

**GENERAL CERTIFICATE OF SECONDARY EDUCATION  
MATHEMATICS C (Graduated Assessment)**

**M8 2338A**

MODULE M8 – SECTION A

**MONDAY 22 JANUARY 2007**

Morning

Time: 30 minutes

Candidates answer on the question paper.  
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.
- 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**

- 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.

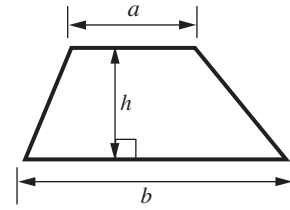
**WARNING**  
**You are not allowed to use a  
calculator in Section A of this paper.**

For Examiner's Use	
Section A	
Section B	
Total	

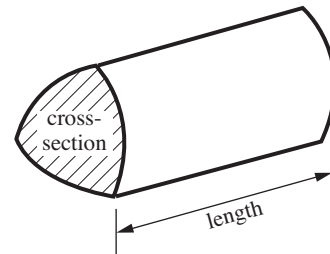
This document consists of **8** printed pages.

## Formulae Sheet

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



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



**PLEASE DO NOT WRITE ON THIS PAGE**

1 (a) Simplify.

$$a^4 \times a^3$$

(a) ..... [1]

(b) Rearrange this formula to make  $x$  the subject.

$$y = 7 + 4x$$

(b) ..... [2]

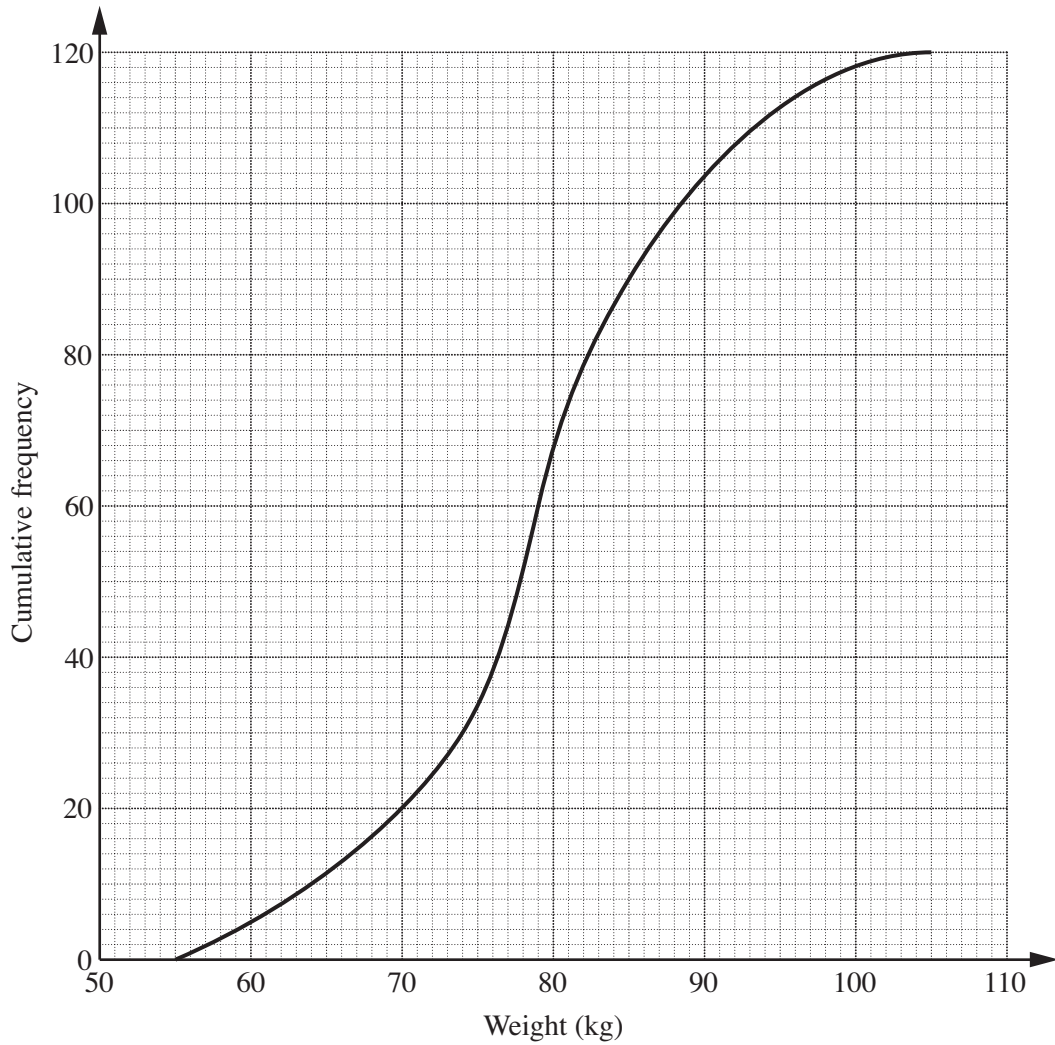
(c) Expand and simplify.

$$(x + 5)(x - 4)$$

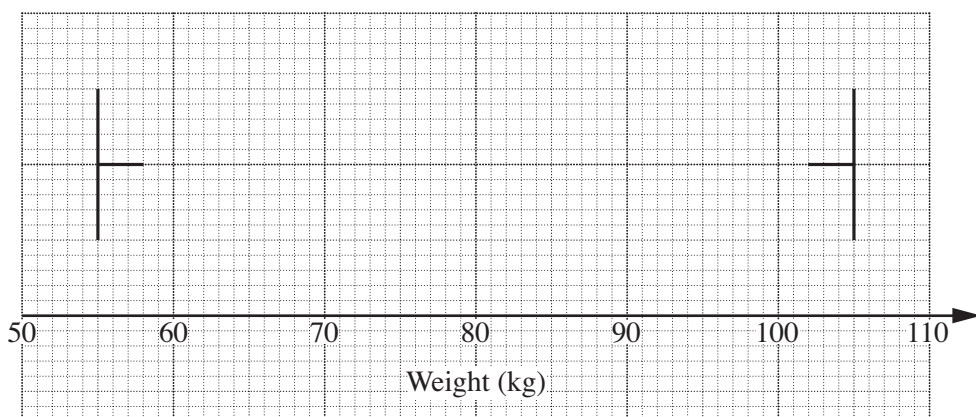
(c) ..... [2]

5
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- 2 The weights of 120 students in year 11 of a school were recorded.  
This cumulative frequency graph shows the distribution of their weights.

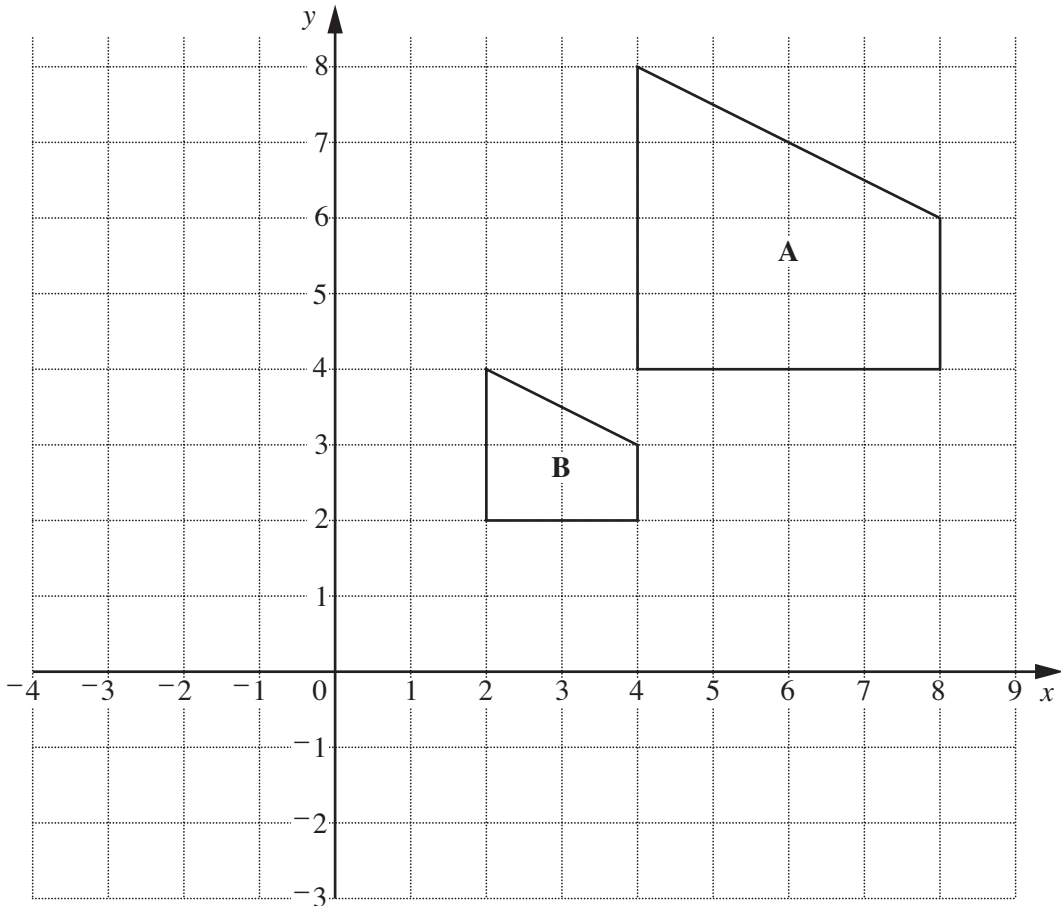


Complete the box plot to show this information.



[3]

3
---



- (a) Translate shape **B** by  $\begin{pmatrix} 4 \\ -3 \end{pmatrix}$ .

Label the image **C**.

[2]

- (b) Describe fully the **single** transformation that maps shape **A** onto shape **B**.

.....  
 ..... [3]

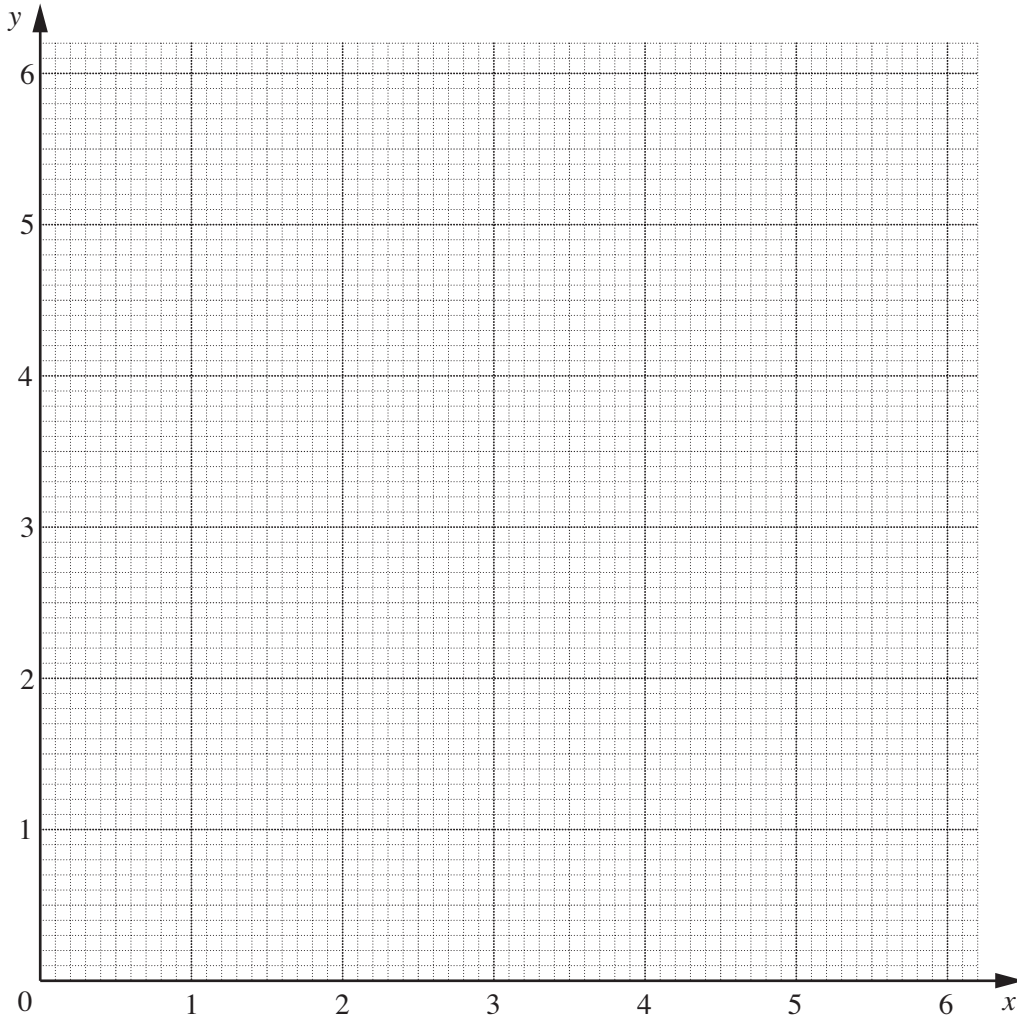
5
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4 (a) Complete the table below for  $y = \frac{6}{x}$ .

$x$	1	2	3	4	5	6
$y$	6		2		1.2	1

[1]

(b) Draw the graph of  $y = \frac{6}{x}$  on the grid below.



[2]

(c) Use your graph to solve the equation  $\frac{6}{x} = 2.2$ .

(c) ..... [1]

4
---

- 5 In these expressions,  $a$ ,  $b$  and  $c$  represent lengths.

$$a(ab + bc)$$

$$a^2b$$

$$c(a + b)$$

$$4(a + c)$$

Which **one** of these expressions could represent an area?  
Explain how you decide.

..... because .....

..... [2]

2
---

- 6 (a) Write 0.00027 in standard form.

(a) ..... [1]

- (b) Evaluate.

$$1.7 \times 10^5 + 3.4 \times 10^4$$

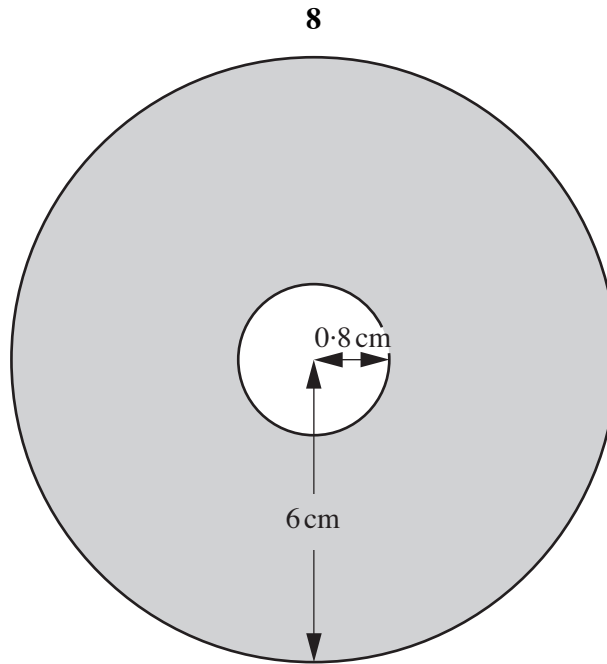
Give your answer in standard form.

(b) ..... [2]

3
---

**TURN OVER FOR QUESTION 7**

7



Not to scale

The diagram shows a CD with dimensions as shown.

Work out the shaded area.

Leave your answer as a multiple of  $\pi$ .

.....  $\text{cm}^2$  [3]

3
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