M7

OCR RECOGNISING ACHIEVEMENT

GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS C (GRADUATED ASSESSMENT)

B277B

MODULE M7 (SECTION B)

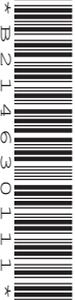Candidates answer on the question paper.

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	

| Centre number					Candidate number				

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.

OCR is an exempt Charity

Turn over

Formulae Sheet

Area of trapezium $= \frac{1}{2}(a + b)h$
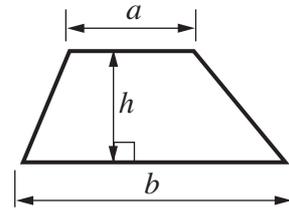
Volume of prism = (area of cross-section) × length
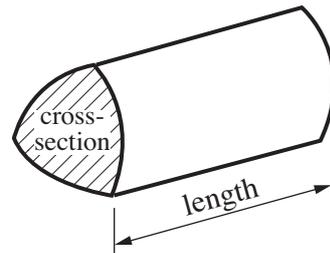
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8 **(a)** Juanita is working out costs for a party at her home.
The decorations cost £10.
She spends £8 per person on refreshments.

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

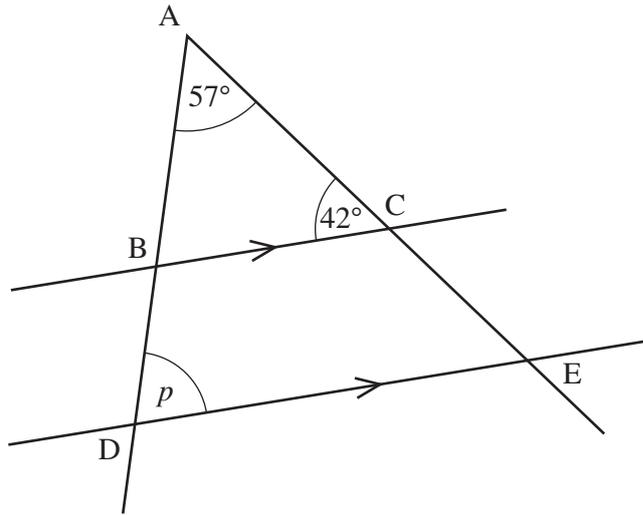**(a)** .... **[2]**

(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.

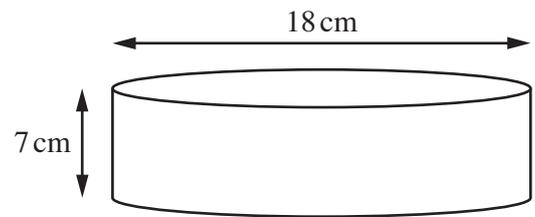Find the largest number of people that he can have at his party.

(b) .... **[2]**

Turn over

9

Not to scale

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

p = ...° because ....

....

....**[3]**

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

   18 cm

7 cm

  (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 $10 \, cm^2$.
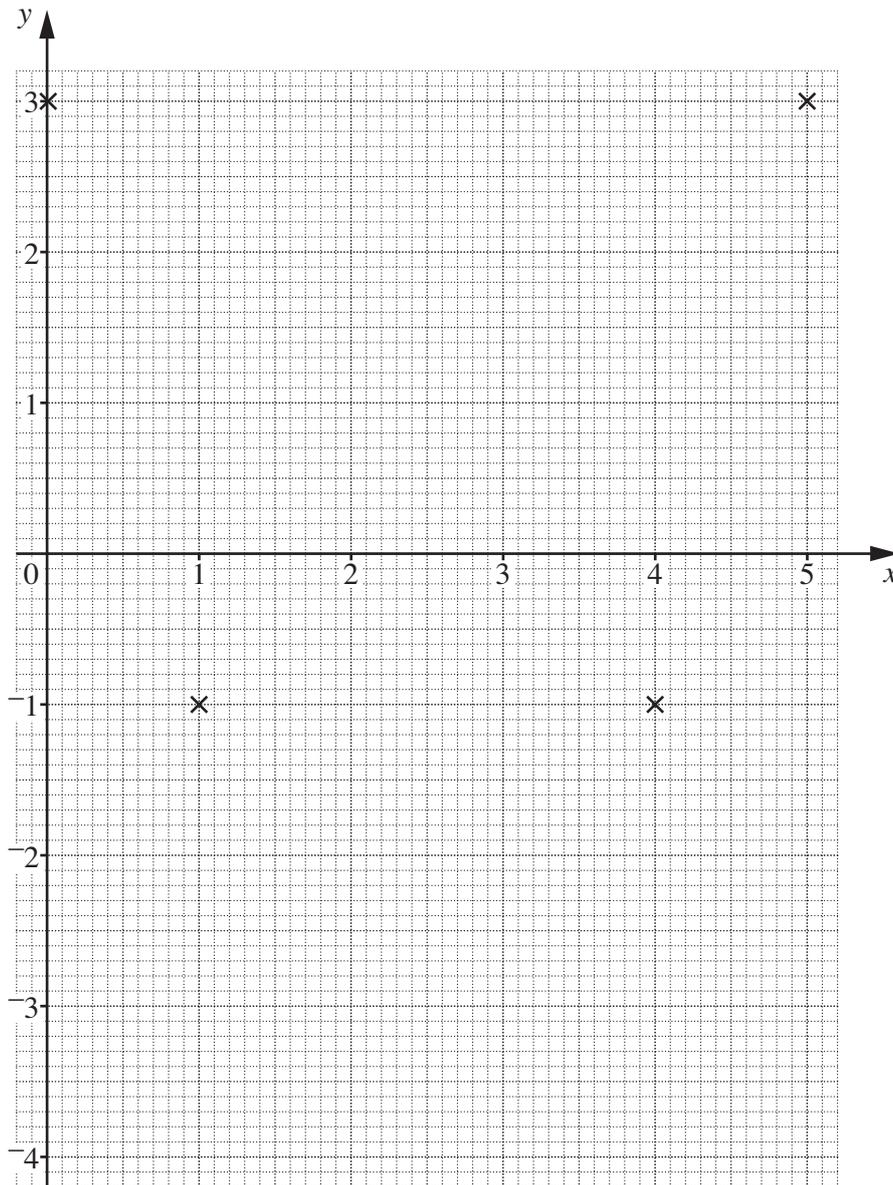
      What weight of nuts is needed?

                                 (b) .... g **[3]**

Turn over

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
$0{\cdot}50 < c \leqslant 1{\cdot}00$	2
$1{\cdot}00 < c \leqslant 1{\cdot}50$	12
$1{\cdot}50 < c \leqslant 2{\cdot}00$	13
$2{\cdot}00 < c \leqslant 2{\cdot}50$	7
$2{\cdot}50 < c \leqslant 3{\cdot}00$	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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