

**GENERAL CERTIFICATE OF SECONDARY EDUCATION**  
**MATHEMATICS C (GRADUATED ASSESSMENT)**  
MODULE M6 – SECTION B

**B276B**

Candidates answer on the question paper

**OCR Supplied Materials:**  
None

- Other Materials Required:**
- Geometrical instruments
  - Tracing paper (optional)
  - Scientific or graphical calculator

**Monday 9 March 2009**  
**Morning**

**Duration: 30 minutes**



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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**INSTRUCTIONS TO CANDIDATES**

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use 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, however additional paper may be used if necessary.

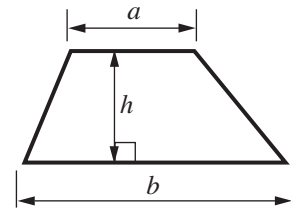
**INFORMATION FOR CANDIDATES**

- The number of marks is given in brackets [ ] at the end of each question or part question.
- Section B starts with question 7.
- You are expected to use a calculator in Section B of this paper.
- Use the  $\pi$  button on your calculator or take  $\pi$  to be 3.142 unless the question says otherwise.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

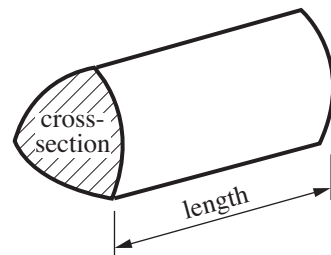
<b>FOR EXAMINER'S USE</b>	
<b>SECTION B</b>	

## 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**

7 Calculate.

(a)  $7 \cdot 2^2 - \sqrt{68 \cdot 89}$

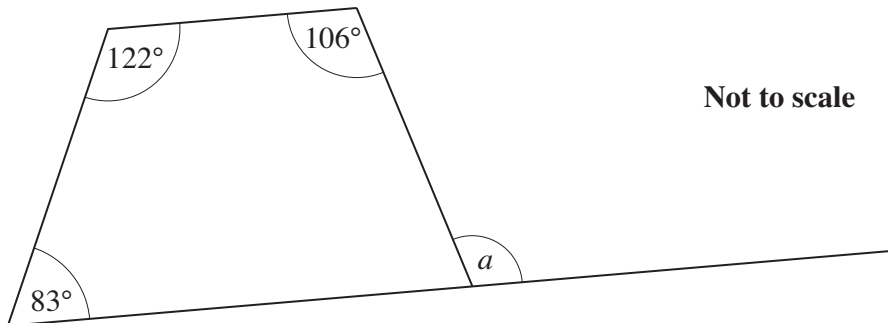
(a) ..... [1]

(b)  $\frac{5 \cdot 6 \times 3 \cdot 1}{4 \cdot 5 - 0 \cdot 23}$

Give your answer correct to one decimal place.

(b) ..... [2]

8



Work out angle  $a$ .  
Give a reason for each stage of your working.

Angle  $a = \dots\dots\dots^\circ$  because  $\dots\dots\dots$   
 $\dots\dots\dots$   
 $\dots\dots\dots$  [3]

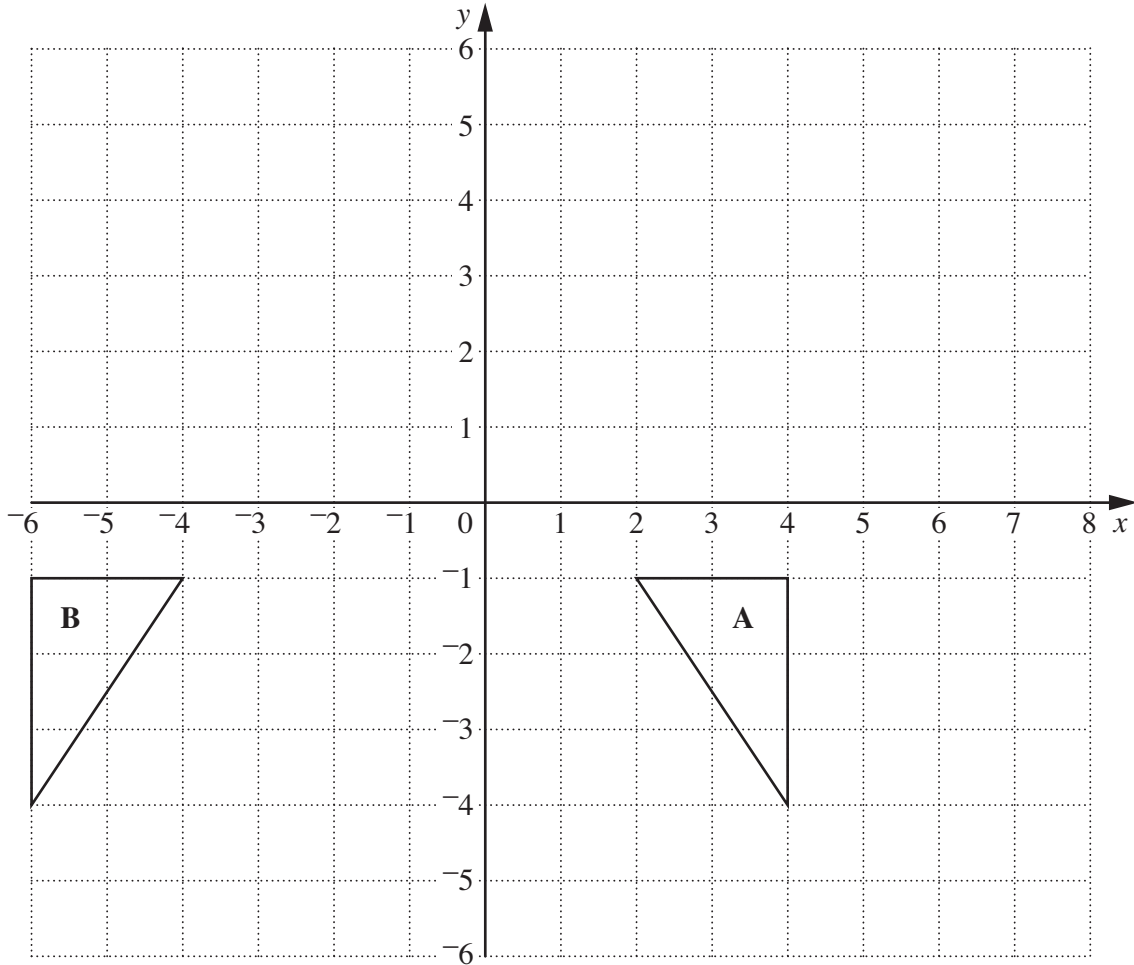
9 Solve.

(a)  $4x + 9 = 1$

(a) ..... [2]

(b)  $6x + 4 = 5 - 2x$

(b) ..... [3]



- (a) Describe fully the **single** transformation that maps triangle **A** onto triangle **B**.

.....  
 ..... [2]

- (b) Translate triangle **A** by the vector  $\begin{pmatrix} -2 \\ 4 \end{pmatrix}$ .

Label the image **C**.

[2]

- 11 Stephen mixes orange cordial with water in the ratio 1 : 5 to make orange squash.  
He makes 750 millilitres of orange squash.

How much cordial and how much water does he use?

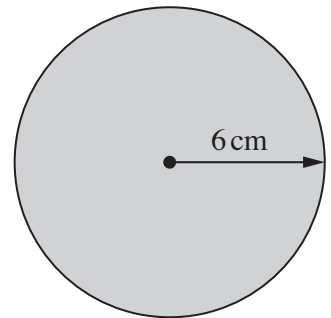
Cordial ..... ml

Water ..... ml [2]

- 12 Terry has a collection of CDs.

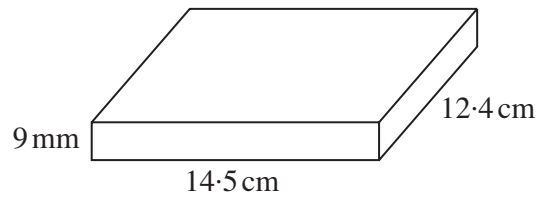
- (a) A CD is circular and has a radius of 6 cm.

Calculate the circumference of a CD.

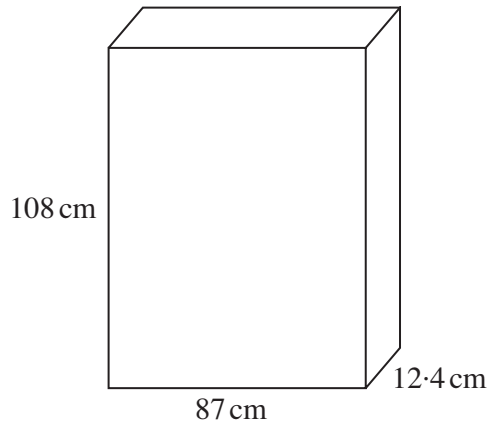


(a) ..... cm [2]

- (b) Terry's CDs are packed in cases of length 14.5 cm, width 12.4 cm and height 9 mm.



Terry stores his CDs in a cupboard that has internal dimensions 12.4 cm by 87 cm by 108 cm.



- (i) Show that there is a way of packing CD cases in the cupboard without leaving any space.

[2]

- (ii) Find the maximum number of CD cases that can be packed in the cupboard.

(b)(ii) ..... [2]

**TURN OVER FOR QUESTION 13**

- 13 Susannah is choosing one meal from a choice of four Chinese dishes. This table shows the probabilities of her choosing each meal.

Meal	Probability
Chicken chow mein	0.4
Beef in black bean sauce	0.23
Duck in orange sauce	0.1
King prawns	

Complete the table.

[2]

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