



M7

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

B277B

Candidates answer on the question paper.

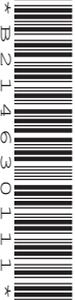
OCR supplied materials:
None

Other materials required:

- Geometrical instruments
- Tracing paper (optional)
- Scientific or graphical calculator

**Tuesday 21 June 2011
Afternoon**

Duration: 30 minutes



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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INSTRUCTIONS TO CANDIDATES

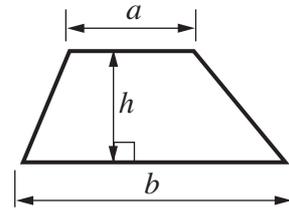
- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Show your working. 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

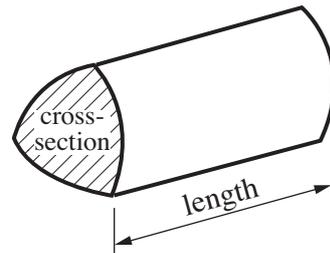
- The number of marks is given in brackets [] at the end of each question or part question.
- Section B starts with question 8.
- You are expected to use a calculator in Section B of this paper.
- Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.
- The total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

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

- 8 (a) Juanita is working out costs for a party at her home.
The decorations cost £10.
She spends £8 per person on refreshments.

Write a formula for the total cost in pounds, C , of her party for n people.

(a) [2]

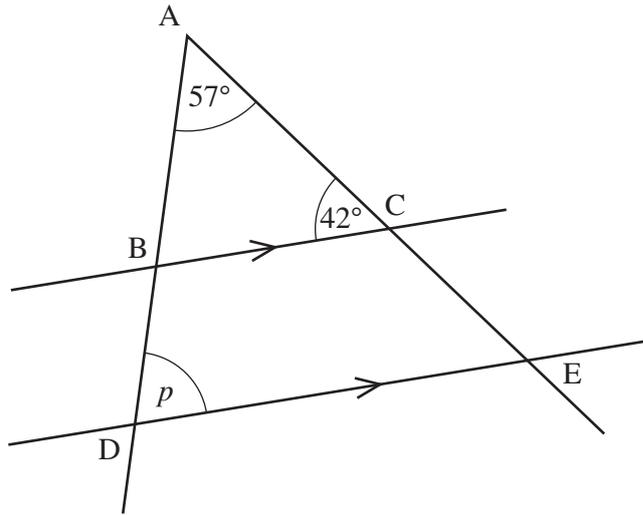
- (b) Seth uses this formula for the total cost of his party.

$$C = 6n + 50$$

C is the total cost in pounds and n is the number of people at the party.
Seth has a budget of £200 for the total cost.

Find the largest number of people that he can have at his party.

(b) [2]



Not to
scale

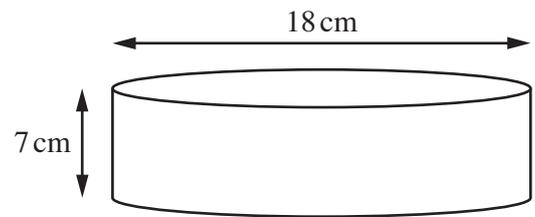
Find the size of angle p . Give reasons for your answer.

$p = \dots\dots\dots^\circ$ because

.....

.....[3]

10 A birthday cake is in the shape of a cylinder.



- (a) The top of the cake is to be covered in icing.
8 g of icing covers an area of 10 cm^2 .

What weight of icing is needed?

(a) g [3]

- (b) The side of the cake is to be covered in nuts.
5 g of nuts cover an area of 10 cm^2 .

What weight of nuts is needed?

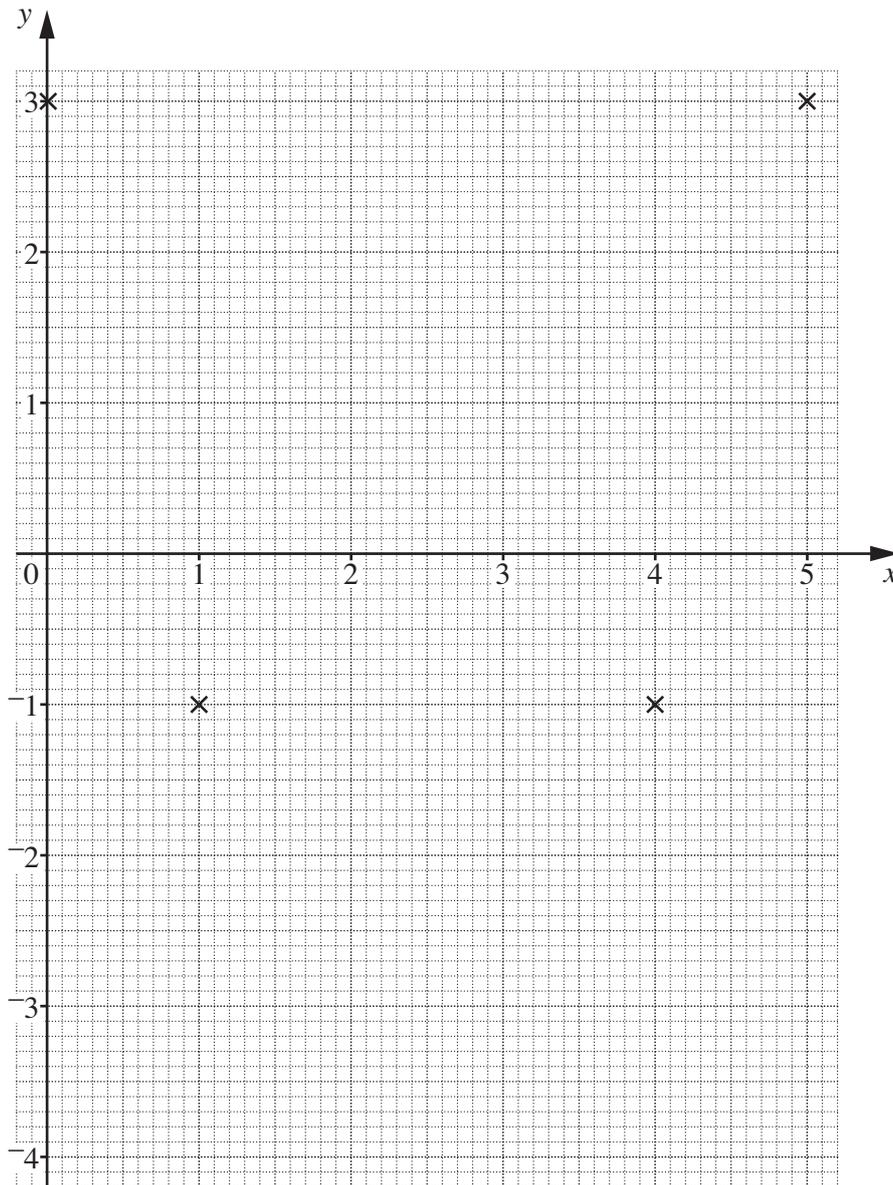
(b) g [3]

- 11 (a) Complete this table for $y = x^2 - 5x + 3$.

x	0	1	2	3	4	5
y	3	-1			-1	3

[1]

- (b) Complete this graph of $y = x^2 - 5x + 3$ for values of x from 0 to 5.



[2]

- (c) Use the graph to find the values of x for which $x^2 - 5x + 3 = 0$.
Give your answers correct to 1 decimal place.

(c)..... [2]

- 12 (a) Ashad investigates the price charged for a cup of coffee in different cafés.

This table summarises his results.

Price (£ c)	Frequency
$0.50 < c \leq 1.00$	2
$1.00 < c \leq 1.50$	12
$1.50 < c \leq 2.00$	13
$2.00 < c \leq 2.50$	7
$2.50 < c \leq 3.00$	2

Calculate an estimate of the mean price charged for a cup of coffee.

(a) £ [4]

- (b) One café increases its price from £2.25 to £2.40.

Calculate the percentage increase.

Give your answer correct to 1 decimal place.

(b) % [3]

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