

Centre No.						Paper Reference						Surname	Initial(s)	
Candidate No.						6	6	6	3	/	0	1	Signature	

Paper Reference(s)

6663/01

Edexcel GCE

Core Mathematics C1

Advanced Subsidiary

Monday 19 May 2014 – Morning

Time: 1 hour 30 minutes



Examiner's use only

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Team Leader's use only

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Question Number	Leave Blank
1	
2	
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10	
11	
Total	

<u>Materials required for examination</u> Mathematical Formulae (Pink)	<u>Items included with question papers</u> Nil
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Calculators may NOT be used in this examination.

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature. Check that you have the correct question paper.

Answer ALL the questions.

You must write your answer for each question in the space following the question.

Information for Candidates

A booklet 'Mathematical Formulae and Statistical Tables' is provided.

Full marks may be obtained for answers to ALL questions.

The marks for individual questions and the parts of questions are shown in round brackets: e.g. (2).

There are 11 questions in this question paper. The total mark for this paper is 75.

There are 28 pages in this question paper. Any blank pages are indicated.

Advice to Candidates

You must ensure that your answers to parts of questions are clearly labelled.

You should show sufficient working to make your methods clear to the Examiner.

Answers without working may not gain full credit.

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blank2. (a) Write down the value of $32^{\frac{1}{5}}$

(1)

(b) Simplify fully $(32x^5)^{-\frac{2}{5}}$

(3)

Q2

(Total 4 marks)



P 4 3 0 1 4 A 0 3 2 8

4.

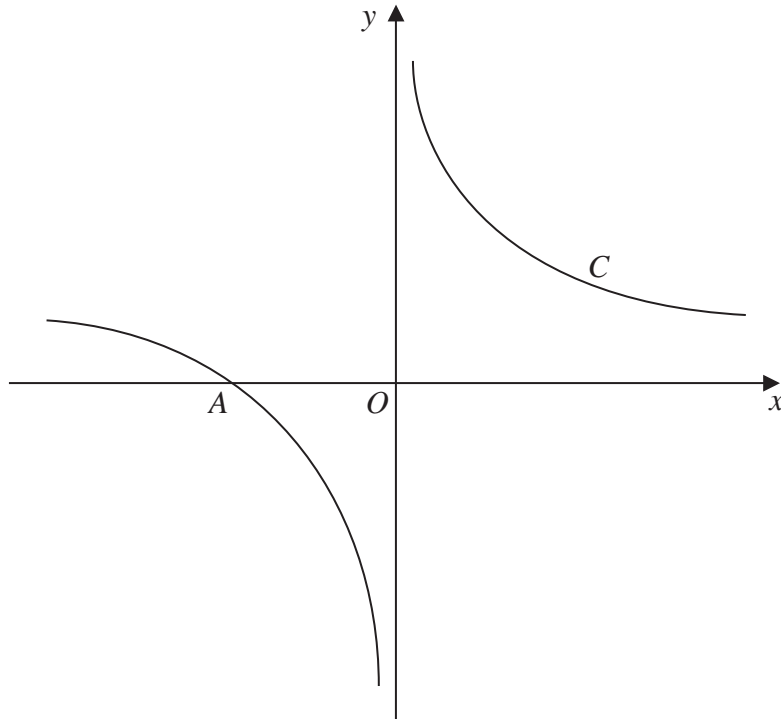


Figure 1

Figure 1 shows a sketch of the curve C with equation

$$y = \frac{1}{x} + 1, \quad x \neq 0$$

The curve C crosses the x -axis at the point A .

- (a) State the x coordinate of the point A . (1)

The curve D has equation $y = x^2(x - 2)$, for all real values of x .

- (b) A copy of Figure 1 is shown on page 7.
On this copy, sketch a graph of curve D .
Show on the sketch the coordinates of each point where the curve D crosses the coordinate axes. (3)
- (c) Using your sketch, state, giving a reason, the number of real solutions to the equation

$$x^2(x - 2) = \frac{1}{x} + 1 \quad (1)$$



Question 4 continued

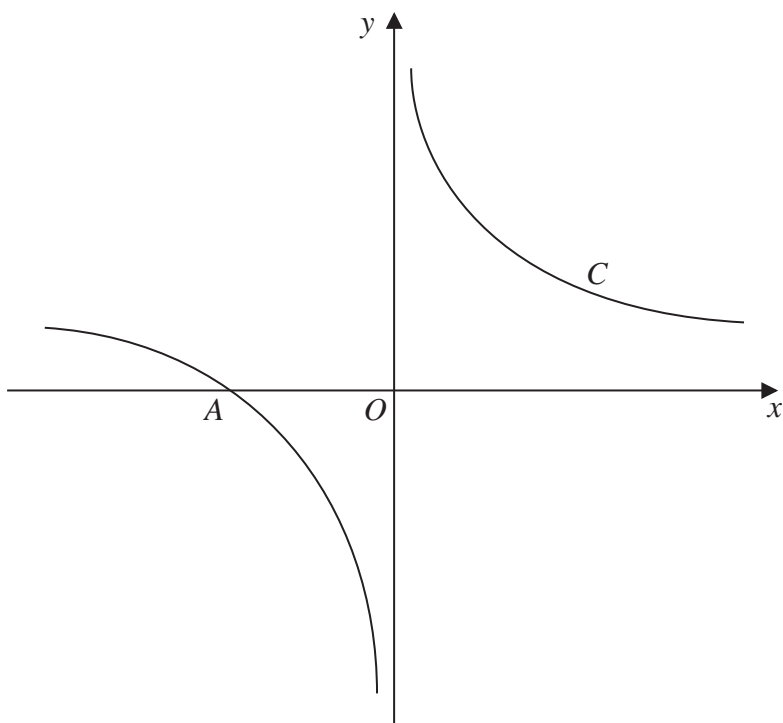


Figure 1

(Total 5 marks)

Q4



P 4 3 0 1 4 A 0 7 2 8

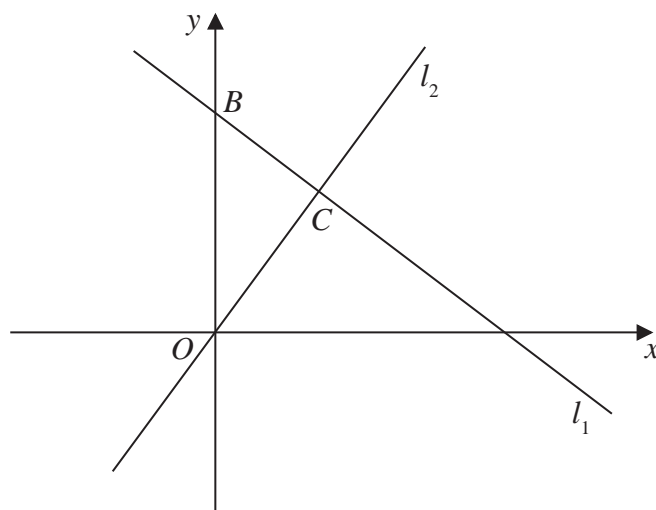
- 6 (a) Write $\sqrt{80}$ in the form $c\sqrt{5}$, where c is a positive constant. (1)

A rectangle R has a length of $(1 + \sqrt{5})$ cm and an area of $\sqrt{80}$ cm².

- (b) Calculate the width of R in cm. Express your answer in the form $p + q\sqrt{5}$, where p and q are integers to be found. (4)



9.

**Figure 2**

The line l_1 , shown in Figure 2 has equation $2x + 3y = 26$

The line l_2 passes through the origin O and is perpendicular to l_1

(a) Find an equation for the line l_2

(4)

The line l_2 intersects the line l_1 at the point C .

Line l_1 crosses the y -axis at the point B as shown in Figure 2.

(b) Find the area of triangle OBC .

Give your answer in the form $\frac{a}{b}$, where a and b are integers to be determined.

(6)



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Question 11 continued

Lined writing area for Question 11 continued.

Q11

(Total 10 marks)

TOTAL FOR PAPER: 75 MARKS

END

