B275A

GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS C (GRADUATED ASSESSMENT)

MODULE M5 – SECTION A

M5

TUESDAY 24 JUNE 2008

Morning
Time: 30 minutes

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

Additional materials (required):
Geometrical instruments
Tracing paper (optional)
Pie chart scale (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.
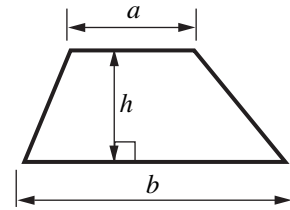- The total number of marks for this Section is **25**.

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
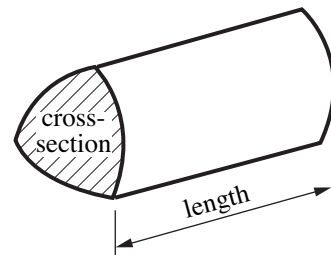
PLEASE DO NOT WRITE ON THIS PAGE

1 Alice (A), Brian (B), Carol (C) and Denzel (D) are the four members of a quiz team.
One of them is to be captain, and another vice-captain.

(a) Complete the table to show all the possible choices for captain and vice-captain.

Captain	Vice-captain
A	B
A	C

You may not need all the lines.

[2]

(b) Each pair is equally likely to be chosen.

Write down the probability that Brian is chosen as captain or vice-captain.

(b) .... [1]

[Turn over

2 The average attendance at Bilton Rovers' home games is 30 465.

    (a) Write 30 465 correct to

        (i) the nearest hundred,

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

        (ii) one significant figure.

                                                     (ii) .... [1]

    (b) Bilton Rovers play 19 home games in a season.
           Assume that there are 30 465 at each home game.

           Write down a calculation you can do in your head,
           to estimate the total attendance at home games in a season.

           (b) Total attendance = ... × .... = ...[2]

    (c) Here are the attendances at Canwick United's home games in October.

                20 142   19 765   25 234   14 012   22 895

        (i) Find the median attendance.

                                                     (c)(i) .... [1]

        (ii) For the attendance at Darton City's home games in October:

              • the median was 19 834
              • the range was 7127

           The attendance at Canwick United was more varied.

           Explain how you know this.

           ....

           .... [1]

3 (a) Solve.

    (i) $x + 7 = 18$

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

    (ii) $25 = 3x + 1$

                                                 (ii) .... [2]

(b) Simplify.

$$6a + 15b + 3a - 4b$$

                                                 (b) .... [2]

                                                     [Turn over

4 **(a)** Complete the following.

$$\frac{36}{40} = \frac{\boxed{}}{10}$$

[1]

(b) Complete this table.

Fraction		Decimal		Percentage
$\frac{9}{10}$	=	0·9	=	................%
$\frac{3}{100}$	=	....	=	3%
....	=	0·53	=	53%

[3]

5 **(a)** Work out.

$2^4 + 3^2$

(a) .... [2]

(b) Three of these calculations have the same answer.

Which one has a different answer?
Show how you decide.

A	**B**	**C**	**D**
$^-2 \times 4 =$	$^-4 - ^-4 =$	$^-6 + ^-2 =$	$16 \div ^-2 =$

(b) .... [2]

6 (a) Here is a rhombus.
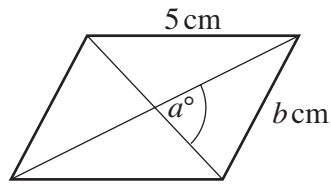
Write down the values of *a* and *b*.

(a) *a* = ...

b = ... [2]
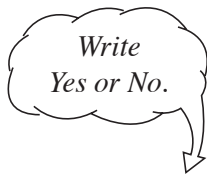
(b) Here are some properties of a quadrilateral.

- Opposite angles are equal
- Opposite sides are equal

Does this mean that the quadrilateral is a rectangle?
Explain your answer.

Write
Yes or No.

.... because ....

.... [1]

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