



**M5**

**GENERAL CERTIFICATE OF SECONDARY EDUCATION  
MATHEMATICS C (GRADUATED ASSESSMENT)  
MODULE M5 – SECTION B**

**B275B**



Candidates answer on the question paper.

**OCR supplied materials:**  
None

**Other materials required:**

- Geometrical instruments
- Tracing paper (optional)
- Pie chart scale (optional)
- Electronic calculator

**Thursday 20 January 2011  
Morning**

**Duration: 30 minutes**



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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**INSTRUCTIONS TO CANDIDATES**

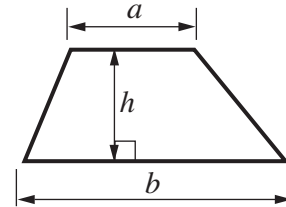
- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Show your working. Marks may be given for a correct method even if the answer is incorrect.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Answer **all** the questions.
- Do **not** write in the bar codes.

**INFORMATION FOR CANDIDATES**

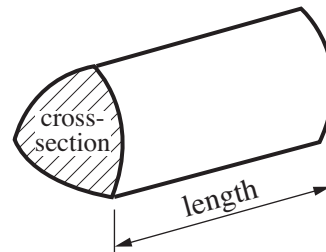
- The number of marks is given in brackets [ ] at the end of each question or part question.
- Section B starts with question 9.
- You are expected to use a calculator in Section B of this paper.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

## Formulae Sheet

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



$$\text{Volume of prism} = (\text{area of cross-section}) \times \text{length}$$



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- 9 (a) This formula is used to work out the cost for Geoff's mobile phone.

$$T = 35m - 18$$

$T$  is the total cost in pounds (£) and  $m$  is the number of months.

Calculate the total cost for 14 months.

(a) £ ..... [2]

- (b) This formula is used to work out the cost for Ruth's mobile phone.

$$C = 7d + 12.5t$$

$C$  is the total cost in pence,  $d$  is the total length of calls in minutes and  $t$  is the number of texts sent.

Calculate the total cost for 48 minutes of calls and 16 texts.

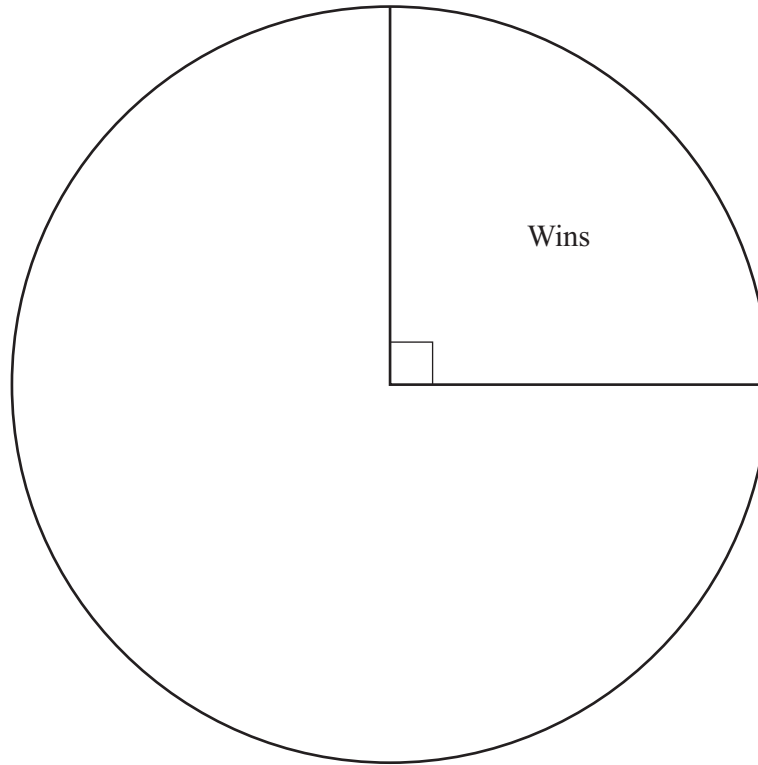
(b) ..... p [2]

- 10 In a test Brenda scored 17 out of 25.

Calculate this score as a percentage.

.....% [2]

- 11** Eddie records the results of his favourite team.  
There are 48 results altogether.  
The pie chart shows the sector for wins.



- (a)** Use the pie chart to work out how many wins there were.

**(a)** ..... [2]

- (b)** There were 16 losses in the 48 matches.

Draw and label the sector for 'losses'.

[2]

12 (a) The table shows some properties of quadrilaterals.

For each box in the table, tick (✓) if the quadrilateral **always** has that property, or cross (✗) if not.

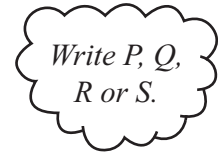
	All four sides equal	Both pairs of opposite angles equal	Diagonals bisect at $90^\circ$
square			
rhombus			
kite			

[3]

(b) A quadrilateral has the following properties.

- |   |
|---|
| <p><b>P</b> Opposite angles are equal.<br/> <b>Q</b> Diagonals meet at right angles.<br/> <b>R</b> Opposite sides are equal.<br/> <b>S</b> Diagonals bisect each other.</p> |
|---|

Which one of these properties means that the quadrilateral **cannot** be a rectangle?



(b) ..... [1]

13 (a) Triangle ABC is an equilateral triangle with side length 6 cm.

Draw triangle ABC accurately.  
The base, AB, has been drawn for you.



[2]

(b) Measure the perpendicular height, in centimetres, of C above the base AB.

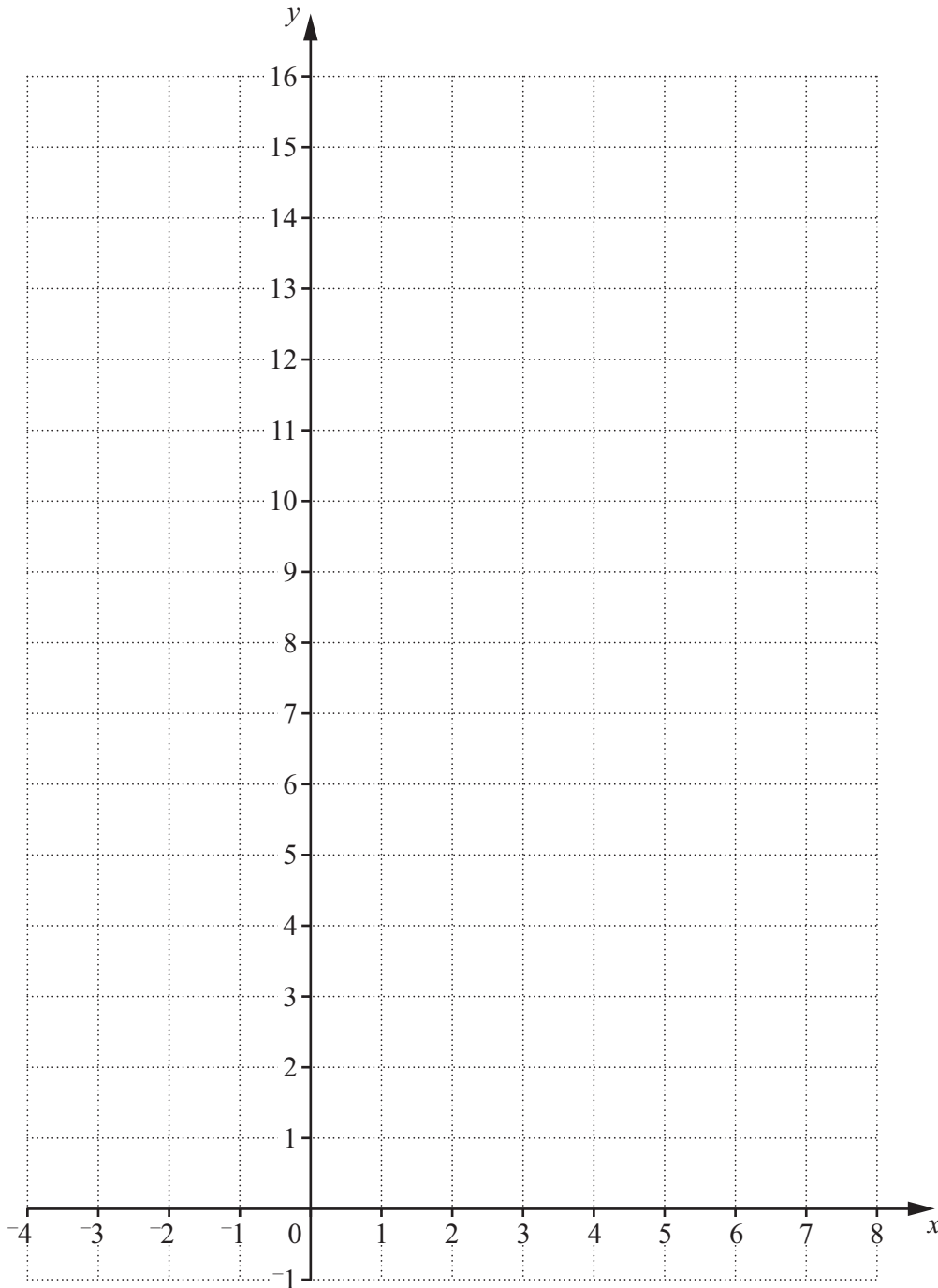
(b) ..... cm [1]

14 (a) Complete this table for  $y = x + 6$ .

$x$	-4	0	4	8
$y$		6		

[1]

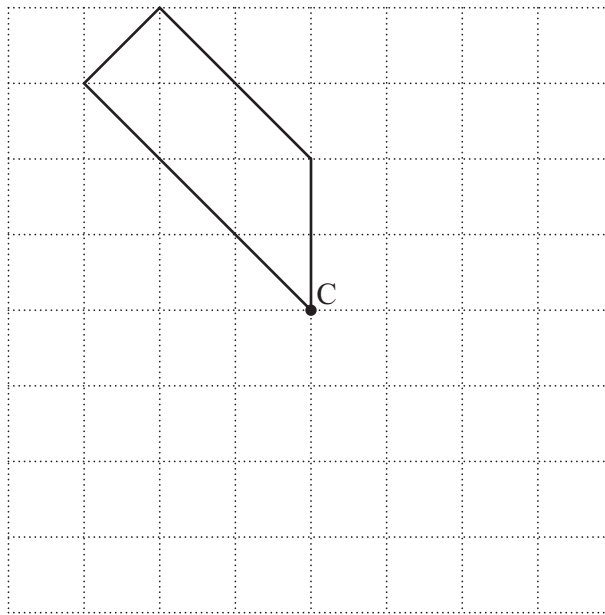
(b) Draw the graph of  $y = x + 6$ .



[2]

**TURN OVER FOR QUESTIONS 15 AND 16**

- 15 Complete the pattern so that it has rotation symmetry of order 2 about C.



[1]

- 16 A pair of shoes is priced at £65.  
In a sale this price is reduced by 30%.  
Harry buys the shoes in the sale with a £50 note.

How much change does he get?

£ ..... [4]