M5

OCR RECOGNISING ACHIEVEMENT

GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS C (GRADUATED ASSESSMENT)

MODULE M5 – SECTION A

B275A

Candidates answer on the question paper

OCR Supplied Materials:
None

Other Materials Required:
• Geometrical instruments
• Tracing paper (optional)
• Pie chart scale (optional)

Tuesday 20 January 2009
Morning

Duration: 30 minutes

Candidate Forename		Candidate Surname	

Centre Number						Candidate Number					

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.
• 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
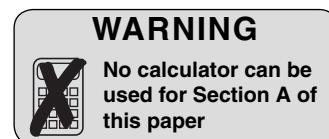
FOR EXAMINER'S USE	
SECTION A	
SECTION B	
TOTAL	

OCR is an exempt Charity

Turn over

Formulae Sheet

Area of trapezium $= \frac{1}{2}(a + b)h$
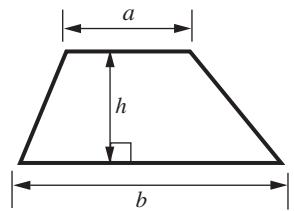
Volume of prism = (area of cross-section) × length
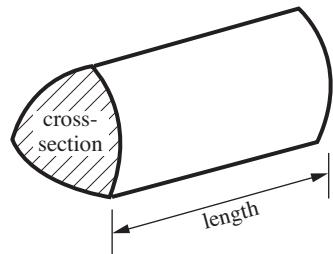
PLEASE DO NOT WRITE ON THIS PAGE

1   Angie needs to buy $28\,m^2$ of carpet.
     The carpet costs £18·75 per square metre.

   (a) Write down a calculation Angie could do in her head to **estimate** the total cost of the carpet.

   (a) .... = £ .... **[2]**

   (b) Is the estimate bigger or smaller than the exact cost?
           Explain how you made your decision.

   The estimate is .... than the exact cost because ....

   .... **[1]**

2   Complete these equivalent fractions.

$$\frac{3}{4} \;=\; \frac{}{8} \;=\; \frac{15}{}$$

   [2]

Turn over

3   Quadrilateral **A** is rotated clockwise to quadrilateral **B**.
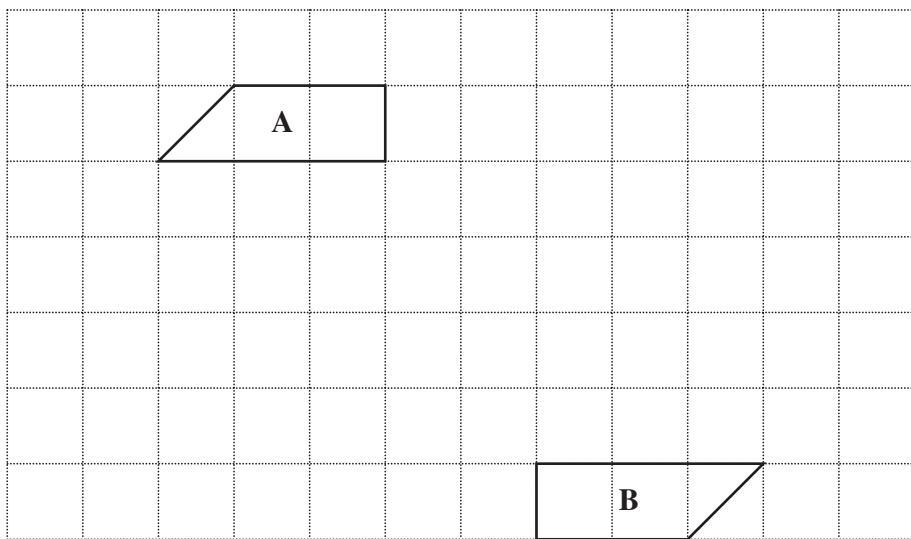
(a) Mark the centre of rotation with a cross.   **[1]**

(b) Write down the angle of rotation.

(b) .... ° **[1]**

(c) What is the mathematical name for this type of quadrilateral?

(c) .... **[1]**

4 Annie and Mary both use the local swimming pool.

(a) Annie pays each time she goes to the pool.
The graph shows the total cost for different numbers of visits.
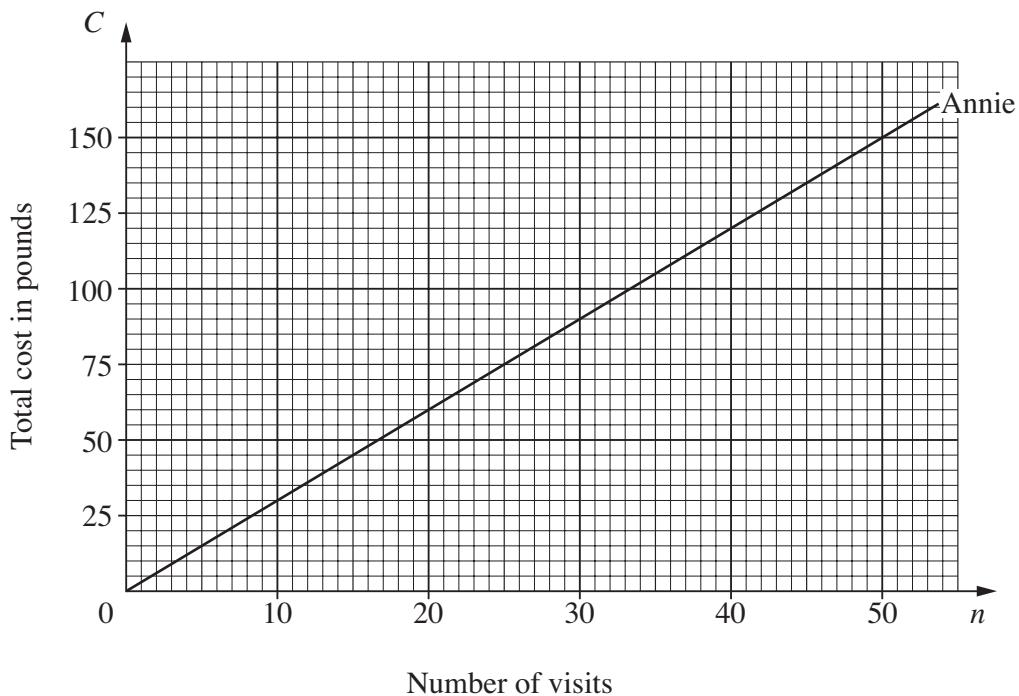
Use the graph to find the total cost of 15 visits.

(a) £ .... **[1]**

(b) Mary pays a membership fee for the year and a charge for each visit.

This formula can be used to work out the total cost for different numbers of visits.

$$C = 2n + 30$$

C is the total cost in pounds, n is the number of visits.

(i) Complete the table.

n	0	10	20	30	40	50
C	30	50	70			

[2]

(ii) On the grid above, draw the graph of $C = 2n + 30$. **[2]**

(iii) For how many visits is the total cost the same for Annie and Mary?

(b)(iii) .... **[1]**

Turn over

5 Use numbers from this list to complete the statements below.

<div align="center">

⁻3　　　　⁻2　　　　2　　　　3

</div>

(a) …… + …… = ⁻5 **[1]**

(b) …… × …… = ⁻6 **[1]**

(c) …… − …… = 5 **[1]**

6 Simplify.

$$3x - 2y + 4x - y$$

.... **[2]**

7 Look at these coins.

(a) The value of one of these coins is 25% of the value of another of these coins.

Which are the two coins?

(a) .... and .... **[1]**

(b) The value of one of these coins is 40% of the value of another of these coins.

Write down two coins for which this is true.

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

8 Solve.

(a) $11 = \dfrac{x}{2}$

(a) .... **[1]**

(b) $4x - 1 = 19$

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

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