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**GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT)**

B281A

Terminal Paper (Section A) (Foundation Tier)

Candidates answer on the question paper.

OCR supplied materials:
None

Other materials required:

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

**Monday 6 June 2011
Afternoon**

Duration: 1 hour



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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MODIFIED LANGUAGE

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

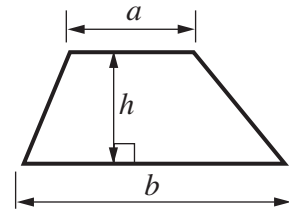
- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this Section is **50**.
- This document consists of **16** pages. Any blank pages are indicated.

WARNING

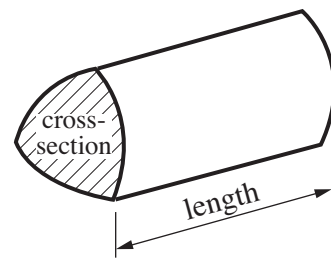
No calculator can be used for Section A of this paper

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

- 1 (a) The new Wembley stadium covers an area of 103 000 m².

Write 103 000 in words.

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

- (b) A winning team now has to climb 107 steps to collect a cup.
In the old stadium they climbed 39 steps.

How many more steps does the team climb now than in the old stadium?

(b) [1]

- (c) The stadium contains 2618 toilets.

Write 2618 correct to the nearest ten.

(c) [1]

- (d) There are 90 000 seats spread over three tiers.

Lower tier	34 303
Middle tier	16 532
Upper tier	39 165

Which tier has the most seats?

(d) tier [1]

(e) Mary and Peter take their child, Sam, for a tour of Wembley stadium.

(i) An adult ticket costs £15 and a child ticket costs £8 for the tour.

How much do they pay altogether for the tour?

(e)(i) £ [2]

(ii) Their tour lasts 90 minutes.
They start their tour at 10:15 am.

At what time do they finish their tour?

(ii) [2]

2 (a) Write 30% as a decimal.

(a) [1]

(b) Write $\frac{3}{5}$ as a percentage.

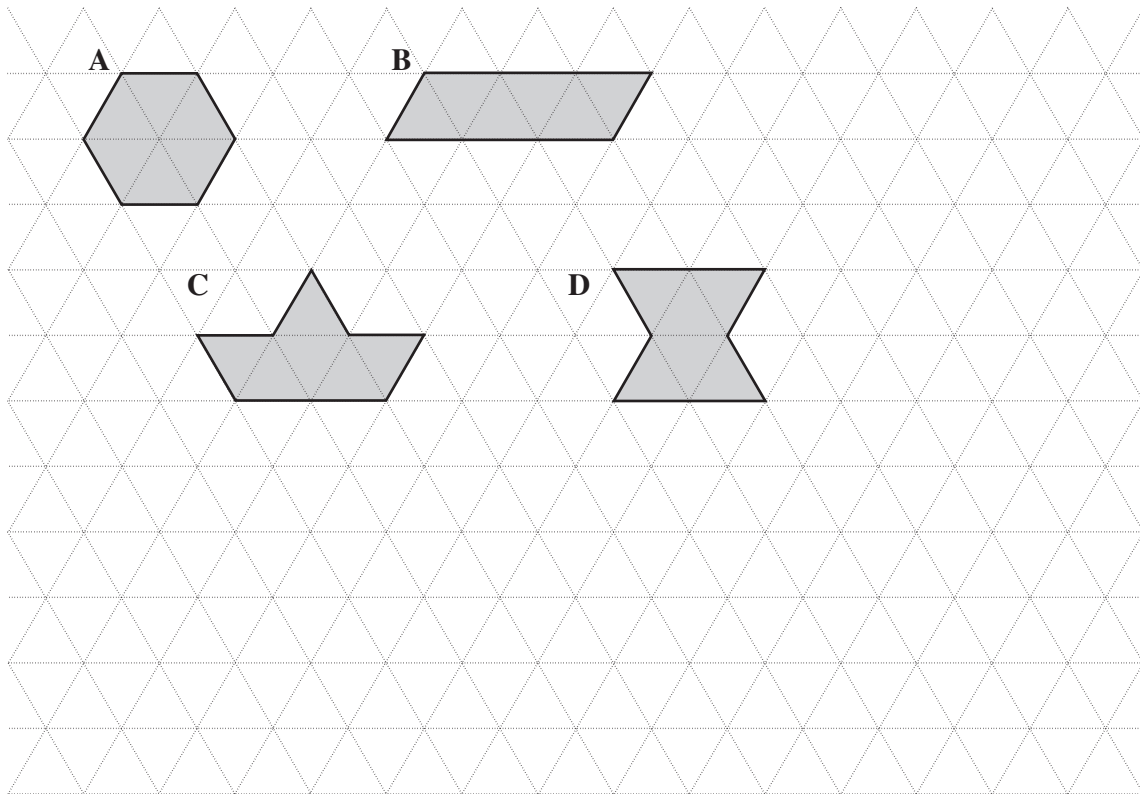
(b)% [1]

(c) Jan earns £42 in her Saturday job.
She saves 20% of this.

Work out how much she saves.

(c) £ [2]

3 These shapes are each made from 6 triangles.



(a) What is the special mathematical name for

(i) shape A,

(a)(i) [1]

(ii) shape B?

(ii) [1]

(b) Shape C has one line of symmetry.

On the grid draw a different shape made from 6 triangles, which has just one line of symmetry.

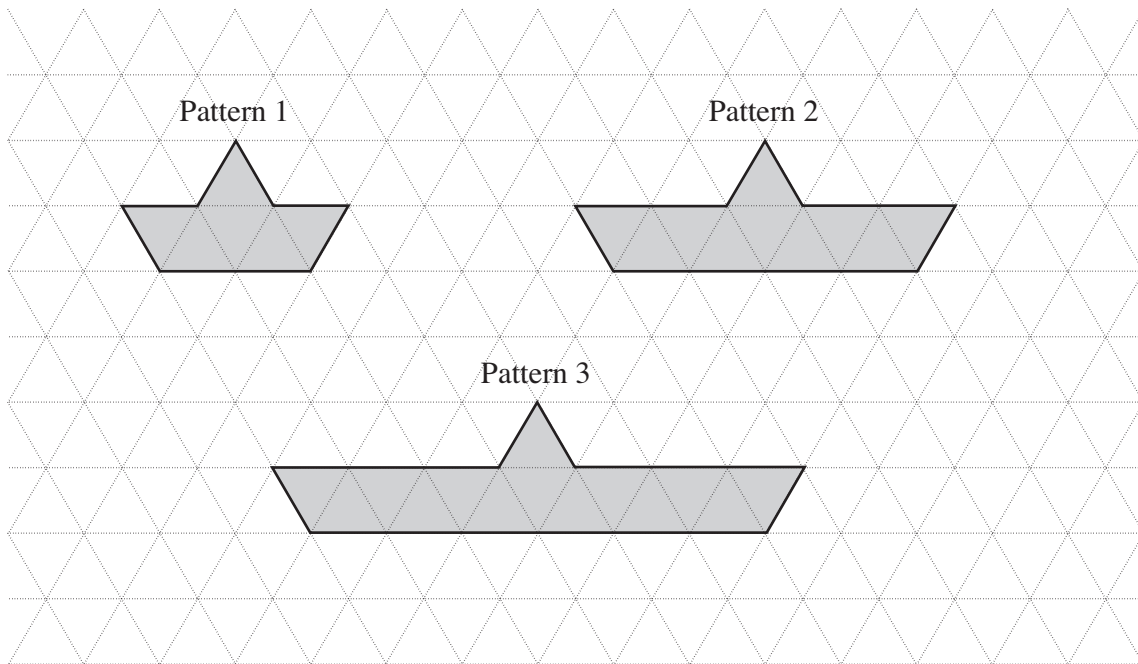
(Reflections or rotations of shape C will not count as different.)

[1]

(c) State the order of rotation symmetry of shape D.

(c) [1]

(d) Here are the first three patterns in a sequence made from triangles.



This table shows how many triangles there are in each pattern.

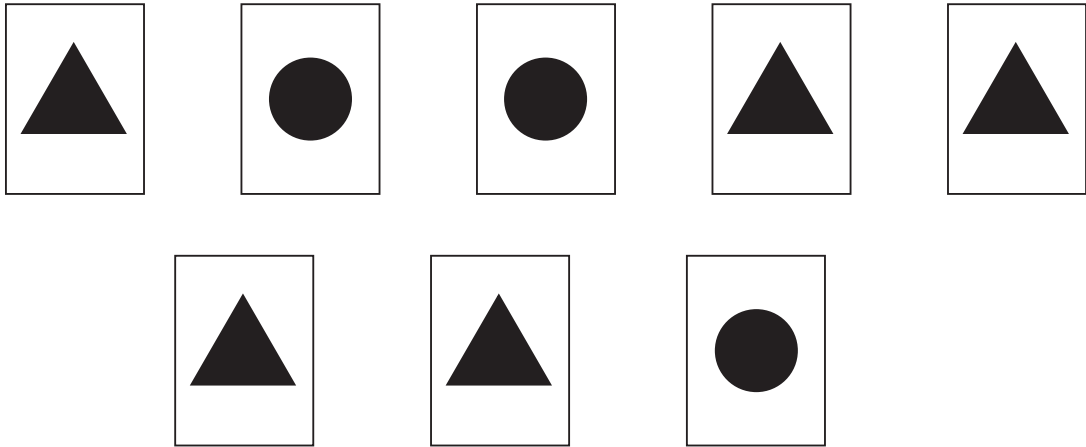
Pattern number	1	2	3
Number of triangles in the pattern	6	10	

- (i) Complete the table for Pattern 3. [1]
- (ii) How many triangles are there in Pattern 6?
Explain how you decided.

..... triangles because

..... [2]

4 (a) Trish has these 8 cards.



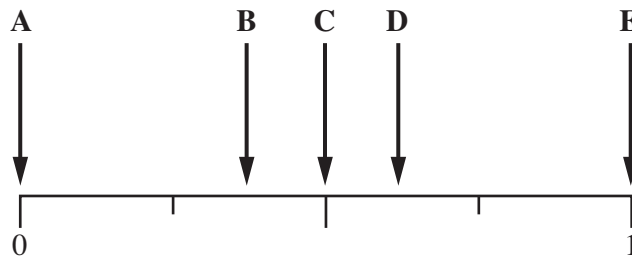
Trish picks up one of these cards without looking.
She says:

There are two shapes, so there is an evens chance that I pick a card with a triangle.

(i) Explain why Trish is wrong.

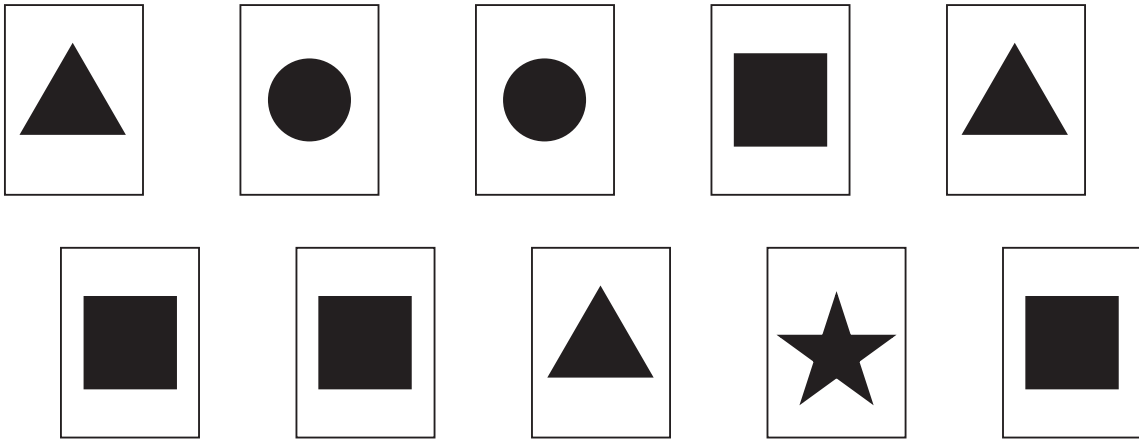
.....
 [1]

(ii) Which of these arrows shows the probability that Trish picks a card with a circle?



(a)(ii) [1]

(b) Jojo has these ten cards.



Jojo picks up one of these cards without looking.


What is the probability that he picks

(i) a card with a triangle,

(b)(i) [1]

(ii) a card that does not have a triangle,

(ii) [1]

(iii) a card with  on it?

(iii) [1]

5 (a) Simplify.

(i) $7x + x - 6x$

(a)(i) [1]

(ii) $3c + 5d + 2c - 4d$

(ii) [2]

(b) Solve.

(i) $x - 5 = 12$

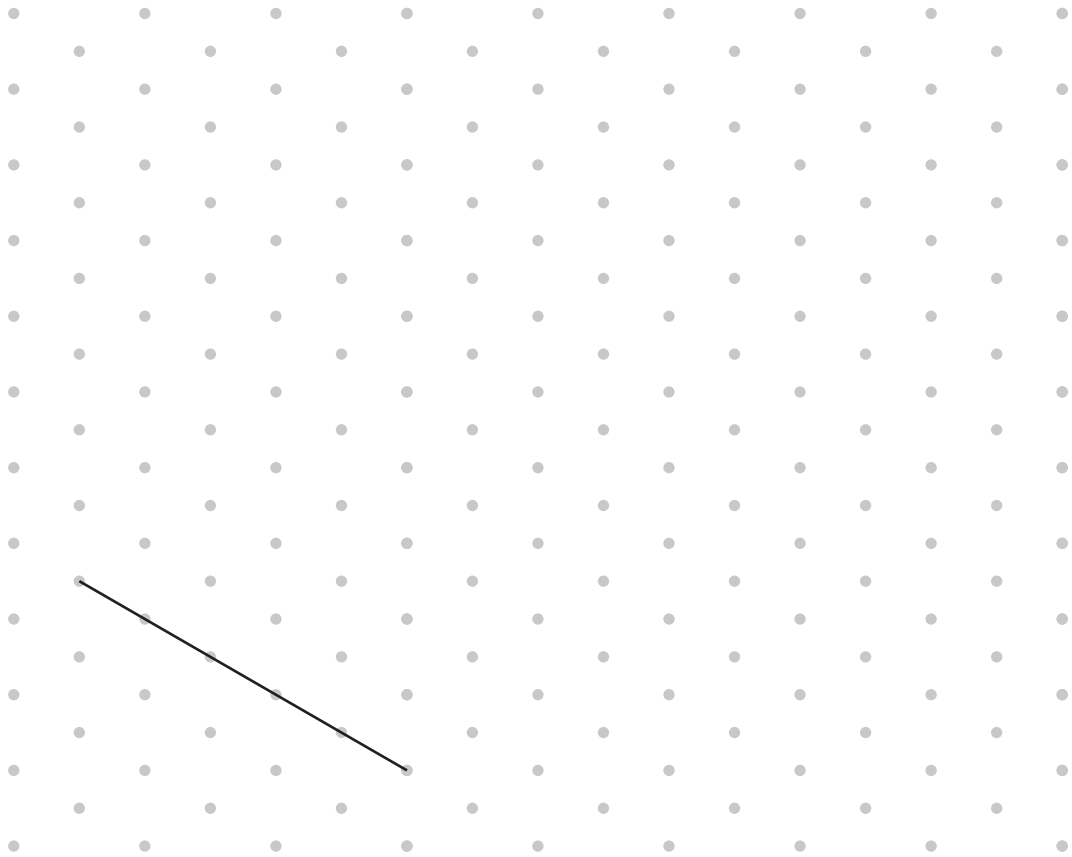
(b)(i) [1]

(ii) $2x - 1 = 8$

(ii) [2]

6 A cuboid measures 5 cm by 4 cm by 3 cm.

(a) Complete this isometric drawing of the cuboid.
One edge has been drawn for you.



[2]

(b) Work out the volume of the cuboid.
Give the units of your answer.

(b) [3]

7 Work out.

(a) $2^2 \times 5^3$

(a) [2]

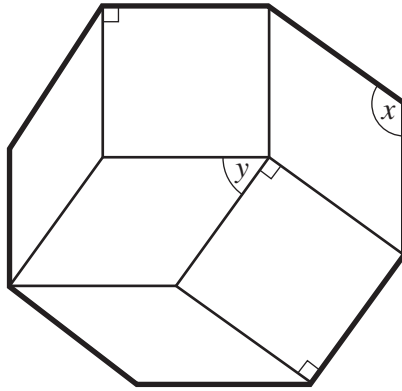
(b) $-6 + 4$

(b) [1]

(c) -3×-5

(c) [1]

- 8 A regular octagon is divided into 2 congruent squares and 4 congruent rhombuses.



Not to scale

Work out the sizes of angles x and y .

$$x = \dots\dots\dots^\circ$$

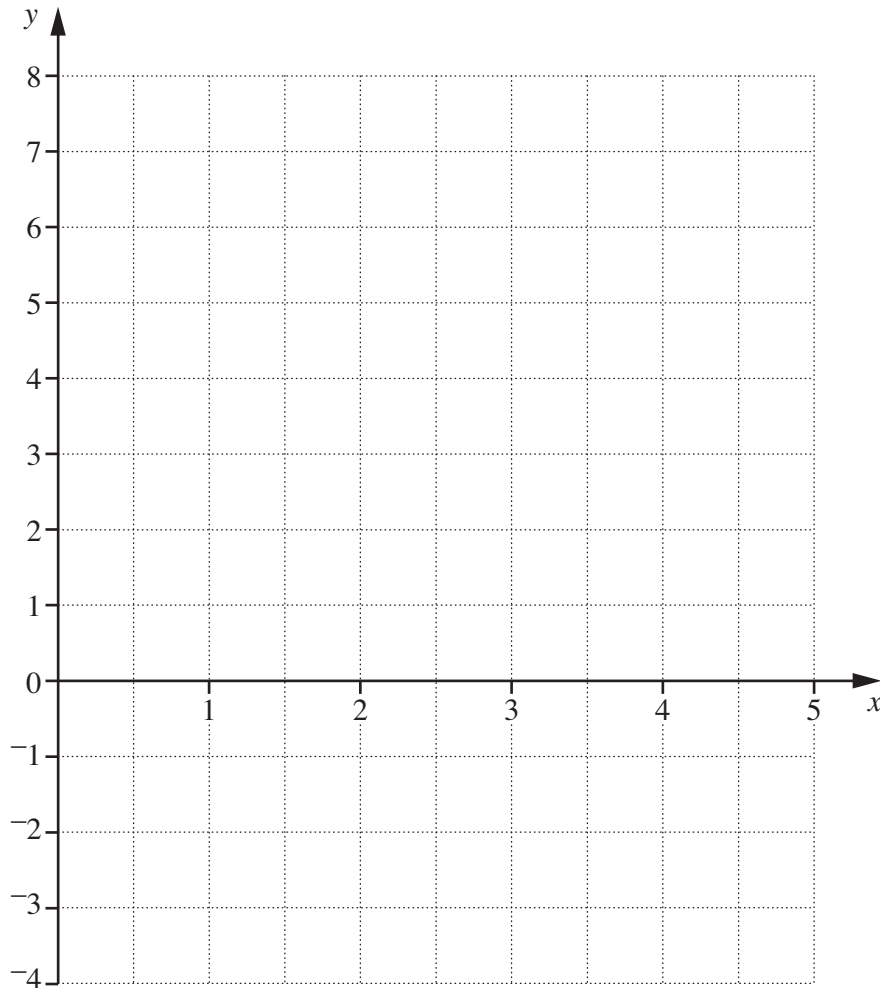
$$y = \dots\dots\dots^\circ \quad [4]$$

- 9 (a) Complete this table for $y = 6 - 2x$.

x	0	2	4
y			-2

[2]

- (b) Draw the graph of $y = 6 - 2x$.



[2]

10 Work out.

$$4\frac{1}{3} - 1\frac{4}{5}$$

Give your answer as a mixed number.

..... [3]

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