

GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS B

Foundation Tier

MODULAR PAPER – SECTION A

F B291/A

Specimen

Candidates answer on the question paper.

Time: 45 minutes

Additional Materials:

- Geometrical instruments
- Tracing paper



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, in blue or black ink, in the spaces provided on the question paper. 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.
- Do **not** write in the bar code.
- Do **not** write outside the box bordering each page.
- Show all your working. Marks may be given for working which shows that you know how to solve the problem, even if you get the answer wrong.
- **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 in this section is 36.

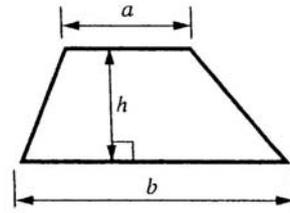
	<p>WARNING You are not allowed to use a calculator in Section A of this paper.</p>
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For Examiner's Use	
Section A	
Section B	
Total	

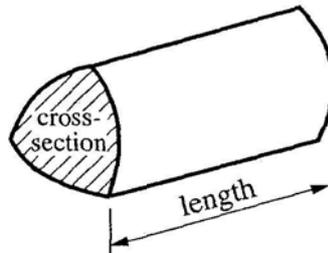
This document consists of **13** printed pages.

FORMULAE SHEET

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



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



1 (a) Write

(i) 0.3 as a fraction,

(a) (i).....[1]

(ii) 40% as a decimal,

(ii).....[1]

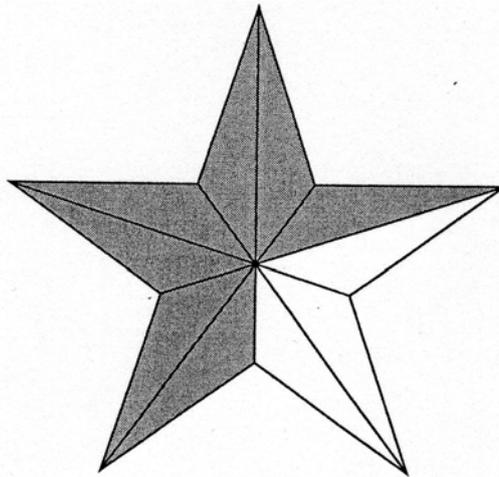
(iii) $\frac{1}{4}$ as a decimal.

(iii).....[1]

(b) Write $\frac{10}{12}$ in its simplest form.

(b).....[1]

2 (a) What percentage of this symmetrical shape is shaded?



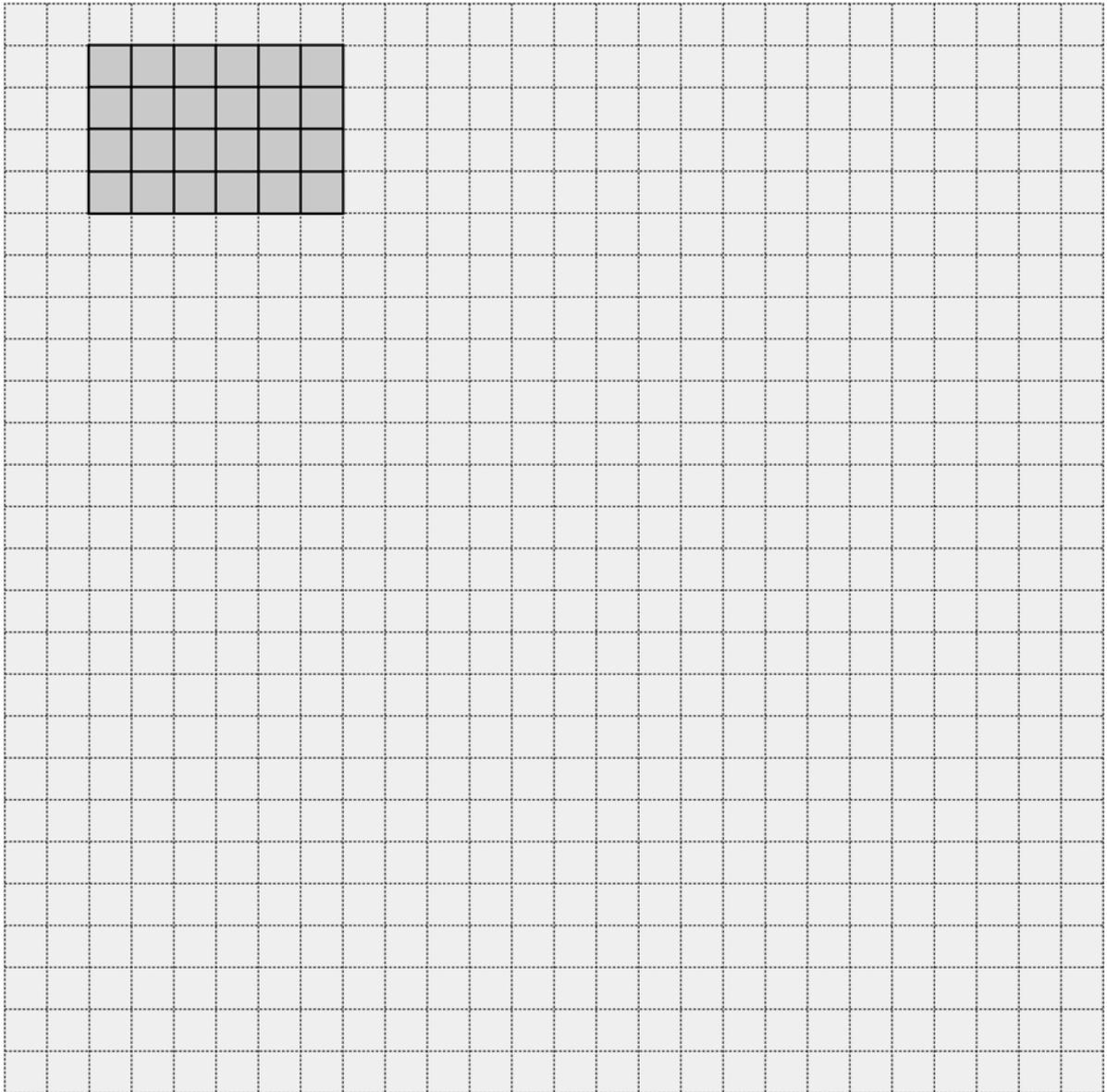
(a).....[1]

(b) Shade $\frac{3}{8}$ of the grid below.

[1]

[Turn Over

- 3 Amy has 24 square tiles.
She uses all the tiles to make a rectangle as shown.



Draw two other different rectangles that Amy could make using 24 tiles each time. [2]

- 4 Nikesh calculates his pay per day using the following formula.

$$\text{Total pay} = \text{rate per hour} \times \text{number of hours} + \text{bonus}$$

He earns £5.00 per hour.

He receives a bonus of £2.50 if he works more than 8 hours.

Find his total pay when he works

- (a) 7 hours,

(a) £.....[1]

- (b) 9 hours.

(b) £.....[2]

- 5 (a) Fill in these boxes.

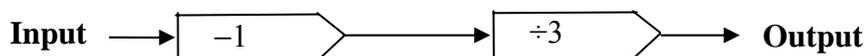
(i) + 15 = 19

(a) (i).....[1]

(ii) - 15 = 19

(ii).....[1]

- (b) Here is a number machine.



Work out

- (i) the **output** when the **input** is 16,

(b) (i).....[1]

- (ii) the **input** when the **output** is 9.

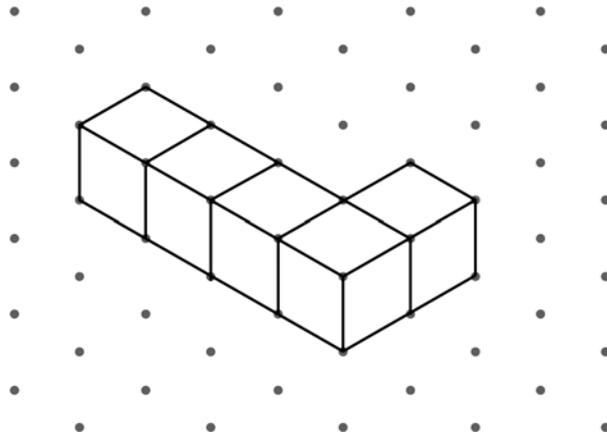
(ii).....[2]

[Turn Over

- 6 These solids are made from one-centimetre cubes.
There are no hidden cubes.

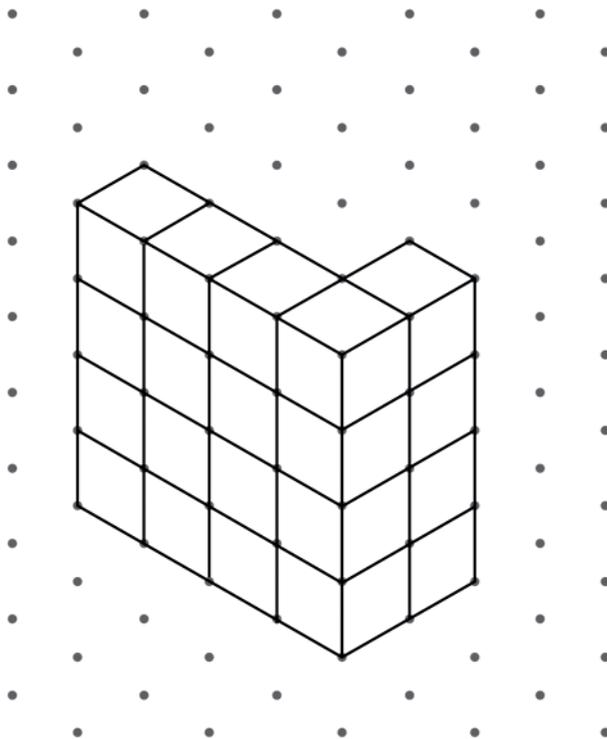
Write down the volume of each solid.

(a)



(a)cm³ [1]

(b)



(b)cm³ [1]

- 7 How many stamps costing 30p can be bought with £5?
How much change will there be?

Number of stamps

Change.....[4]

8

Always odd

Always even

Sometimes odd and
sometimes even

In this question, n stands for an odd number.

Which of the above describes the following expressions?
Give a reason for each answer.

(a) $2n$

.....

Reason.....

..... [1]

(b) $3n + 1$

.....

Reason.....

..... [2]

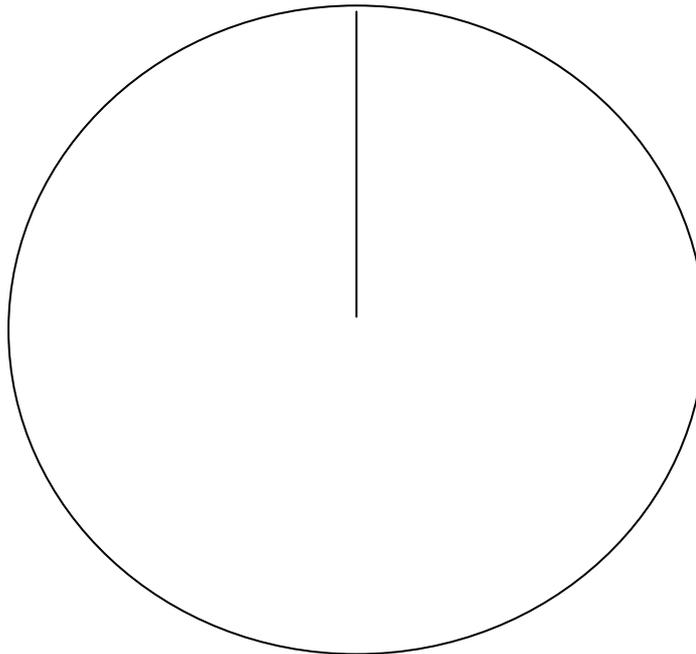
[Turn Over

9

A group of 90 motorists were surveyed about the type of fuel their cars used. The results are shown in the table.

Fuel type	Unleaded	Diesel	Gas	LRP
Number of motorists	50	20	12	8

- (a) Draw a pie chart to represent these data.



- (b) The 90 motorists were chosen by asking the first 90 drivers entering a multi-storey car park at a shopping centre one weekday morning. [4]

Explain why these 90 motorists may not be a representative sample of all motorists.

.....

.....

..... [2]

10

GREAT HOLIDAY SALE

All prices for adults reduced
by 20%

Child sale prices are $\frac{1}{3}$ of
adult sale prices

The normal cost of a holiday was £300 for one adult.

Calculate the sale price of this holiday for

(a) one adult,

(a) £..... [3]

(b) one child.

(b) £..... [2]



OXFORD CAMBRIDGE AND RSA EXAMINATIONS

General Certificate of Secondary Education

MATHEMATICS B

B291/A

MODULAR PAPER 1 – SECTION A

Specimen Mark Scheme

The maximum mark for this paper is 36.

Section A					
1	(a)(i)	$\frac{3}{10}$	B1	4	
	(ii)	0.4	B1		
	(iii)	0.25	B1		
	(iv)	$\frac{5}{6}$	B1		
2	(a)	70%	B1	2	
	(b)	Correct shading (6 boxes)	B1		
3		One different Second different	B1 B1	2	Must be something other than 4×6 i.e. could be 1×24, 2×12, 3×8
4	(a)	£35.00	B1	3	
	(b)	Add £2.50 £47.50	B1 B1		
5	(a)(i)	4	B1		
	(ii)	34	B1		
	(b)(i)	5	B1	5	
	(ii)	×3 = 27 +1 = 28	B1		
6	(a)	5	B1	2	
	(b)	20	B1		
7		16×30 = 480 So 16 stamps £5 £4.80 = 20p	M1 A1 M1 A1	4	Attempt to divide 30p into £5 Units correct
8	(a)	Appropriate explanation Because whatever n , when you multiply by 2 you get an even number	B1	3	Eg 'Always even'
	(b)	Always even Because, since n is odd, $3n$ will be odd so adding 1 makes it even	B1 B1		

9	(a)	Attempt to divide 360 by 90 to get 4 Multiply each value by 4 Angles: 200°, 80°, 48°, 32° Correct pie chart	M1 M1 A1 A1	4	Follow through their angles only if they add up to 360°
	(b)	The motorists are all likely to be shoppers who do not work and so this is not representative as there are many types	B1 B1		
10	(a)	300×0.8 $= \text{£}240$	M1 A1 A1	5	Attempt to find 20% or 80% Either $80 = 100 - 20$ or find 20% and subtract from $\text{£}300$
	(b)	$\frac{1}{3}$ of either ans to (i) or $\text{£}300$ $= \frac{1}{3} \times 240 = 80$	M1 A1		

Section A Total 36

Assessment Objectives Grid

Question	AO2	AO3	AO4	Total
1	4	0	0	4
2	2	0	0	2
3	2	0	0	2
4	3	0	0	3
5	5	0	0	5
6	0	2	0	2
7	4	0	0	4
8	3	0	0	3
9	0	0	6	6
10	5	0	0	5
Totals	28	2	6	36