



# M6

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

## B276A



Candidates answer on the question paper.

**OCR supplied materials:**  
None

**Other materials required:**

- Geometrical instruments
- Tracing paper (optional)

**Thursday 20 January 2011**  
**Morning**

**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**

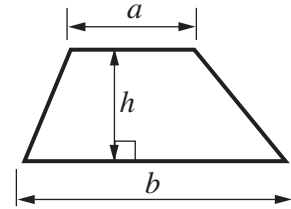
- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

**WARNING**

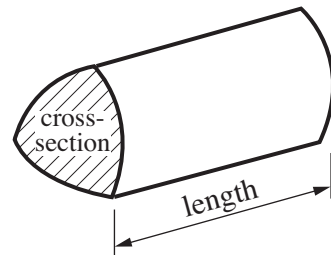
No calculator can be used for Section A of this paper

## Formulae Sheet

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



$$\text{Volume of prism} = (\text{area of cross-section}) \times \text{length}$$

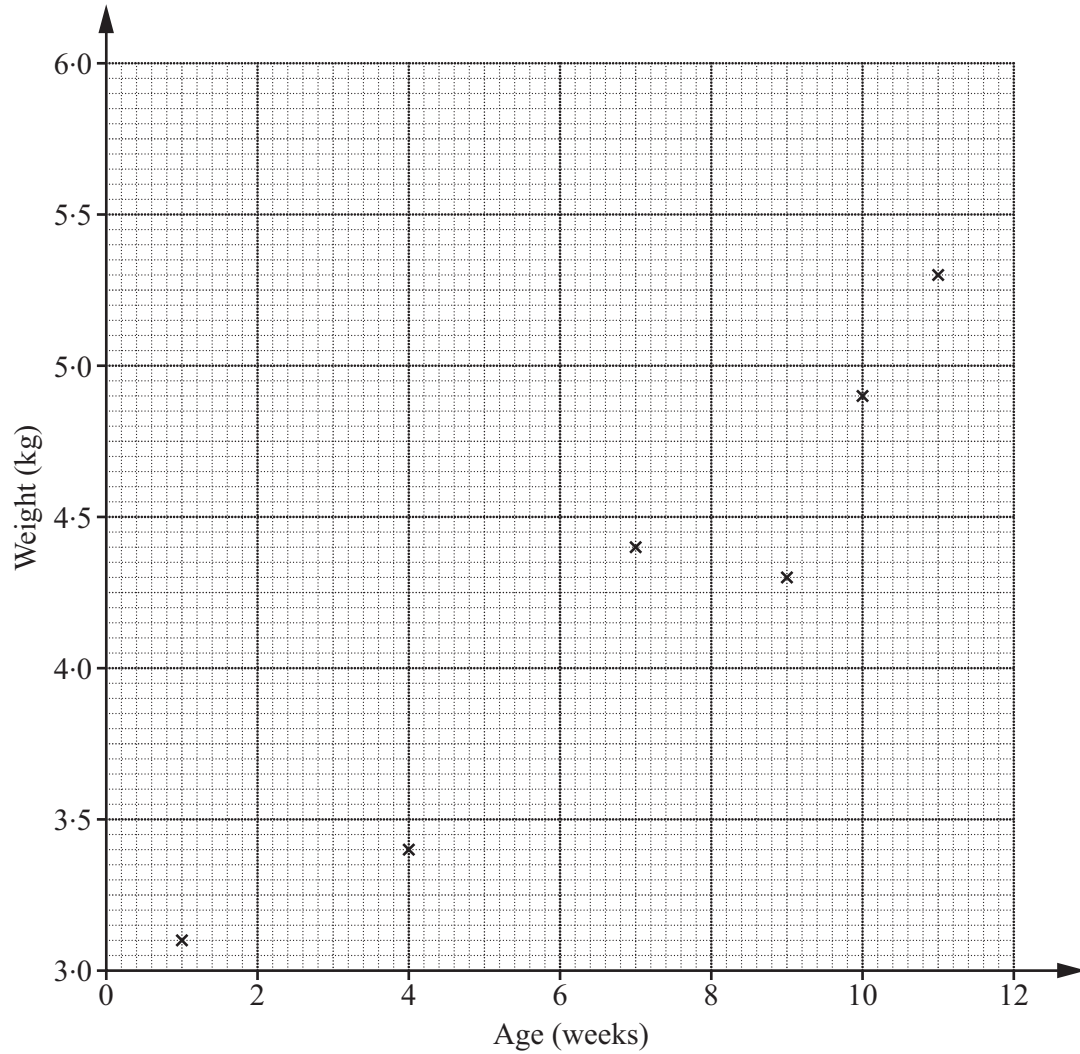


**PLEASE DO NOT WRITE ON THIS PAGE**

1 The table shows the ages and weights of 10 babies.

Age (weeks)	4	7	11	1	9	10	8	3	6	12
Weight (kg)	3.4	4.4	5.3	3.1	4.3	4.9	4.5	3.2	3.9	5.6

The points for the first six babies are plotted on the scatter graph.



(a) Plot the points for the remaining four babies. [2]

(b) Describe the correlation shown.  
 ..... [1]

(c) (i) Draw a line of best fit. [1]

(ii) Use your line of best fit to estimate the weight of a 5-week old baby.

(c)(ii) ..... kg [1]

- 2 Aimee and Alex go out for a meal.  
The menu is shown below.

Starter	Price
Soup	£ 4.20
Prawn cocktail	£ 5.35

Main Course	Price
Steak	£ 12.50
Mushroom stroganoff	£ 9.75

Sweet	Price
Ice cream	£ 2.25
Fruit salad	£ 3.20

- (a) Aimee has soup, mushroom stroganoff and ice cream.

What is the total cost of her meal?

(a) £ ..... [2]

- (b) Alex has prawn cocktail, steak and fruit salad.

How much more does his meal cost than Aimee's meal?

(b) £ ..... [2]

(c) The restaurant also offers a party menu at a cost of £11.50 per meal.

How much would it cost for 46 meals from the party menu?

(c) £ ..... [3]

3 Last year, Mike earned £35 000.  
His mortgage repayments for that year amounted to £10 500.

(a) Write the ratio of his mortgage repayments to his earnings in its simplest form.

(a) ..... : ..... [2]

(b) To avoid financial difficulties, it is recommended that mortgage repayments should not be more than  $\frac{1}{3}$  of earnings.

Were Mike's mortgage repayments more than  $\frac{1}{3}$  of his earnings?

Give a reason for your answer.

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

4 (a) Work out.

(i)  $5 + 3 \times 4$

(a)(i) ..... [1]

(ii)  $-2 + 5^2$

(ii) ..... [1]

(b) Put brackets in this calculation so that it is correct.

$2 \times 5 + 3 + 4 = 20$  [1]

5 (a) Expand.

$3(x + 6)$

(a) ..... [1]

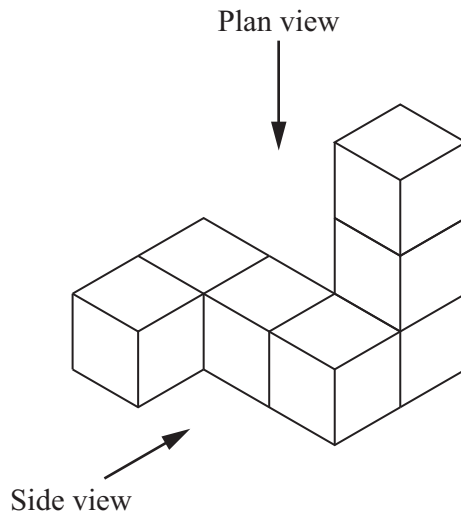
(b) Factorise.

$7a + 21$

(b) ..... [1]

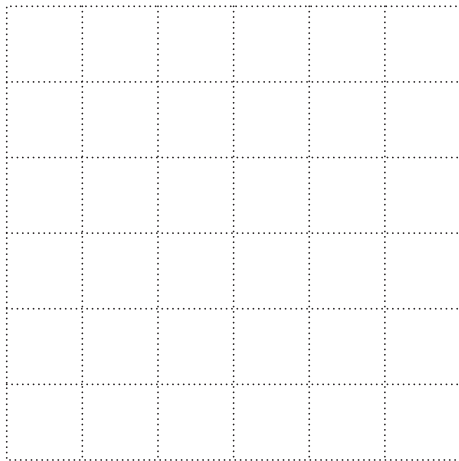
7

6 This solid is made from seven 1 cm cubes.

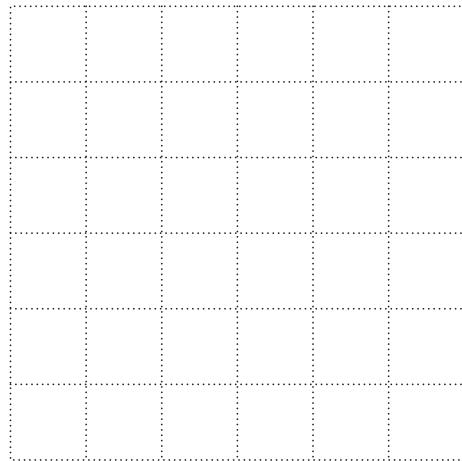


On the grids, draw the plan view and the side view of the solid.

Plan view



Side view



[2]

**TURN OVER FOR QUESTION 7**

- 7 Rex and Yasmin enter a competition.  
The probability that Rex wins the first prize is 0.07.  
The probability that Yasmin wins the first prize is 0.18.

What is the probability that the first prize is won by someone other than Rex or Yasmin?

..... [2]



**Copyright Information**

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website ([www.ocr.org.uk](http://www.ocr.org.uk)) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact the Copyright Team, First Floor, 9 Hills Road, Cambridge CB2 1GE.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.