

**GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C**

B274/A

MODULE M4 – SECTION A

SPECIMEN

Candidates answer on the question paper.

Time: 30 minutes

Additional Materials:

- Geometrical instruments
- Tracing paper (optional)



Candidate
Name

Centre
Number

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Candidate
Number

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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 outside the box bordering each page.
- WRITE YOUR ANSWER TO EACH QUESTION IN THE SPACE PROVIDED. ANSWERS WRITTEN ELSEWHERE 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 this paper.

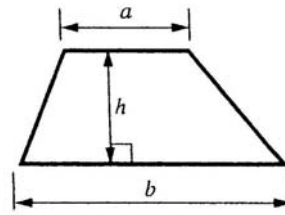
For Examiner's Use

Section A

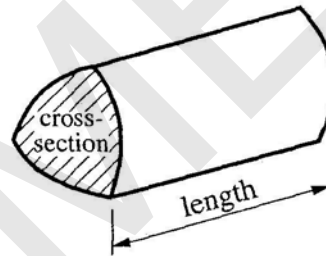
This document consists of **9** printed pages and **3** blank pages.

2
FORMULAE SHEET

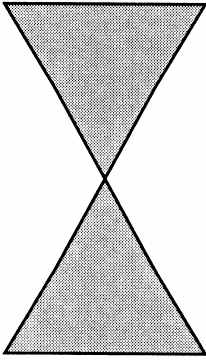
Area of trapezium = $\frac{1}{2}(a+b)h$



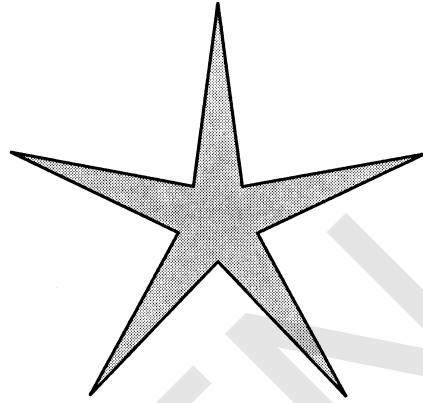
Volume of prism = (area of cross-section) x length



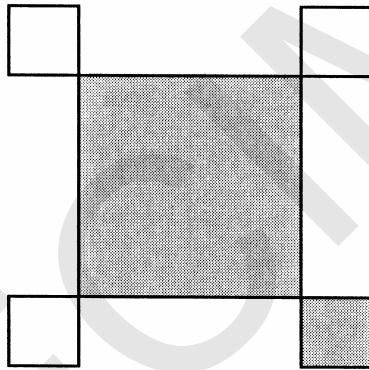
- 1 Under each diagram write its order of rotation symmetry.
If it has no rotation symmetry write 'none'



.....



.....



.....

[3]

3

[Turn over

- 2 (a) Find two common factors of 18 and 30.

(a) _____
 _____ [2]

- (b) Write down a number which is a multiple of 7 **and** a factor of 42.

(b) _____ [1]

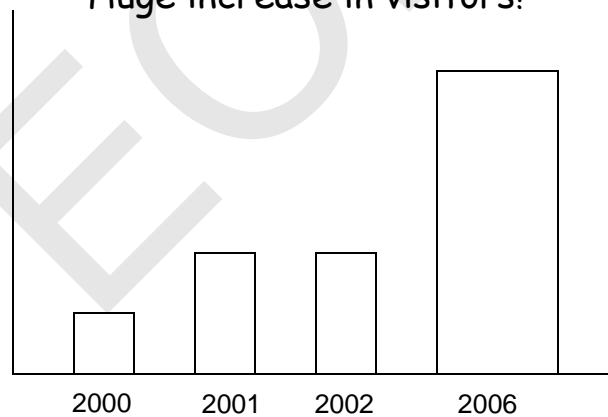
- (c) Find the two prime numbers that are factors of 24.

(c) _____ [2]

5

- 3 Southbay Tourist Office produces this graph to show the popularity of the town.

Huge increase in visitors!



Give two reasons why the graph is misleading.

1

_____ [1]

2

_____ [1]

2

4 Insects are eaten in many parts of the world.

- (a) Crickets are 13% protein by weight.
Write 13% as a fraction.



(a) _____ [1]

- (b) (i) One fifth of the weight of a grasshopper is protein.
Write one fifth as a percentage.

(b)(i) _____ % [1]

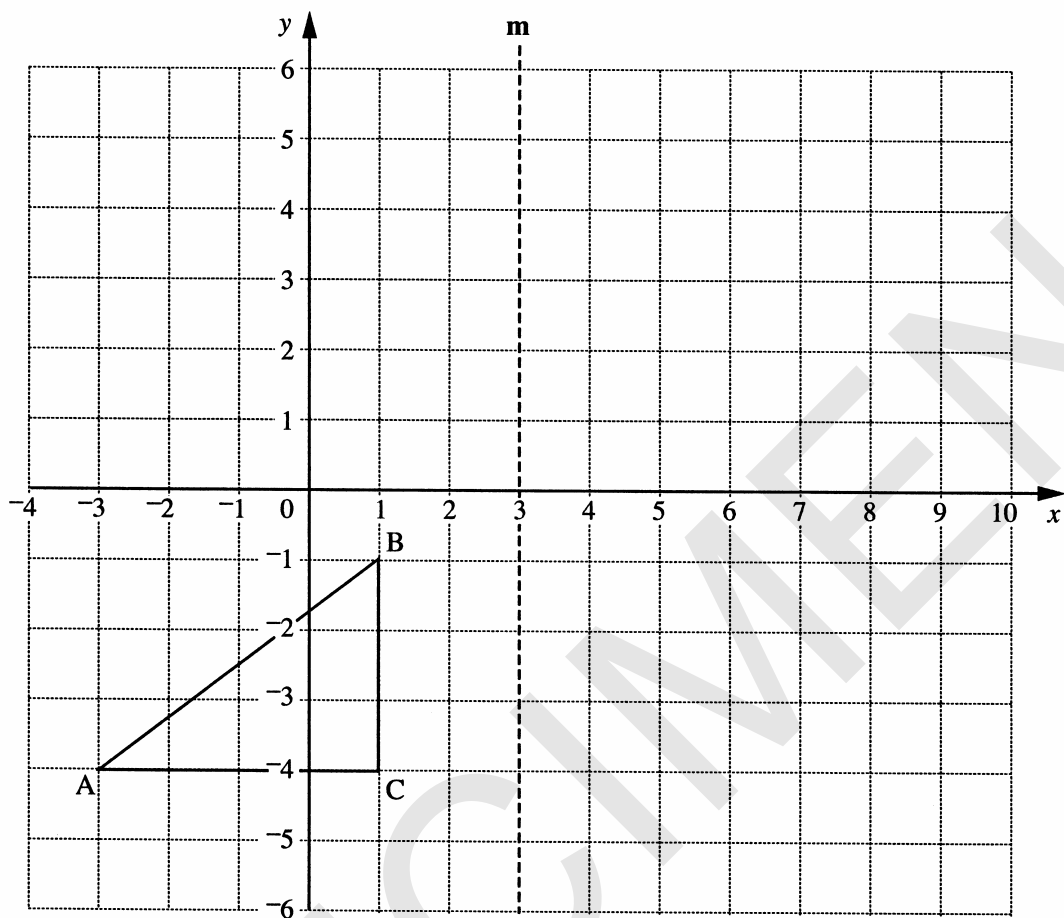
- (ii) A serving of grasshopper weights 30 g.
Work out one fifth of 30.

(ii) _____ [1]

3	
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[Turn over

5



(a) Write down the coordinates of **A**.

(a) (_____ , _____) [1]

(b) Draw the reflection of triangle **ABC** in the mirror line **m**.

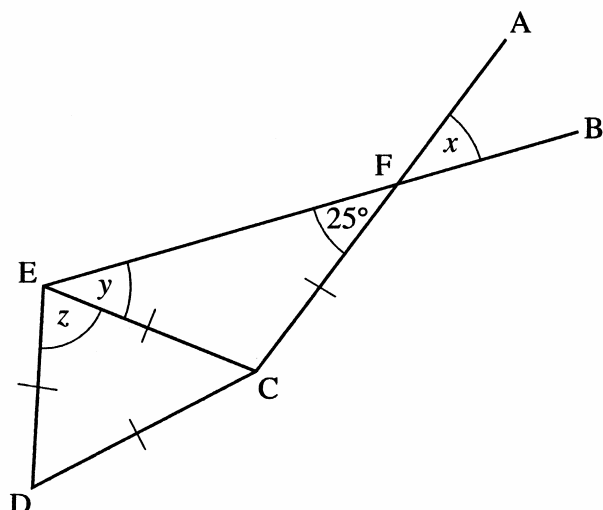
[2]

(c) Write down the new coordinates of **A** after reflection in the mirror line **m**.

(c) (_____ , _____) [1]

4

6



Not to scale

In the diagram, EFB and CFA are straight lines.

$DE = DC = EC = CF$.

Complete each of these statements.

$x = 25^\circ$ because

..... [1]

$y = 25^\circ$ because

..... [1]

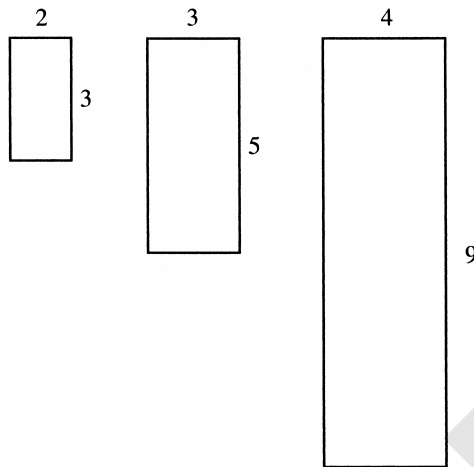
$z = \quad^\circ$ because

..... [2]

4

[Turn over

- 7 James has a sequence of rectangles.
Here are the first three.



- (a) The widths of the first three rectangles are 2, 3 and 4.
What will be the width of the 100th rectangle?

(a) _____ [1]

- (b) He uses this rule for working out the heights of the rectangles.

**Multiply the previous
height by 2 and
subtract 1**

- (i) The first three rectangles have heights 3, 5 and 9.
Work out the height of the **fifth** rectangle.

(b)(i) _____ [2]

- (ii) Without working it out, explain why the height of the 8th triangle cannot be 386.

.....
.....

[1]

4	

Section A Total [25]

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Oxford Cambridge and RSA Examinations
General Certificate of Secondary Education

MATHEMATICS C

B274/A

MODULE M4 – SECTION A

Specimen Mark Scheme

The maximum mark for this paper is 25.

SPECIMEN

1		2 None 5	2 1 3		1 for each DO NOT count 'blank' as 'none' Condone '1' instead of 'none'
2	(a)	1, 2, 3 or 6	2		1 for each - maximum of 2 Then -1 for each wrong answer W0 for choice including incorrect answer
	(b)	7 or 14 or 21 or 42	1		
	(c)	2 and 3	2 5		
3		Two of: No vertical scale 2006 bar wider Years 2003 – 2005 missing	2 2		W1 for each reason, maximum W2 Accept clear equivalents
4	(a)	$\frac{13}{100}$	1		
	(b)(i)	20 (%)	1		
	(ii)	6	1 3		
5	(a)	(- 3, - 4)	1		Ignore labelling (condone errors) W1 for just 2 correct vertices or reflection in line parallel to line m Allow follow through on <i>their</i> labelling (so must be labelled).
	(b)	Correct reflection	2		
	(c)	(9, - 4)	1 4		
6		Opposite (angle) (EFC is an) Isosceles (triangle) 60° (DEC is an) Equilateral (triangle)	1 1 1 1 4		<i>Look for Key Words</i> Dependent on the '60°'
7	(a)	101	1		M1 for 17 seen – or as answer
	(b)(i)	33	2		
	(ii)	All heights are odd	1 4		

Section A Total 25

Assessment Objectives Grid

Question	AO2	AO3	AO4	Total
1		3		3
2	5			5
3			2	2
4	3			3
5		4		4
6		4		4
7	4			4
Totals	12	11	2	25

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