

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
General Certificate of Secondary Education

MATHEMATICS C
(Graduated Assessment)



1966/2337A

MODULE M7 – SECTION A

Monday **23 JANUARY 2006** Morning 30 minutes

Candidates answer on the question paper.

Additional materials:

- Geometrical instruments
- Tracing paper (optional)

Candidate
Name

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Centre
Number

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Candidate
Number

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TIME 30 minutes

INSTRUCTIONS TO CANDIDATES

- Write your name, Centre number and candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers on the dotted lines unless the question says otherwise.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- There is a space after most questions. Use it to do your working. In many questions marks will be given for a correct method even if the answer is incorrect.
- Do not write in the bar code. Do not write in the grey area between the pages.
- **DO NOT WRITE IN THE AREA OUTSIDE THE BOX BORDERING EACH PAGE. ANY WRITING IN THIS AREA WILL NOT BE MARKED.**

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this Section is 25.

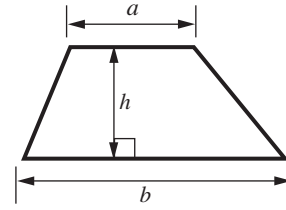
WARNING
 You are not allowed to use a
 calculator in Section A of this paper.

FOR EXAMINER'S USE	
Section A	
Section B	
TOTAL	

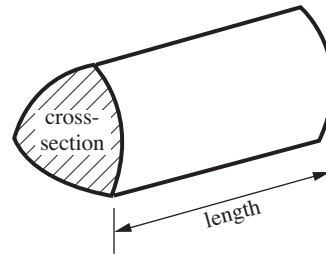
This question paper consists of 8 printed pages.

2
Formulae Sheet

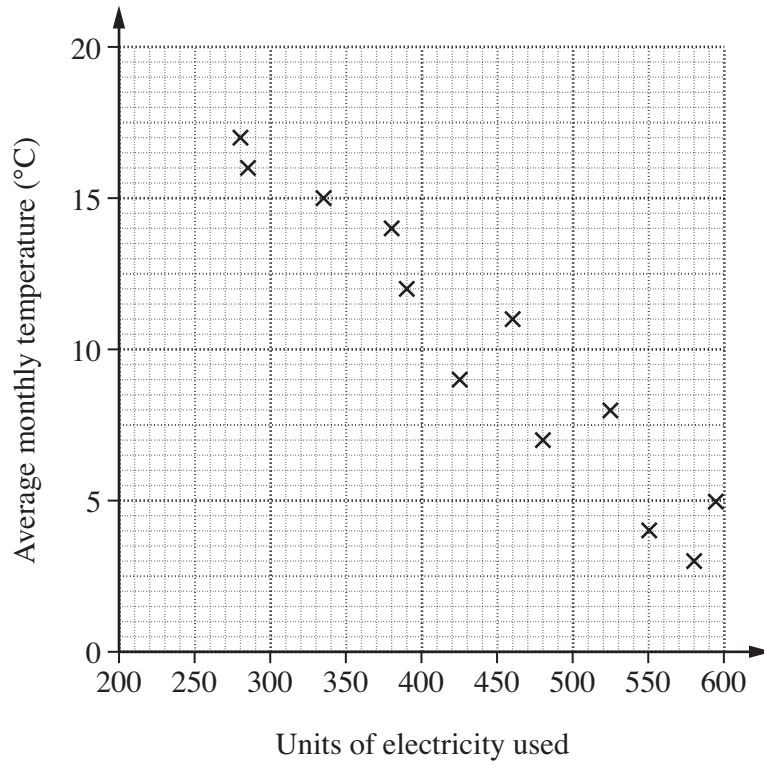
Area of trapezium = $\frac{1}{2} (a + b)h$



Volume of prism = (area of cross-section) \times length



- 1 This scatter diagram shows the number of units of electricity used by a household in a month and the average monthly temperature ($^{\circ}\text{C}$).



- (a) Describe the correlation shown.

.....[1]

- (b) (i) Draw a line of best fit on the scatter diagram. [1]

- (ii) In another month the average temperature was 6°C .

Use your line of best fit to estimate the number of units of electricity used.

(b)(ii) units [1]

3	
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2 (a) Work out.

(i) $\frac{3}{4} - \frac{2}{3}$

(a)(i)[2]

(ii) $\frac{3}{5} \div \frac{2}{3}$

(ii)[2]

(b) Write 48 as a product of prime factors.

(b)[2]

6	
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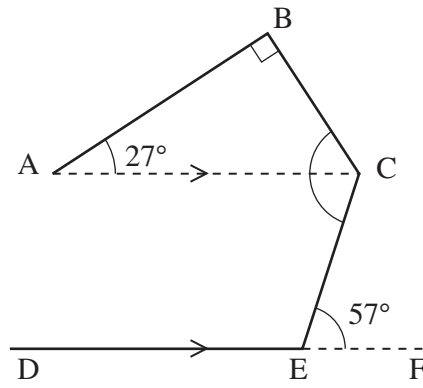
3 Rearrange this formula to make x the subject.

$$y = 12 + 10x$$

.....[2]

2	
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4 (a)



Not to scale

DEF is a straight line parallel to AC.
 Angle ABC = 90°, angle BAC = 27° and angle CEF = 57°.

Calculate angle BCE.
 Give reasons for your answer.

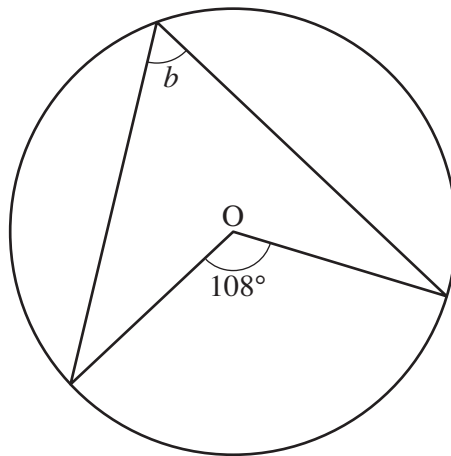
Angle BCE = ° because

.....

.....

.....[3]

(b)



Not to scale

O is the centre of the circle.

Calculate angle *b*.
 Give a reason for your answer.

b = ° because

.....

.....[2]

**5 Use ruler and compasses only to answer this question.
Leave in all your construction lines.**

- (a) ABC is an isosceles triangle.
AB = 7 cm, AC = BC = 9 cm.

Construct triangle ABC.

The side AB has already been drawn for you.



[1]

- (b) Construct the perpendicular bisector of AB.

[2]



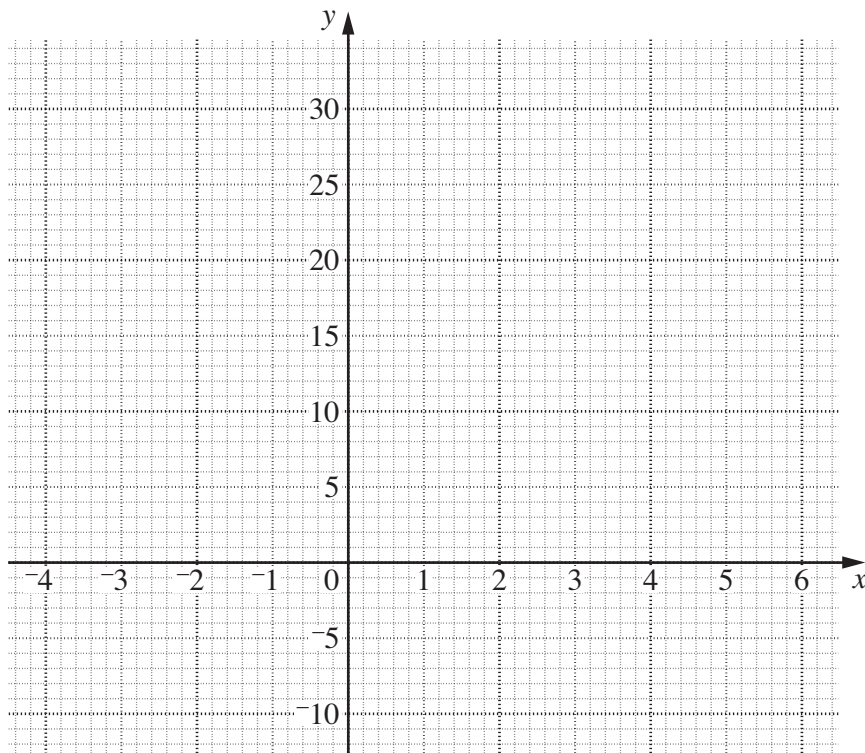
- 6 (a) Complete the table of values for $y = x^2 - 3x + 1$.

x	-4	-2	0	2	4	6
y	29		1	-1	5	19

[1]

- (b) (i) On the axes below, draw the graph of $y = x^2 - 3x + 1$ from $x = -4$ to $x = 6$.

[2]



- (ii) One solution of the equation $x^2 - 3x + 1 = 5$ is $x = 4$.

Use your graph to find the other solution.

(b)(ii)[1]

4

TURN OVER FOR QUESTION 7

7 Here are four equations of straight lines.

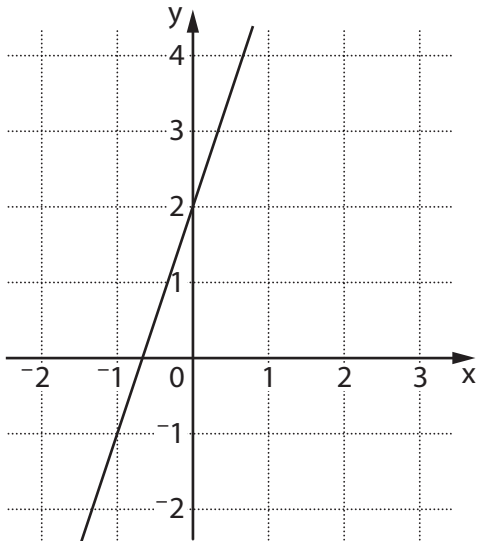
$$y = -2x + 3$$

$$y = -3x + 2$$

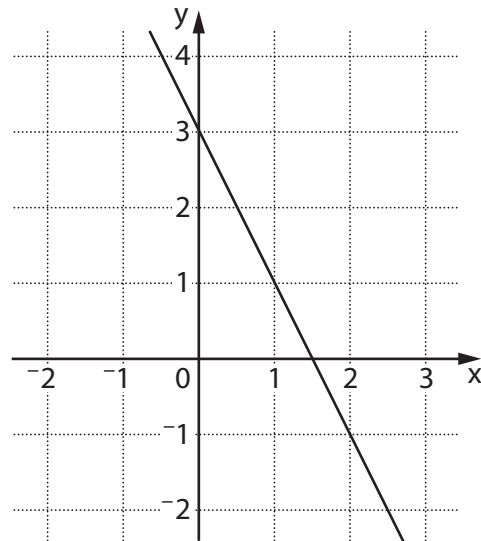
$$y = 2x - 3$$

$$y = 3x + 2$$

The graphs below show two of these lines.
Write the correct equation below each graph.



(a)



(b)

[2]

2
