OCR
RECOGNISING ACHIEVEMENT

B274A

GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS C (GRADUATED ASSESSMENT)

MODULE M4 – SECTION A

M4

TUESDAY 11 MARCH 2008

Morning
Time: 30 minutes

Candidates answer on the question paper
Additional materials (enclosed): None

Additional materials (required):
Geometrical instruments
Tracing paper (optional)

Candidate Forename

Candidate Surname

Centre Number

Candidate Number

INSTRUCTIONS TO CANDIDATES

* Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
* Use blue or 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.

INFORMATION FOR CANDIDATES

* The number of marks is given in brackets [ ] at the end of each question or part question.
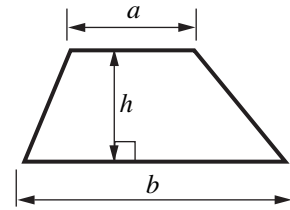* The total number of marks for this Section is **25**.

WARNING

You are not allowed to use a calculator in Section A of this paper.

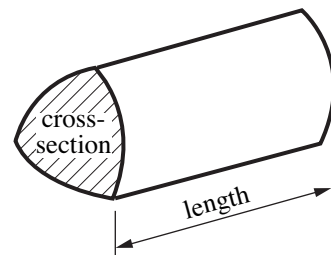| FOR EXAMINER'S USE	
SECTION A	
SECTION B	
TOTAL	

This document consists of **8** printed pages.

[Turn over

Formulae Sheet

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

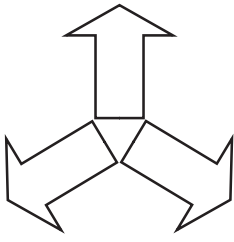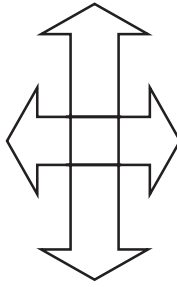

Volume of prism = (area of cross-section) × length
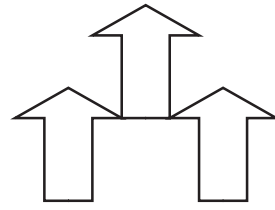

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1   (a)   Write down the order of rotation symmetry of each pattern.

....
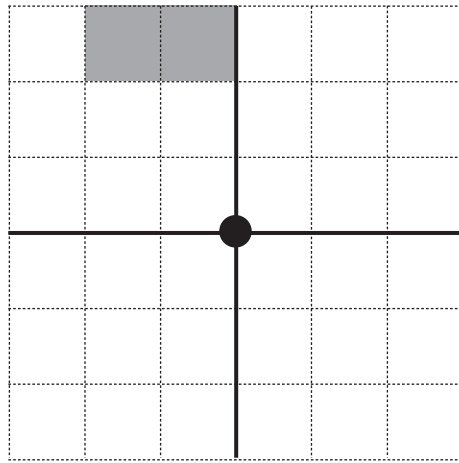
[2]

(b)   Shade 6 more squares so that this pattern has rotation symmetry order 4.

[2]

2   Complete each of the statements below.
    Use numbers from this list.

           4   6   9   21   42   48   60

    (a)   .... is a factor of 12.   [1]

    (b)   .... is a multiple of 12.   [1]

    (c)   .... is a common factor of 12 and 30.   [1]

[Turn over

3 (a) Pam buys this special offer pack.
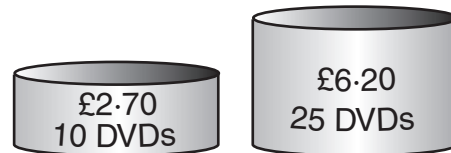She works out that each DVD in the pack costs exactly 23p.

Work out the total cost of the pack.
You must show all your working.

special offer pack

133 DVDs

(a) £ .... [3]

(b) James wants to buy some blank DVDs.
He can buy the small pack or the large pack.

      Small pack: 10 DVDs for £2·70
      Large pack: 25 DVDs for £6·20

£2·70
10 DVDs

£6·20
25 DVDs

Which pack is better value for money?

Show how you decide.

Write *Small* or *Large*

.... pack is better value because ....

.... [3]

4 **(a)** Write $\frac{1}{5}$ as a decimal.

(a) .... [1]

(b) Write $\frac{3}{10}$ as a percentage.

(b) ....% [1]

(c) Write 4% as a fraction.

(c) .... [1]

5 **(a)** Complete this formula for the **area**, A, of this shape.
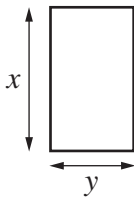
(a) $A = $ .... [1]

(b) Write a formula for the **perimeter**, P, of this shape.
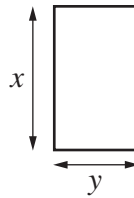
(b) .... [2]

(c) The formula for the length, L, of this spiral is $L = 9t$.
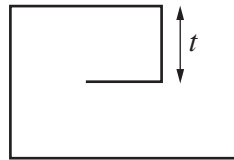
Use the formula to find the length of the spiral when $t = 4$.

(c) .... [1]

[Turn over

6   Nikki is mixing concrete for a path.

This list shows what she needs to cover 1 square metre with concrete.

to cover 1 square metre
```
 32   kg      cement
 60   kg      sand
120   kg      gravel
 18   litres  water
```

(a)   How much sand is needed to make enough concrete to cover half a square metre?

(a) .... kg [1]

(b)   Complete this list to show what Nikki needs to cover 5 square metres with concrete.

.... kg   cement

.... kg   sand

.... kg   gravel

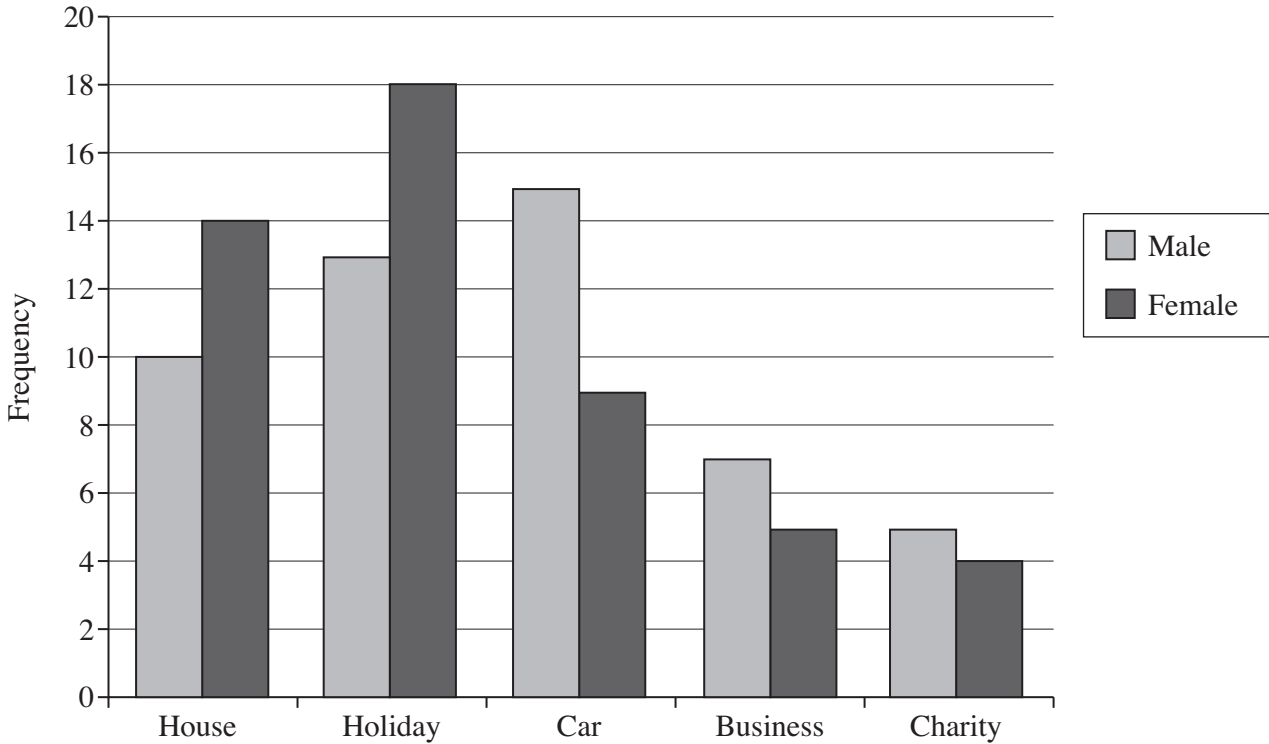............................. litres   water   [2]

7 Charlie did a survey about winning the lottery.
He asked people what they would spend most of the prize money on.
He separated the results for males and females.

His results are shown in this bar chart.

(a) How many females chose Business?

(a) .... [1]

(b) How many **more** males than females chose Car?

(b) .... [1]

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