

**GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT)
MODULE M3 – SECTION B**

M3

MONDAY 21 JANUARY 2008

Morning
Time: 30 minutes

Candidates answer on the question paper

Additional materials: Geometrical instruments
Tracing paper (optional)
Electronic calculator



Candidate
Forename

Candidate
Surname

Centre
Number

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Candidate
Number

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INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that 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.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- Do **not** write outside the box bordering each page.
- Write your answer to each question in the space provided.

INFORMATION FOR CANDIDATES

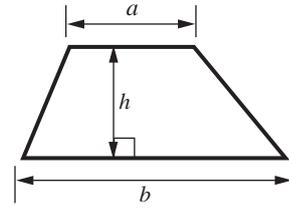
- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this Section is 25.
- Section B starts with question 8.
- You are expected to use a calculator in Section B of this paper.

FOR EXAMINER'S USE	
SECTION B	

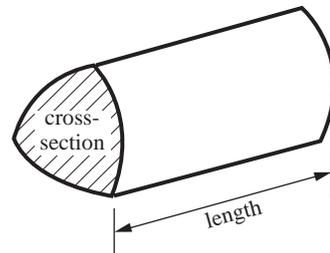
This document consists of **10** printed pages and **2** blank pages.

Formulae Sheet

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



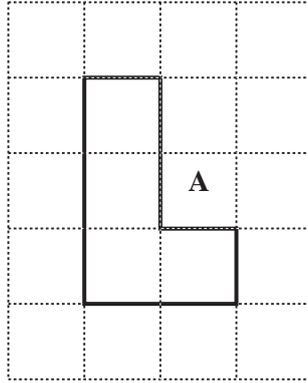
Volume of prism = (area of cross-section) \times length



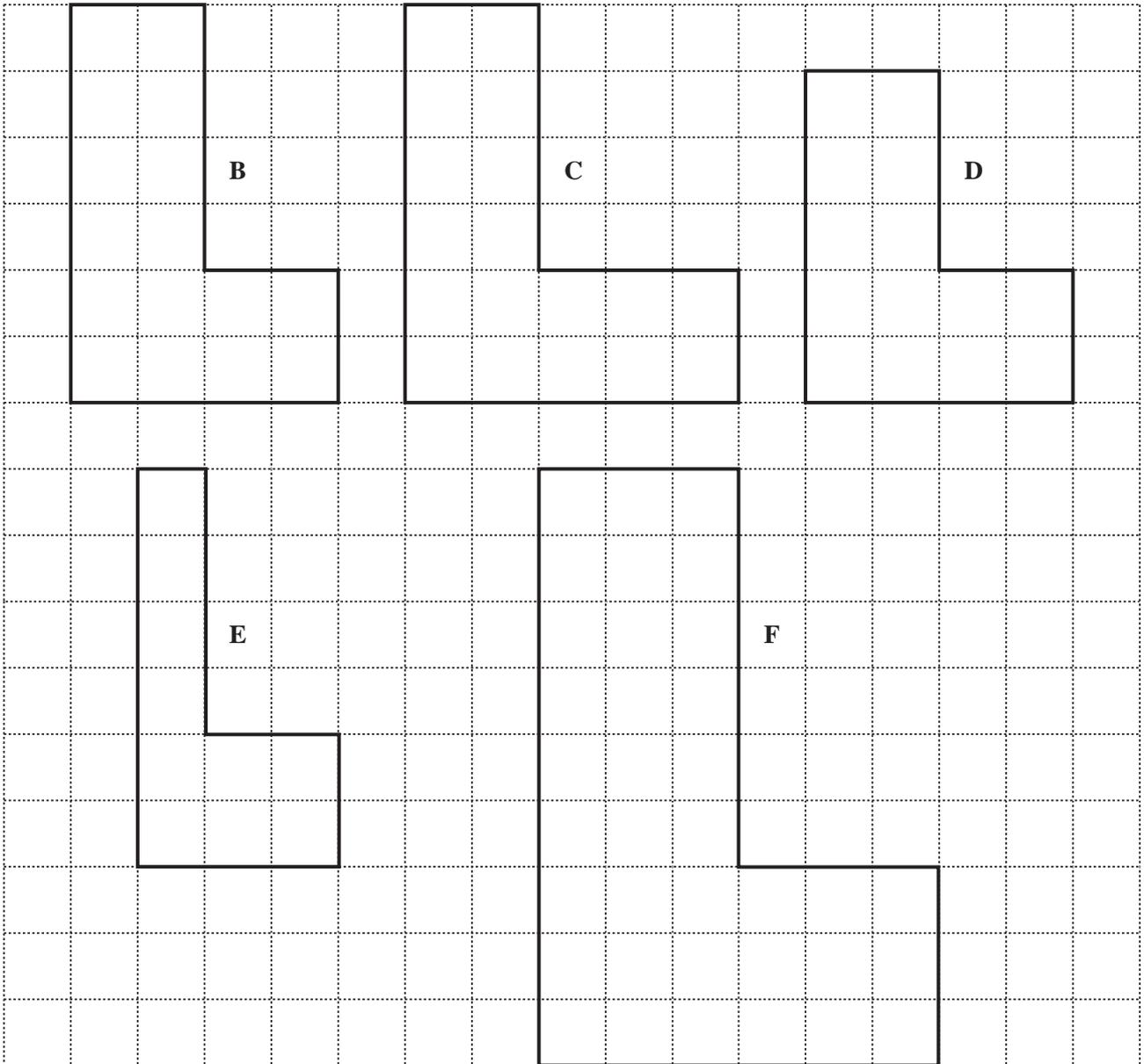
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3

8 This is shape A.



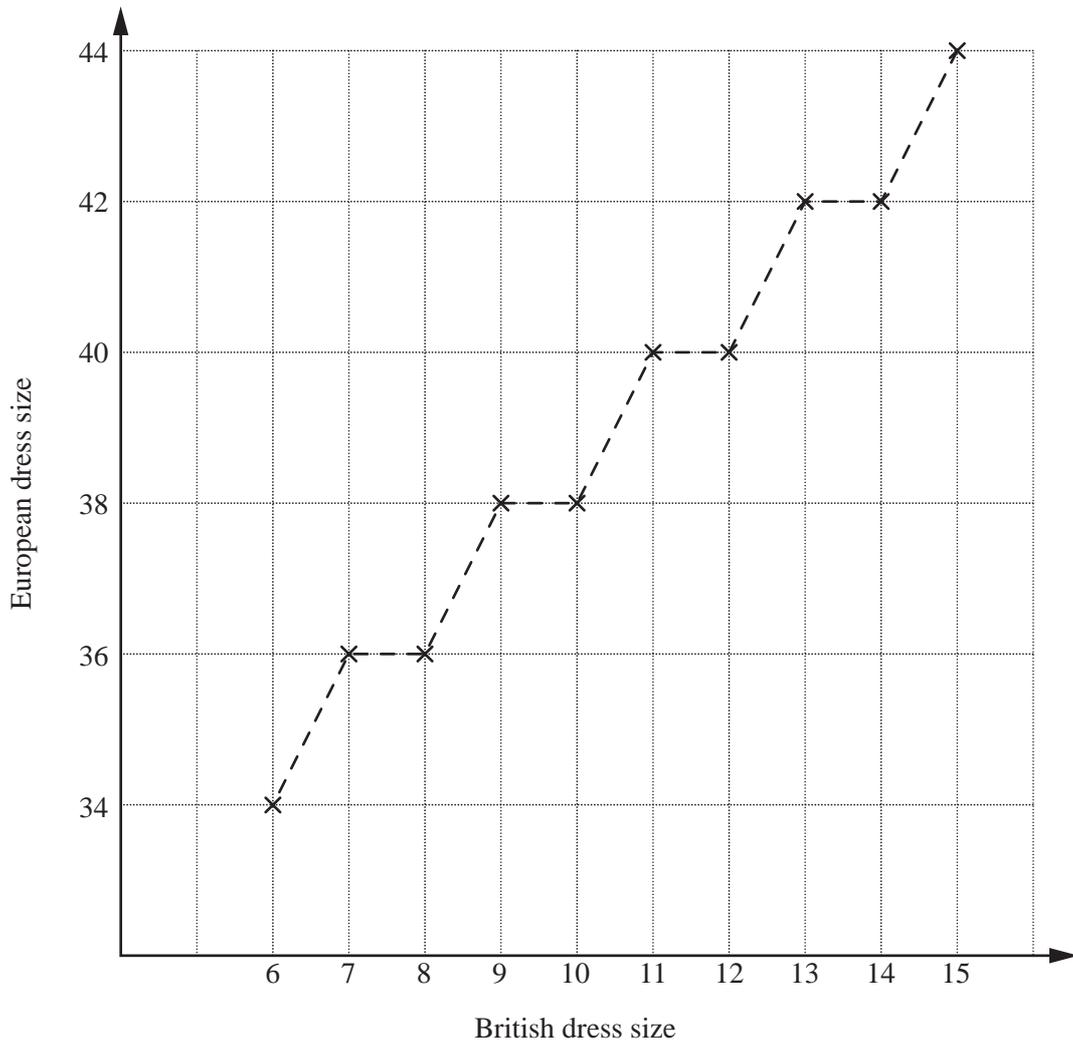
Which two of these shapes are enlargements of shape A?



..... and [2]

2

9 This is a diagram to convert between British dress sizes and European dress sizes.



(a) Julie buys British dress size 11.

Which European dress size is the same as this?

(a) [1]

(b) Olga buys European dress size 42.

Which two British dress sizes are the same as this?

(b) and [1]

(c) Mandy buys British dress size 16.

Continue the pattern to help you work out which European dress size is the same as this.

(c) [1]

3

10 Andy grows beans.
He measures the lengths of some beans.

Here are his results in centimetres.

20 23 28 19 21 32 24 18 21 23

(a) Work out the mean length.

(a) cm [3]

(b) Work out the range of the lengths.

(b) cm [1]

(c) Andy harvests some beans.

He takes 12 broad beans and
8 runner beans, and puts them in a bag.

He picks a bean out of the bag without looking.

(i) Mark an arrow on the line to show the probability that he picks a broad bean.



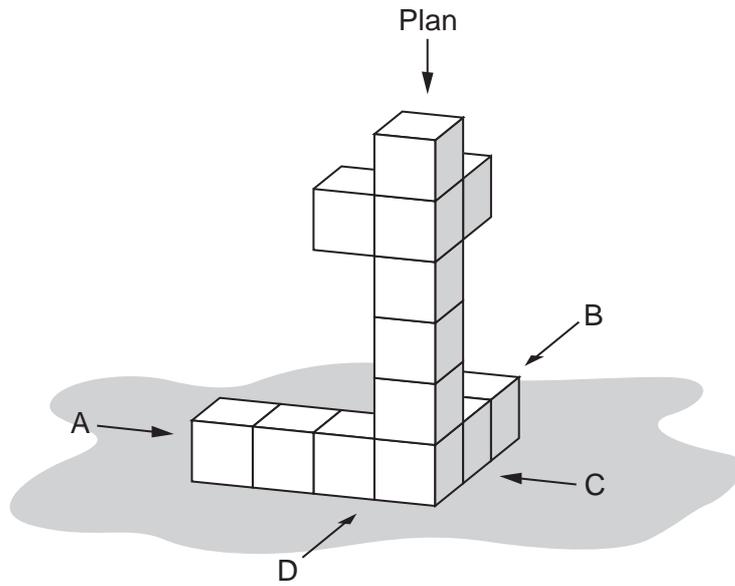
[1]

(ii) Work out the probability that he picks a runner bean.

(c)(ii) [2]

7

- 11 This solid is made from centimetre cubes.
There are no hidden cubes.

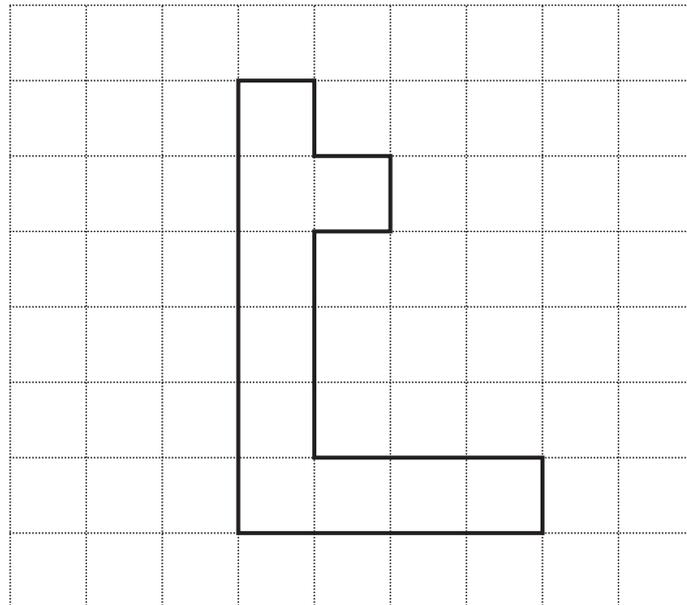


- (a) How many cubes are in the solid?

(a) [1]

- (b) This is the view of the solid from one of the arrows.

Which arrow?



(b) [1]

(c) Draw the plan view of the solid.



[2]

4	
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12 Solve.

(a) $5 + x = 17$

(a) [1]

(b) $x - 2 = 12$

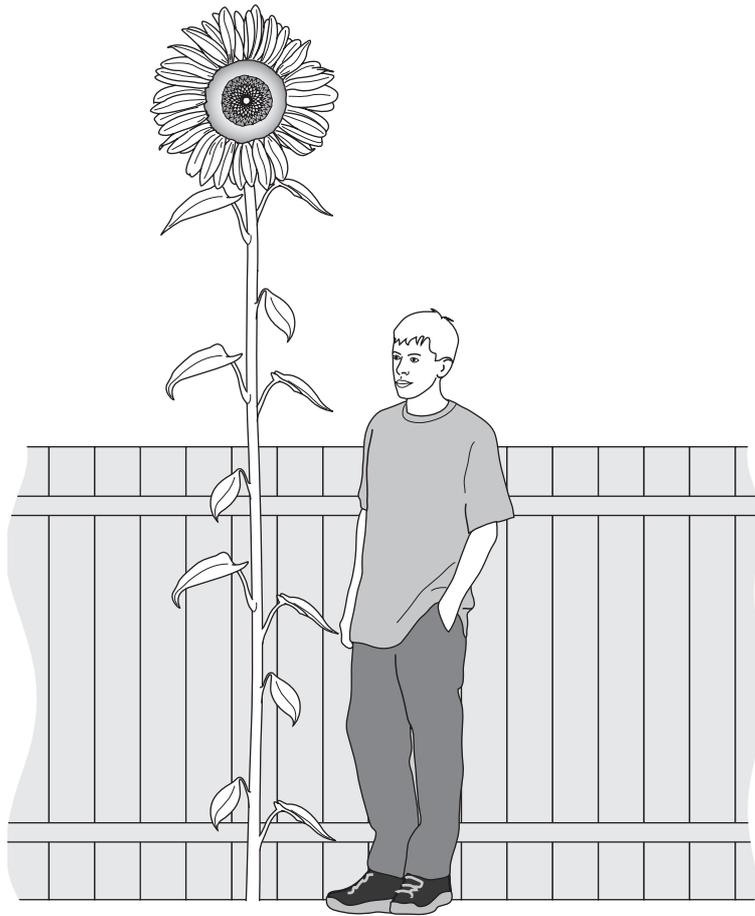
(b) [1]

(c) $3x = 18$

(c) [1]

3	
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13 This is Ken's tallest sunflower.



About how many metres tall is this sunflower?
Explain how you worked out your answer.

..... m tall because

..... [2]

2

14 Dogs do not live as long as humans.
 Their ages can be compared using *human years* and *dog years*.

(a) This rule is a rough way to change *human years* into *dog years*.

$$D = H \div 7$$

where D is the number of *dog years*,
 H is the number of *human years*.

(i) Use the rule to change 77 human years into dog years.

(a)(i) [1]

(ii) Rover is 2 dog years old.

How many human years is this?

(ii) [1]

(b) A dog expert has this more accurate rule for humans over 21.

To change human years into dog years:
 subtract 21,
 then divide by 4,
 then add 2

Use **this** rule to change 77 human years into dog years.

(b) [2]

4

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