

**GENERAL CERTIFICATE OF SECONDARY EDUCATION  
MATHEMATICS C (GRADUATED ASSESSMENT)  
MODULE M7 – SECTION A**

**M7**

**TUESDAY 11 MARCH 2008**

Morning  
Time: 30 minutes

Candidates answer on the question paper  
**Additional materials (enclosed):** None

**Additional materials (required):**  
Geometrical instruments  
Tracing paper (optional)



\* C O P / T 5 7 7 4 9 \*

Candidate Forename

Candidate Surname

Centre Number

Candidate Number

**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.
- 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**.



**WARNING**

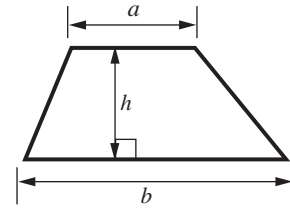
**You are not allowed to use a calculator in Section A of this paper.**

FOR EXAMINER'S USE	
SECTION A	
SECTION B	
TOTAL	

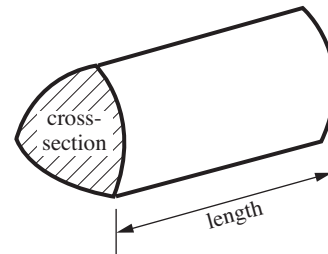
This document consists of **8** printed pages.

## Formulae Sheet

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



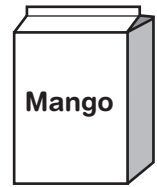
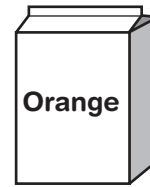
**Volume of prism** = (area of cross-section)  $\times$  length



**PLEASE DO NOT WRITE ON THIS PAGE**

- 1 Henry makes a fruit drink.  
He mixes orange juice and mango juice in the ratio 4 : 1.  
Henry makes 600 ml of fruit drink.

How much mango juice does he use?



..... ml [2]

- 2 (a) Write as a single power of 5.

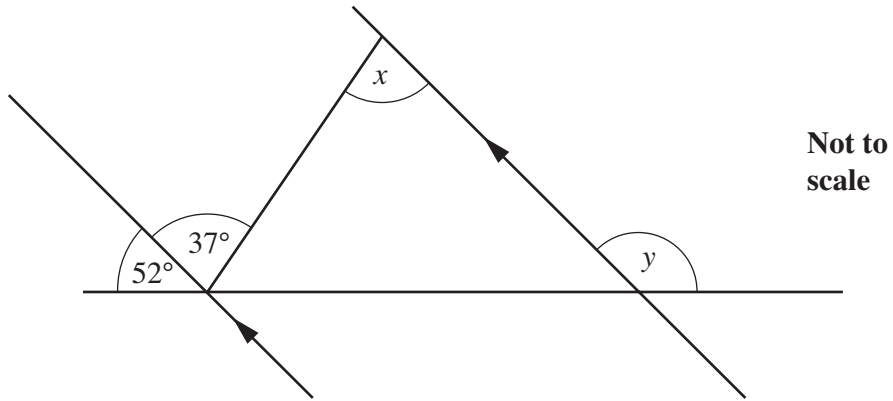
$$\frac{5^4 \times 5^6}{5^3}$$

(a) ..... [2]

- (b) Write 250 as the product of its prime factors.

(b) ..... [2]

3



- (a) Find angle  $x$ .  
Give a reason for your answer.

$x = \dots\dots\dots^\circ$  because  $\dots\dots\dots$   
 $\dots\dots\dots$  [2]

- (b) Find angle  $y$ .  
Show how you work out your answer.

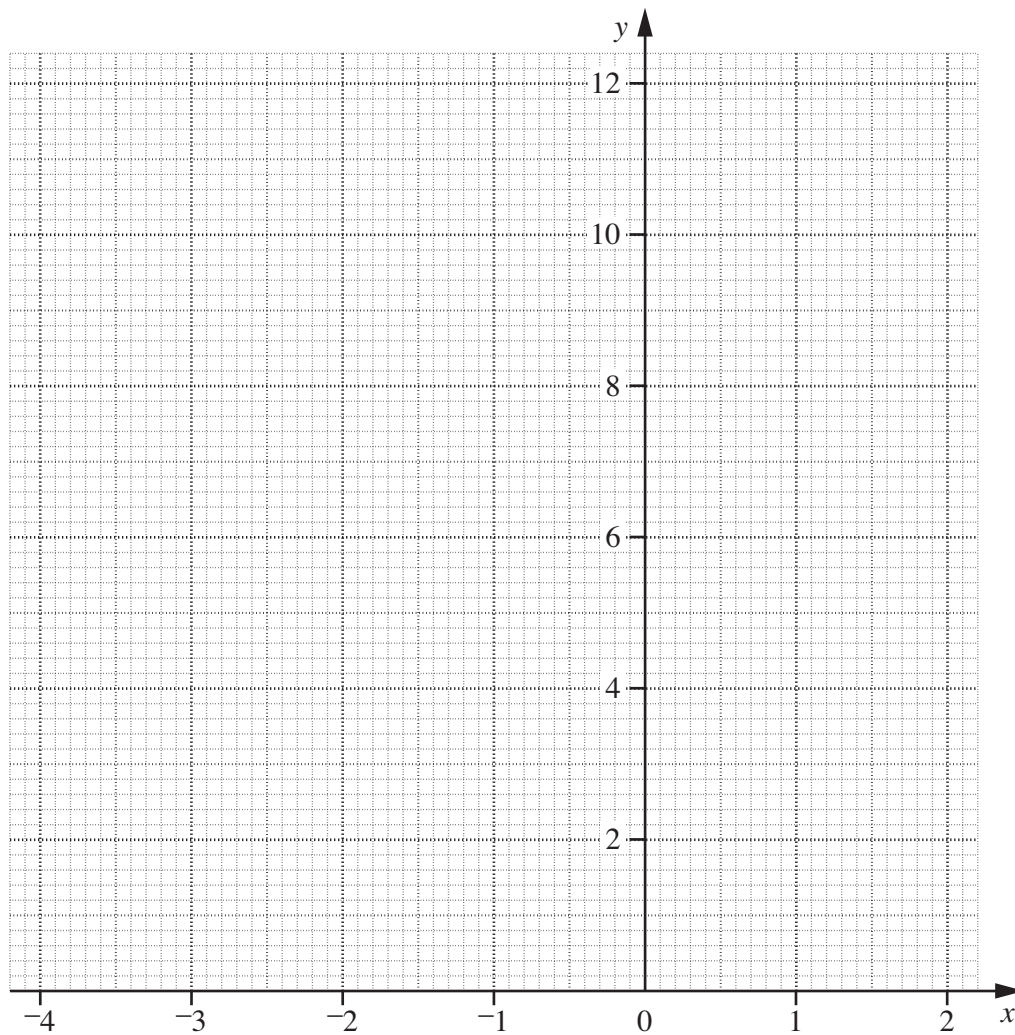
(b)  $\dots\dots\dots^\circ$  [2]

- 4 (a) Complete the table for  $y = x^2 + 2x + 3$ .

$x$	-4	-3	-2	-1	0	1	2
$y$	11	6	3		3	6	11

[1]

- (b) Draw the graph of  $y = x^2 + 2x + 3$ .



[2]

- (c) Use your graph to solve the equation  $x^2 + 2x + 3 = 5$ .

(c) ..... [2]

**5 Use ruler and compasses only in this question.**

Leave in all your construction lines.

The diagram shows the scale drawing of a straight road, AB.

The scale is **1 cm to 2 km**.



(a) Construct the perpendicular bisector of AB. [2]

(b) A television mast is:

- Equidistant from A and B.
- 12 km from A.

Use a construction to find the two possible positions of the mast.  
Label them  $T_1$  and  $T_2$ .

[2]

- 6 (a) Rearrange the expression  $A = 5x + 12$  to make  $x$  the subject.

(a) ..... [2]

- (b) Expand.

$$(x + 4)(x + 1)$$

(b) ..... [2]

- 7 Here are the first four terms of a sequence.

**5      8      11      14**

Write down the  $n$ th term of this sequence.

..... [2]

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