M6

OCR
RECOGNISING ACHIEVEMENT

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**.
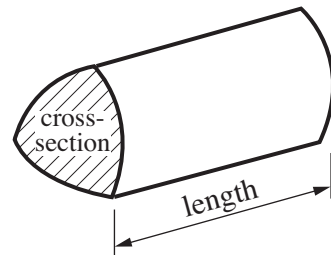• This document consists of **8** pages. Any blank pages are indicated.

WARNING

No calculator can be used for Section A of this paper

OCR is an exempt Charity

Turn over

Formulae Sheet

Area of trapezium $= \frac{1}{2}(a+b)h$
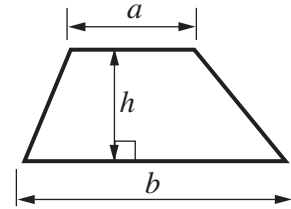
Volume of prism = (area of cross-section) × length

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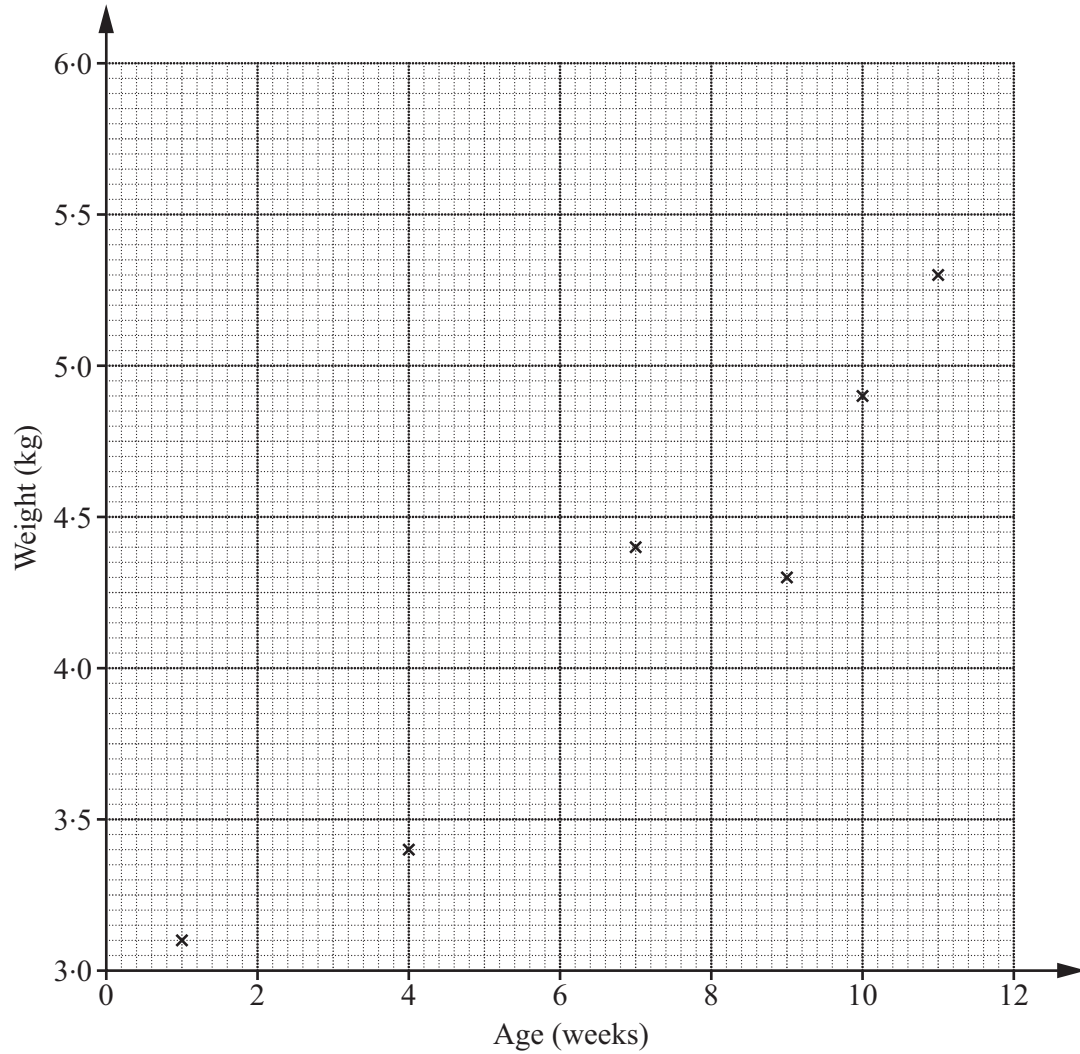
(a) Plot the points for the remaining four babies. **[2]**

(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]**

Turn over

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]**

6 This solid is made from seven 1 cm cubes.
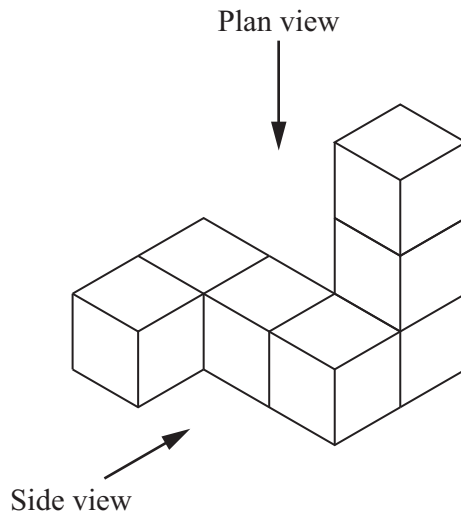
Plan view

Side view

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

Plan view
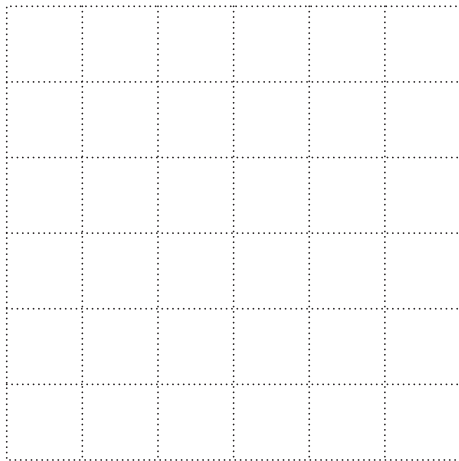
Side view
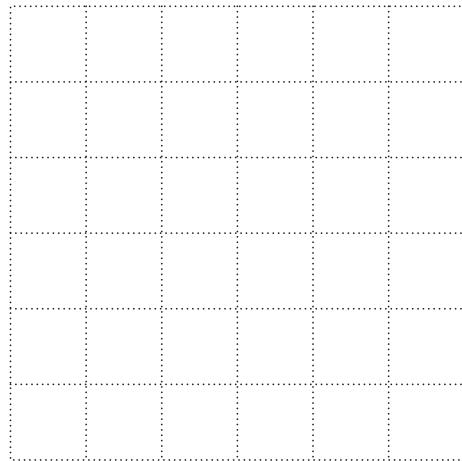
[2]

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]**