

**GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C**

B271/B

MODULE M1 – SECTION B

SPECIMEN

Candidates answer on the question paper.

Time: 30 minutes

Additional Materials:

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



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.
- 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.
- 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

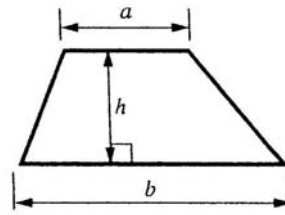
- You are expected to use a calculator in Section B of this paper.
- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this section is 25.
- Section B starts with Question 9.

For Examiner's Use	
Section B	

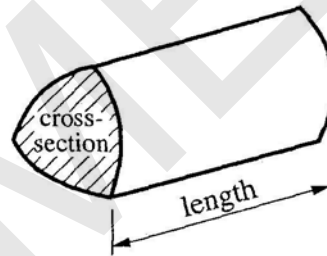
This document consists of **10** printed pages and **2** blank pages.

2
FORMULAE SHEET

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



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



- 9 Amin is using this square to make a number pattern

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

He makes his pattern by starting at

1

, counting forward 4 squares then moving down 1 square.
This is the pattern.

1 15 29 43

- (a) What is the next number in the pattern?

(a) _____ [1]

- (b) Write down a calculation you can do to work out the next number.

..... [1]

2

[Turn over

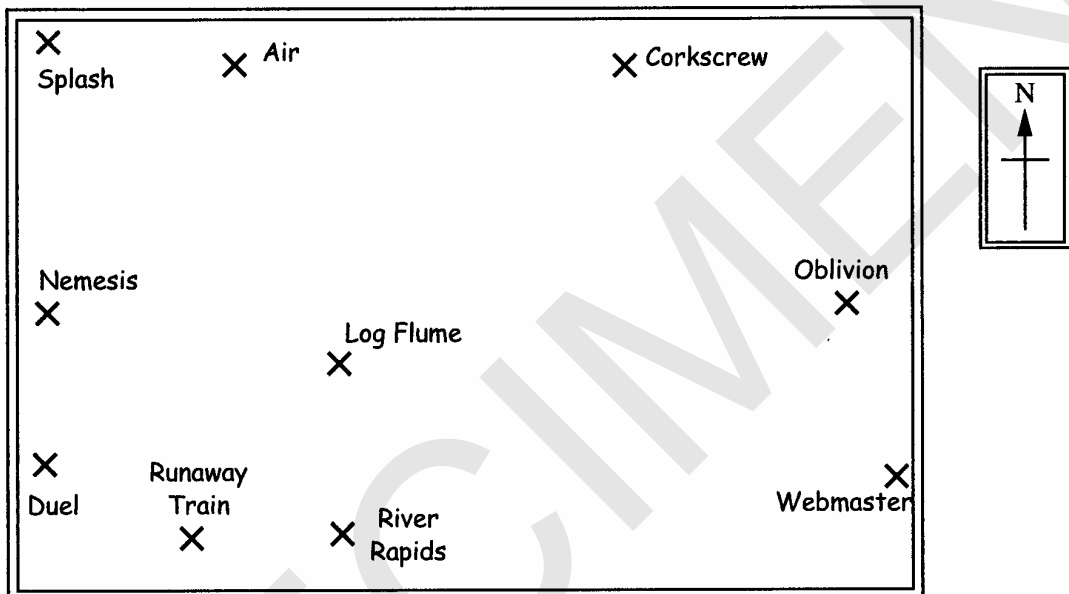
10 A school runs a trip to Alton Towers.

(a) Tickets cost £16.50 each.

Work out the cost of 140 tickets.

(a) _____ [2]

(b) This is a sketch map showing where the rides are.



(i) Gemma walks South from **Nemesis**.

Which ride does she get to next?

(b)(i) _____ [1]

(ii) Gemma walks North-West from the **Log Flume**.

Which ride does she get to next?

(ii) _____ [1]

(iii) Gemma walks from **Nemesis** to the **River Rapids**.

Which compass direction is this?

(iii) _____ [1]

- 10 (c) Zara wants to go on her favourite rides first.
Her favourites are **Oblivion**, **Air** and **Nemesis**.



Show that there are six different possible ways she could go on the 3 rides.
The list has been started for you.

<u>First ride</u>	<u>Second ride</u>	<u>Third ride</u>
Oblivion	Air	Nemesis

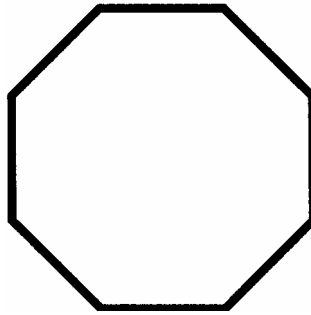
*You may not
need all
the lines*

[2]

7	
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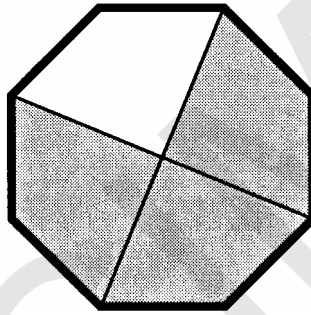
[Turn over

11 (a) What is the name of this shape?



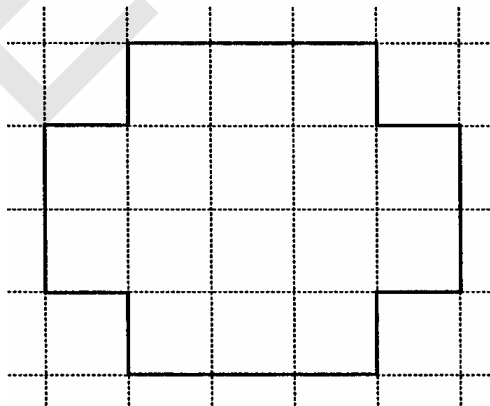
(a) _____ [1]

(b) What fraction of this shape has been shaded?



(b) _____ [1]

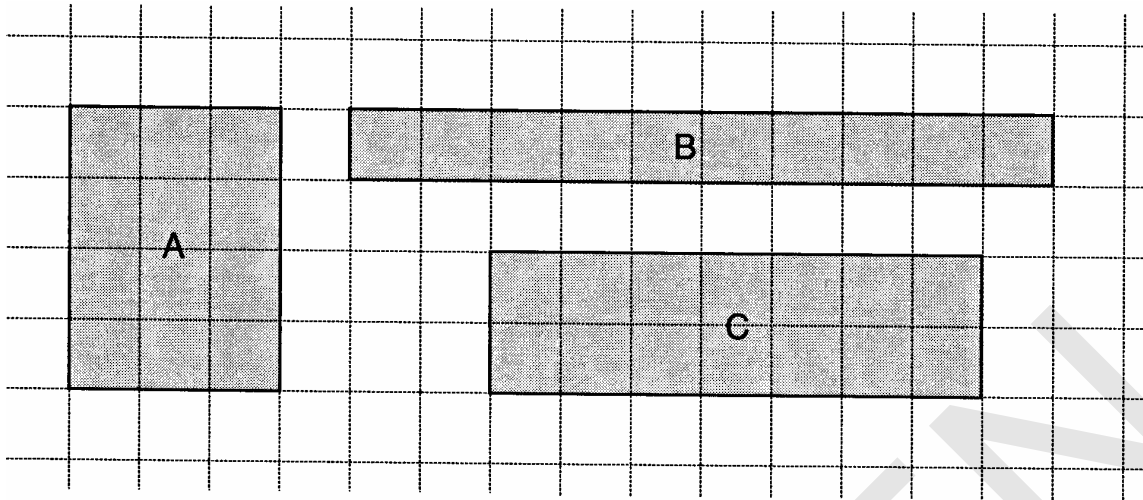
(c) Shade half this shape.



[1]

3	
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12



Which of these shapes has the longest perimeter?
Show how you decide.

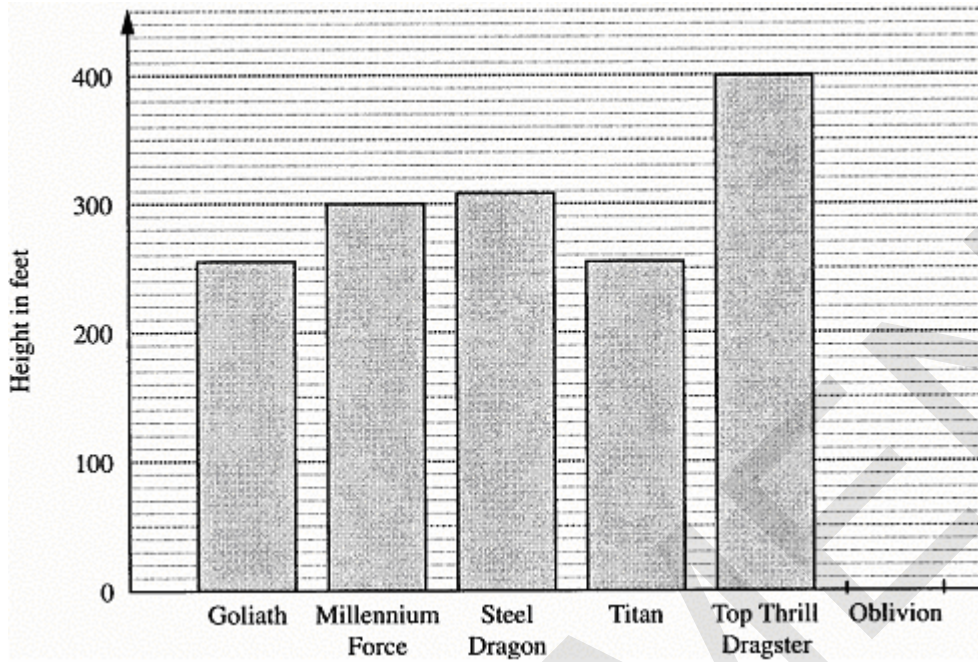
Shape _____ has the longest perimeter.

[3]

3

[Turn over]

- 13 This bar chart shows the heights of the drops of the five tallest rollercoasters in the world.



- (a) Two of the rollercoaster drops are the same height.

What are these rollercoasters called?

_____ and _____ [1]

- (b) Complete these sentences.

The rollercoaster with the biggest drop is called

_____ [1]

Its drop is _____ feet.

[1]

- (c) The rollercoaster Oblivion at Alton Towers has a drop of 180 feet.

Show this on the bar chart.

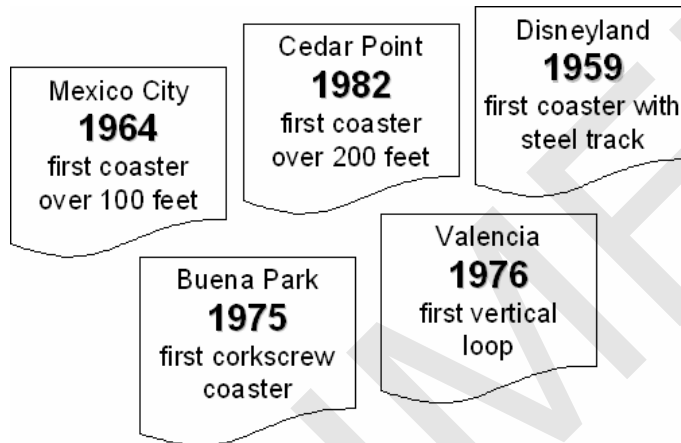
[1]

- 13 (d) The longest rollercoaster in Britain is **The Ultimate** at Lightwater Valley.
It is 7452 feet long.
Write 7542 in words.

.....
.....

[1]

- (e) These are some important dates about rollercoasters.

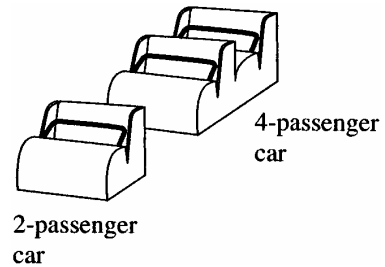


Write the dates in order, earliest first.

.....
earliest

[2]

- (f) **Top Thrill Dragster** has six trains.
Each train has three 4-passenger cars
and two 2-passenger cars
How many people altogether can each
train hold?



(f)

[3]

10

Section B Total [25]

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The maximum mark for this paper is 25.

SPECIMEN

9	(a) (b)	57 + 14	W1 W1 2	accept equivalents, direction & quantity
10	(a) (b)(i) (ii) (iii) (c)	2310 duel splash SE O N A A N O A O N N O A N A O	W2 W1 W1 W1 W2 7	M1 W2 W1 16.5 (0) x 140 or figs 231 accept south east; south; east not ES correct 6 only 3 complete rows condone repeats
11	(a) (b) (c)	octagon $\frac{3}{4}$ 8 squares shaded	W1 W1 W1 3	
12		B with supporting working	W3 3	M2 M1 two correct perimeters seen Any one correct perimeter A: $3 + 4 + 3 + 4 = 14$ B: $10 + 1 + 10 + 1 = 22$ C: $7 + 2 + 7 + 2 = 18$
13	(a) (b) (c) (d)	Goliath, Titan Top Thrill Dragster 400 bar (or line) to 180 seven thousand four hundred (and) fifty two	W1 W1 W1 W1	both $\pm 1\text{mm}$ ignore spelling

Section B Total 25

Assessment Objectives Grid

Question	AO2	AO3	AO4	Total
9	2			2
10	2	3	2	7
11	2	1		3
12		3		3
13	6		4	10
Totals	12	7	6	25

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