is 11 marks)



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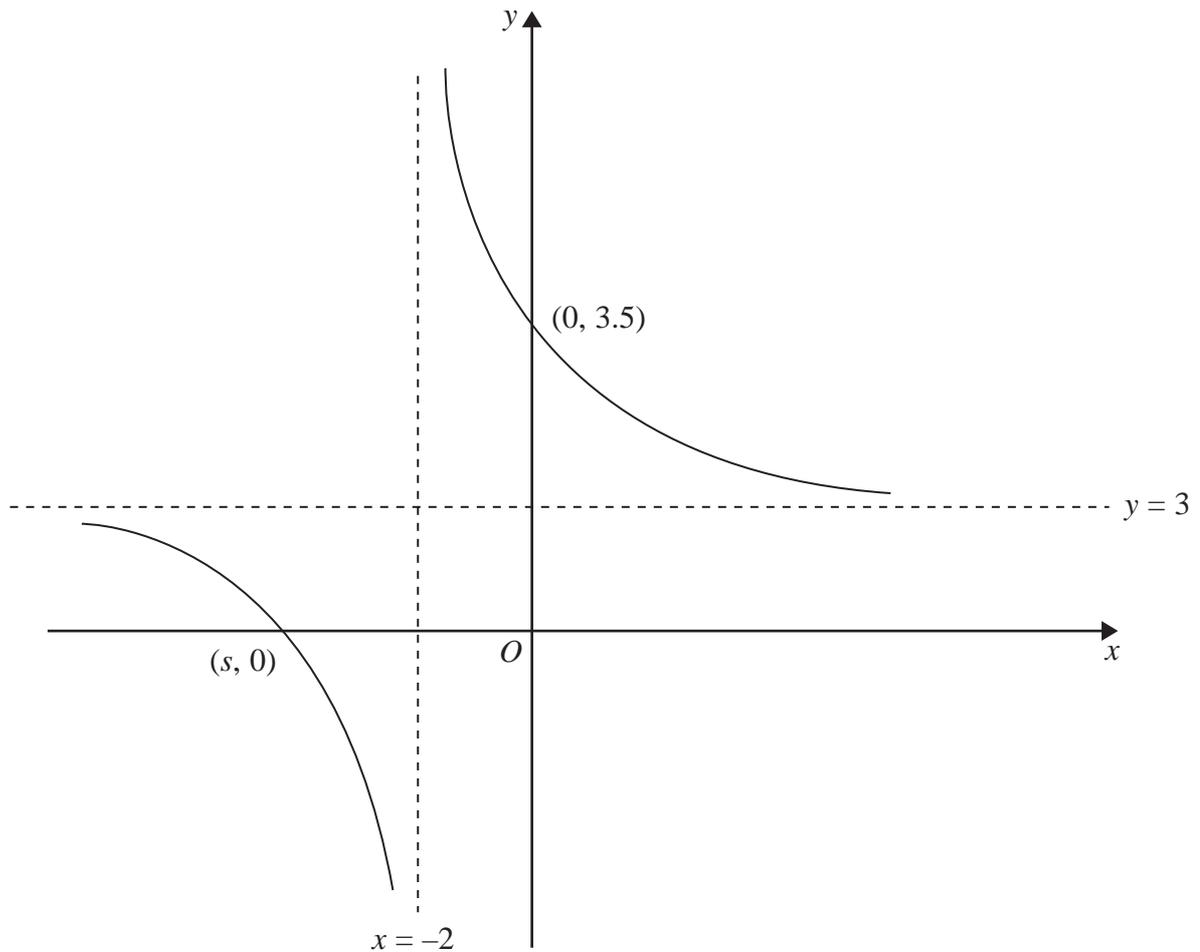


Figure 3

Figure 3 shows a sketch of the curve with equation

$$y = \frac{bx + c}{x + a} \quad x \neq -a,$$

where a , b and c are integers.

The equations of the asymptotes to the curve are $x = -2$ and $y = 3$

The curve crosses the y -axis at $(0, 3.5)$

(a) Write down the value of a and the value of b . (2)

(b) Find the value of c . (2)

Given that the curve crosses the x -axis at $(s, 0)$

(c) find the value of s . (2)

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Question 6 continued

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(Total for Question 6 is 6 marks)

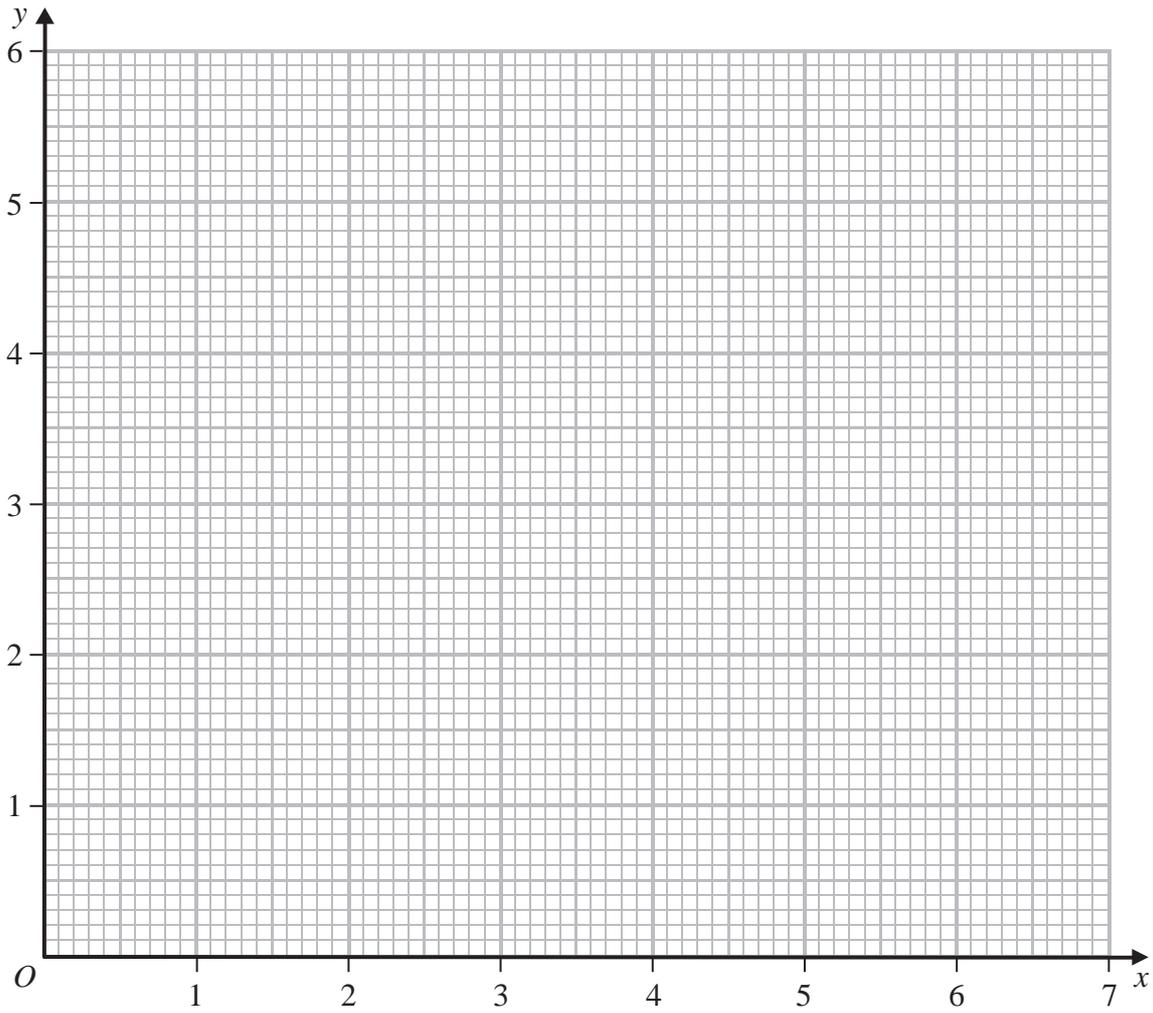


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Question 7 continued



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



Question 7 continued

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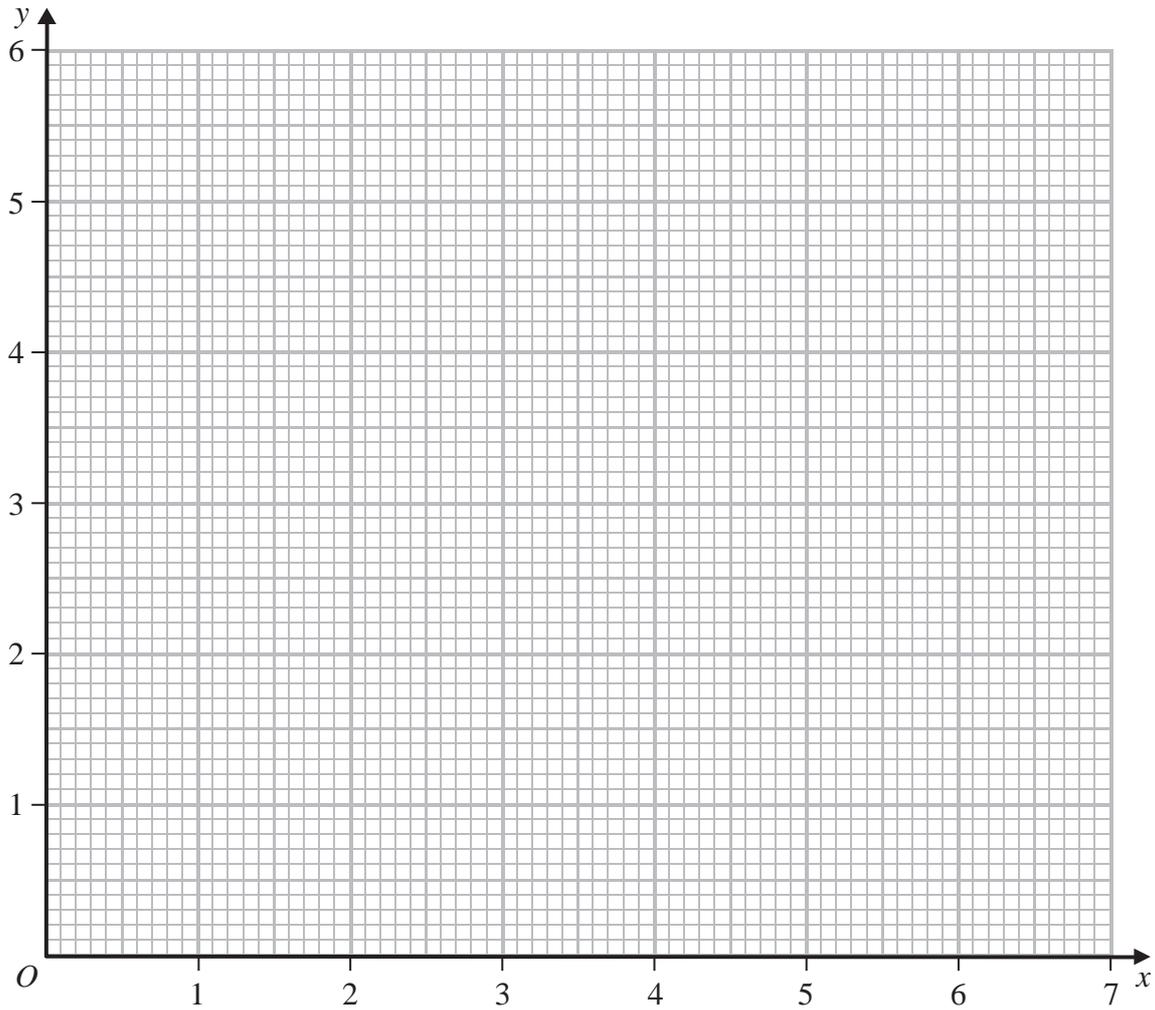
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Question 7 continued

Only use this grid if you need to redraw your graph



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(Total for Question 7 is 11 marks)



Question 8 continued

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Question 8 continued

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(Total for Question 8 is 11 marks)



Question 9 continued

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Question 9 continued

Area for writing answers, consisting of multiple horizontal dotted lines.

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Question 9 continued

Area with horizontal dotted lines for writing answers.

(Total for Question 9 is 10 marks)



Question 10 continued

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Question 10 continued

Area for writing answers, consisting of multiple horizontal dotted lines.

(Total for Question 10 is 9 marks)



Question 11 continued

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Question 11 continued

Area for writing answers, consisting of multiple horizontal dotted lines.

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Question 11 continued

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