



**M4**

**GENERAL CERTIFICATE OF SECONDARY EDUCATION  
MATHEMATICS C (GRADUATED ASSESSMENT)  
MODULE M4 (SECTION B)**

**B274B**

Candidates answer on the question paper.

**OCR supplied materials:**  
None

**Other materials required:**

- Geometrical instruments
- Tracing paper (optional)
- Electronic calculator

**Tuesday 21 June 2011  
Afternoon**

**Duration: 30 minutes**



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

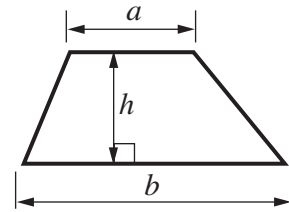
- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Show your working. 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**

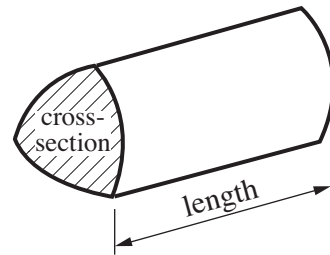
- The number of marks is given in brackets [ ] at the end of each question or part question.
- Section B starts with question 8.
- You are expected to use a calculator in Section B of this paper.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank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

## Formulae Sheet

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

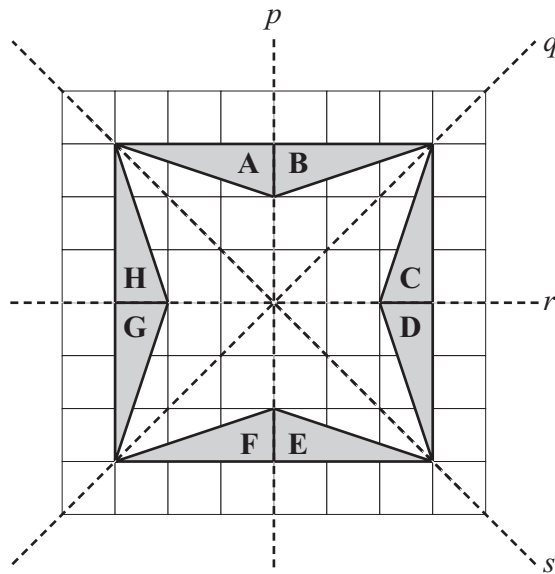


$$\text{Volume of prism} = (\text{area of cross-section}) \times \text{length}$$



**PLEASE DO NOT WRITE ON THIS PAGE**

8 (a) Here is a pattern with four lines of symmetry,  $p$ ,  $q$ ,  $r$  and  $s$ .



Complete each sentence with the correct letter.

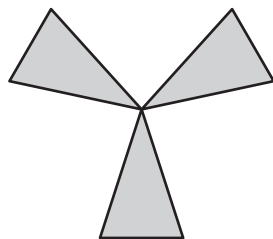
Triangle **F** is a reflection of triangle **A** in line .....

Triangle **B** is a reflection of triangle **C** in line .....

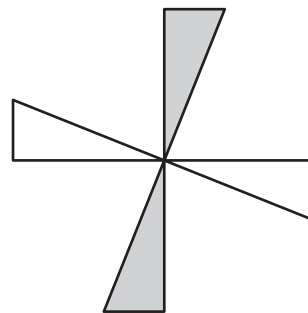
Triangle **D** is a reflection of triangle ..... in line  $p$ .

[3]

(b) Write down the order of rotation symmetry for each of these patterns.



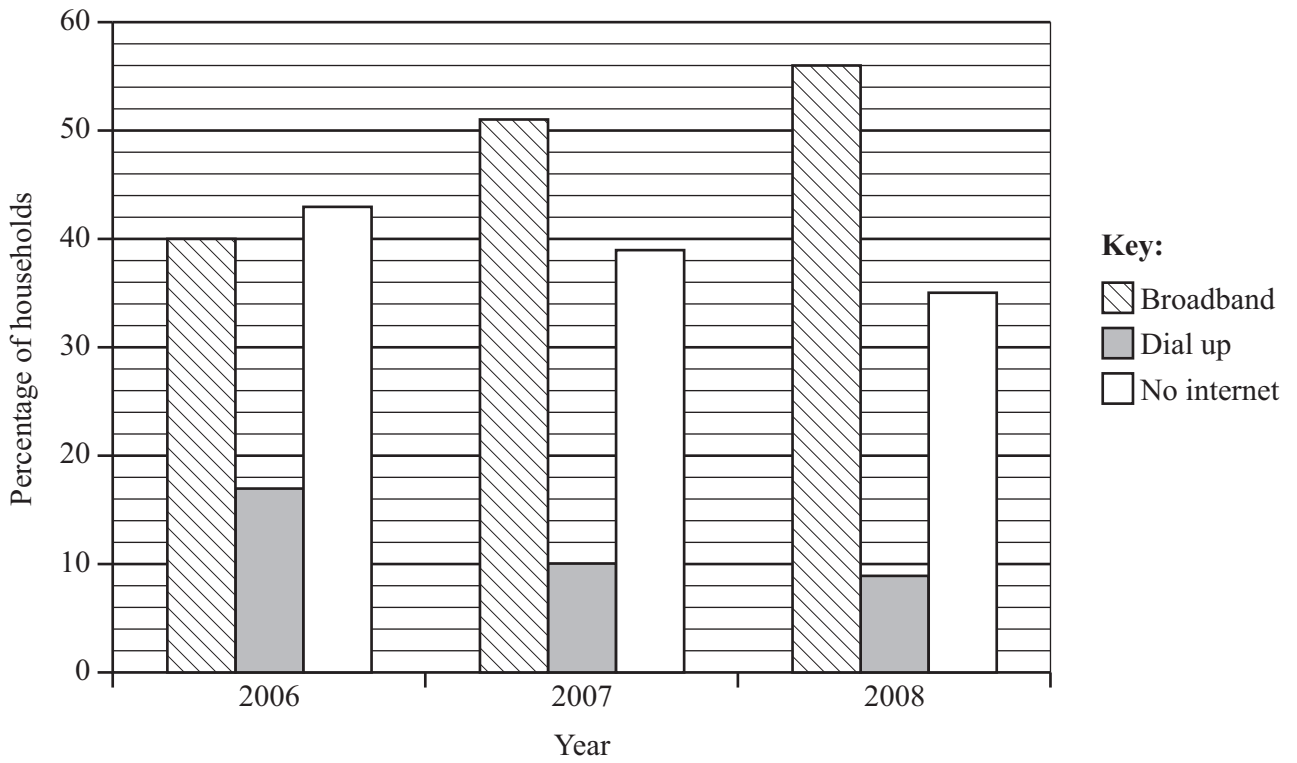
.....



.....

[2]

- 9 (a) This graph shows the percentages of households in the UK with internet access from 2006 to 2008.



- (i) Use the graph to complete these sentences.

In 2006 .....% of households had dial up internet.

From 2007 to 2008 the percentage of households with broadband went up by .....% .

[2]

- (ii) Use the graph to describe one change in internet access in the UK from 2006 to 2008.

.....  
 ..... [1]

(b) Daunish asked his friends to record the amount of time they spent using the internet one Monday.

Here are the times, in minutes.

32    48    17    25    85    5    25    31    27    35

(i) Find the mean time.

(b)(i) ..... minutes [3]

(ii) Daunish also asked his friends to record how long they spent using the internet on a Saturday.

How do you think the mean time for Saturday might be different from Monday?  
Explain your answer.

.....  
..... [1]

10 Eva is making cookies to sell for charity.

(a) Here are the ingredients for 20 Peanut Cookies.

<b>Peanut Cookies</b> – Makes 20			
50g	butter	150g	wholemeal flour
50g	unsalted peanuts	1	egg
50g	brown sugar	1 teaspoon	baking powder
75g	peanut butter		

Eva makes 100 Peanut Cookies.

Complete this list to show the ingredients for 100 Peanut Cookies.

<b>Peanut Cookies</b> – Makes 100			
..... g	butter	..... g	wholemeal flour
..... g	unsalted peanuts	.....	eggs
..... g	brown sugar	.....	teaspoons baking powder
..... g	peanut butter		

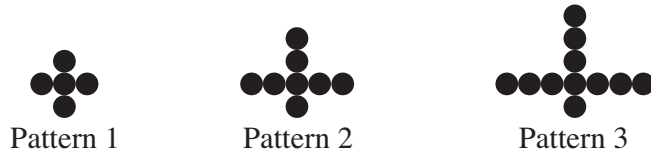
[3]

(b) The ingredients for 100 cookies cost Eva £6.80.  
 She also spent £2.35 on packaging.  
 She sold the cookies for 75p for a bag of 4 cookies.  
 Eva sold all the bags of cookies.

Work out how much profit Eva made.

(b) £ ..... [4]

11 These patterns are made from counters.



(a) This table shows the number of counters used in each pattern.

Complete the table.

Pattern	1	2	3	4	5
Number of counters	5	8	11		

[1]

(b) How many counters are used in Pattern 25?  
Explain how you worked out your answer.

..... because .....

..... [2]

**TURN OVER FOR QUESTION 12**

