

Write your name here

Surname

Other names

Pearson
Edexcel GCE

Centre Number

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Candidate Number

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Core Mathematics C1

Advanced Subsidiary



Wednesday 16 May 2018 – Morning
Time: 1 hour 30 minutes

Paper Reference

6663/01**You must have:**

Mathematical Formulae and Statistical Tables (Pink)

Total Marks

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Calculators may NOT be used in this examination.

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches/graphs it must be dark (HB or B). Coloured pencils and highlighter pens must not be used.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions and ensure that your answers to parts of questions are clearly labelled.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You should show sufficient working to make your methods clear. Answers without working may not gain full credit.

Information

- The total mark for this paper is 75.
- 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.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Pearson

5.

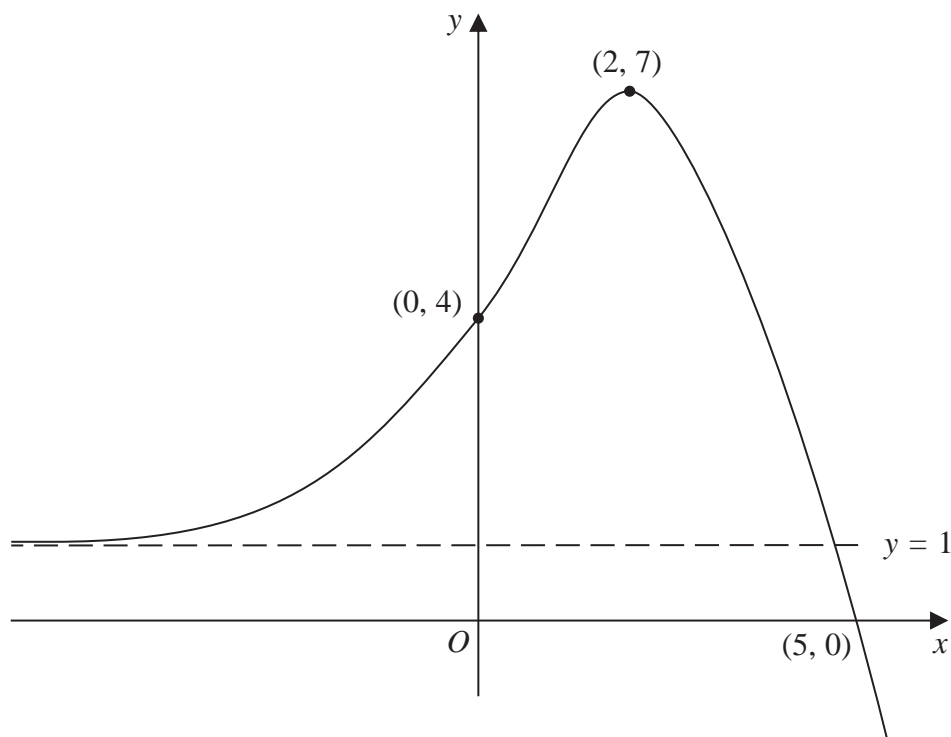


Figure 1

Figure 1 shows the sketch of a curve with equation $y = f(x)$, $x \in \mathbb{R}$.

The curve crosses the y -axis at $(0, 4)$ and crosses the x -axis at $(5, 0)$.

The curve has a single turning point, a maximum, at $(2, 7)$.

The line with equation $y = 1$ is the only asymptote to the curve.

- (a) State the coordinates of the turning point on the curve with equation $y = f(x - 2)$. (1)
- (b) State the solution of the equation $f(2x) = 0$. (1)
- (c) State the equation of the asymptote to the curve with equation $y = f(-x)$. (1)

Given that the line with equation $y = k$, where k is a constant, meets the curve $y = f(x)$ at only one point,

- (d) state the set of possible values for k . (2)



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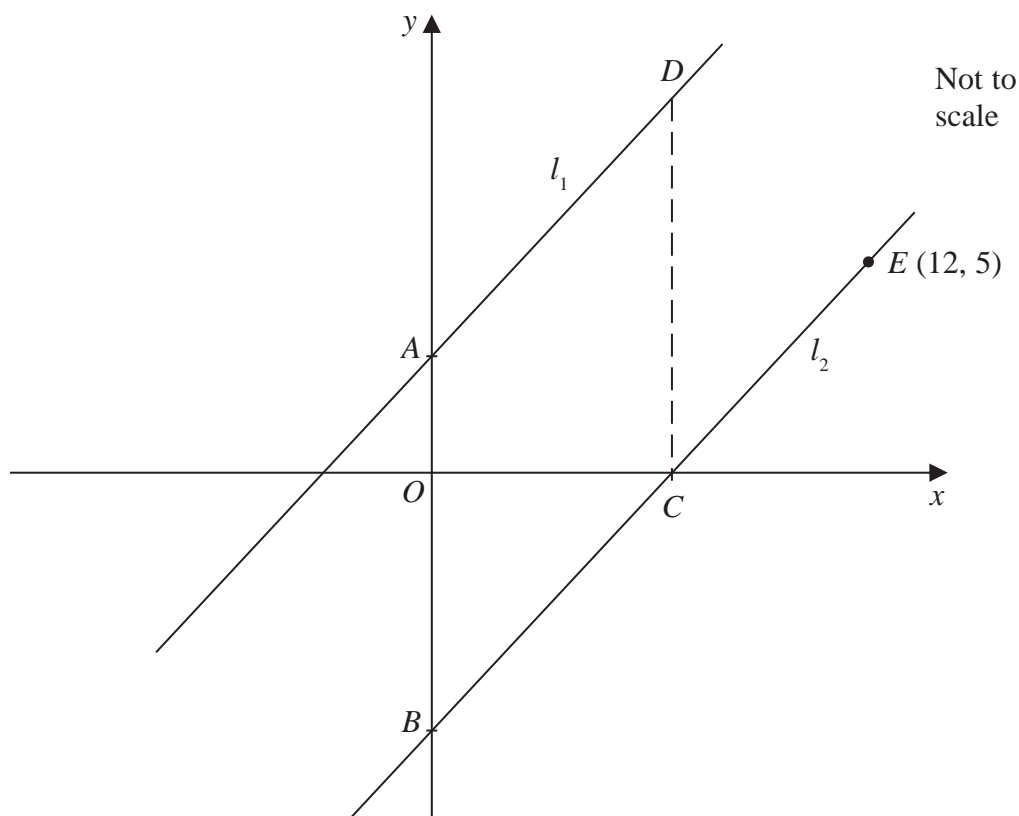


Figure 2

Figure 2 shows the straight line l_1 with equation $4y = 5x + 12$

- (a) State the gradient of l_1 (1)

The line l_2 is parallel to l_1 and passes through the point $E(12, 5)$, as shown in Figure 2.

- (b) Find the equation of l_2 . Write your answer in the form $y = mx + c$, where m and c are constants to be determined. (3)

The line l_2 cuts the x -axis at the point C and the y -axis at the point B .

- (c) Find the coordinates of (2)
- (i) the point B ,
 - (ii) the point C .

The line l_1 cuts the y -axis at the point A .

The point D lies on l_1 such that $ABCD$ is a parallelogram, as shown in Figure 2.

- (d) Find the area of $ABCD$. (2)



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Question 9 continued

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Q9

(Total 12 marks)



