![OCR logo](RECOGNISING ACHIEVEMENT)

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

General Certificate of Secondary Education

MATHEMATICS C
(Graduated Assessment)

1966/2338A

MODULE M8 – SECTION A

Wednesday   **29 JUNE 2005**   Morning   30 minutes

Candidates answer on the question paper.
Additional materials:
    Geometrical instruments
    Tracing paper (optional)

Candidate
Name

Centre
Number

Candidate
Number

TIME   30 minutes

INSTRUCTIONS TO CANDIDATES

* Write your name, Centre number and candidate number in the boxes above.
* Answer **all** the questions.
* Write your answers on the dotted lines unless the question says otherwise.
* Use blue or black ink. Pencil may be used for graphs and diagrams only.
* Read each question carefully and make sure you know what you have to do before starting your answer.
* There is a space after most questions. Use it to do your working. In many questions marks will be given for a correct method even if the answer is incorrect.
* Do not write in the bar code. Do not write in the grey area between the pages.
* **DO NOT** WRITE IN THE AREA **OUTSIDE** THE BOX BORDERING EACH PAGE. ANY WRITING IN THIS AREA WILL NOT BE MARKED.

INFORMATION FOR CANDIDATES

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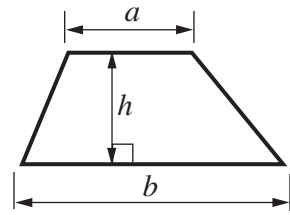* The total number of marks for this Section is 25.

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

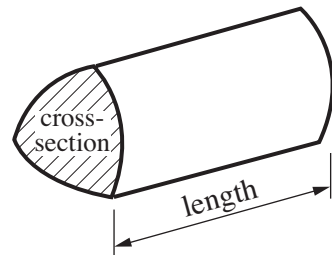| FOR EXAMINER'S USE	
Section A	
Section B	
TOTAL	

This question paper 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

1 **(a)** Find the cube root of 64.

(a) ....[1]

(b) Find the reciprocal of 4.

(b) ....[1]

(c) Simplify, giving your answer as a power of 3.

   (i) $3^6 \times 3^2$

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

   (ii) $3^6 \div 3^2$

(ii) ....[1]

(d) Write $3{\cdot}45 \times 10^4$ as an ordinary number.

(d) ....[1]

5

[Turn over

2 Write down the three inequalities satisfied by the shaded region shown on the diagram below.

....

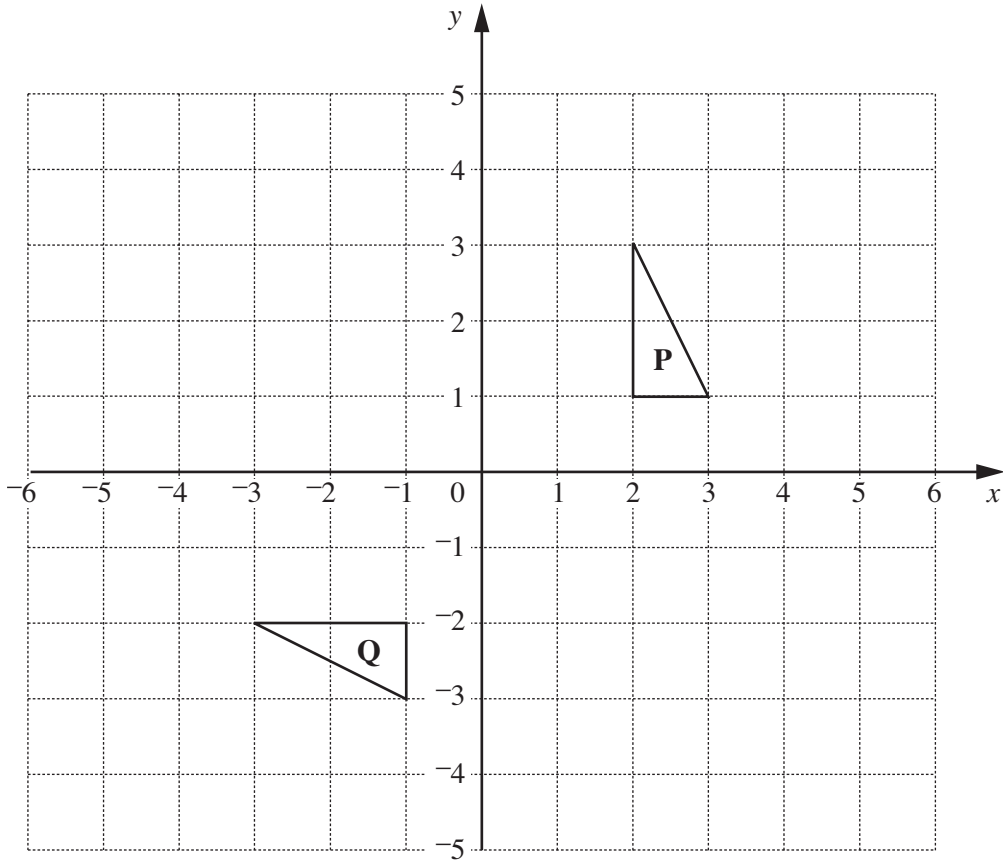...
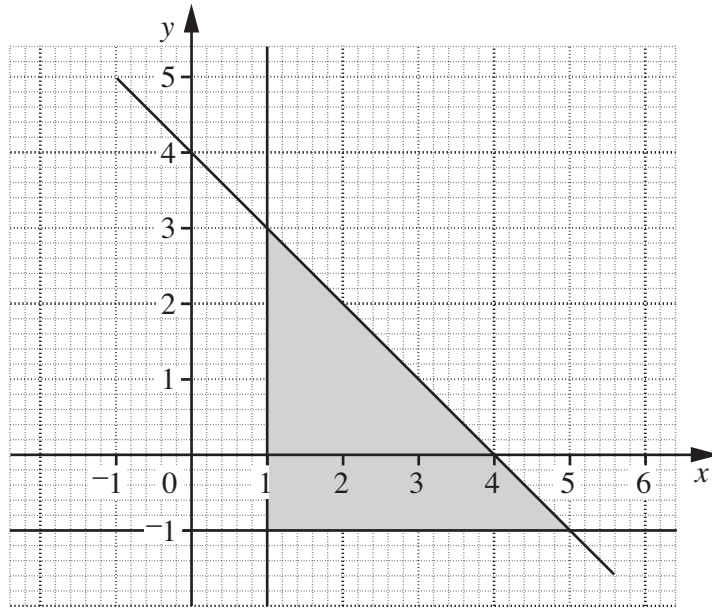
....[3]

3

(a) Describe fully the **single** transformation that maps shape **P** onto shape **Q**.
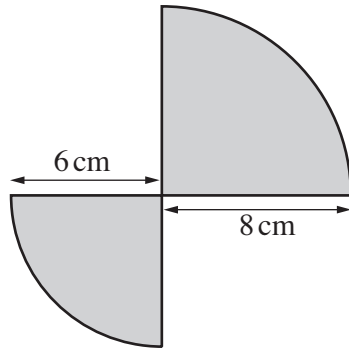
....

....

....[2]

(b) Translate shape **P** by $\begin{pmatrix} 1 \\ -4 \end{pmatrix}$.

Label the image **R**. [2]

4

4

Not to scale

6 cm

8 cm

A logo consists of two quarter circles, one of radius 8 cm and
the other of radius 6 cm.

Find the total area of the logo.
Leave your answer in terms of π.

....................................cm^2 [3]

3

5　In these expressions a and b are lengths.

$$\pi a^2 b \qquad 2\pi a + \pi b \qquad \pi a^2 + 2\pi ab \qquad a^3 + \pi ab$$

Which one of these expressions could represent a volume?
Explain how you decide.

.... because ....

....

....[2]
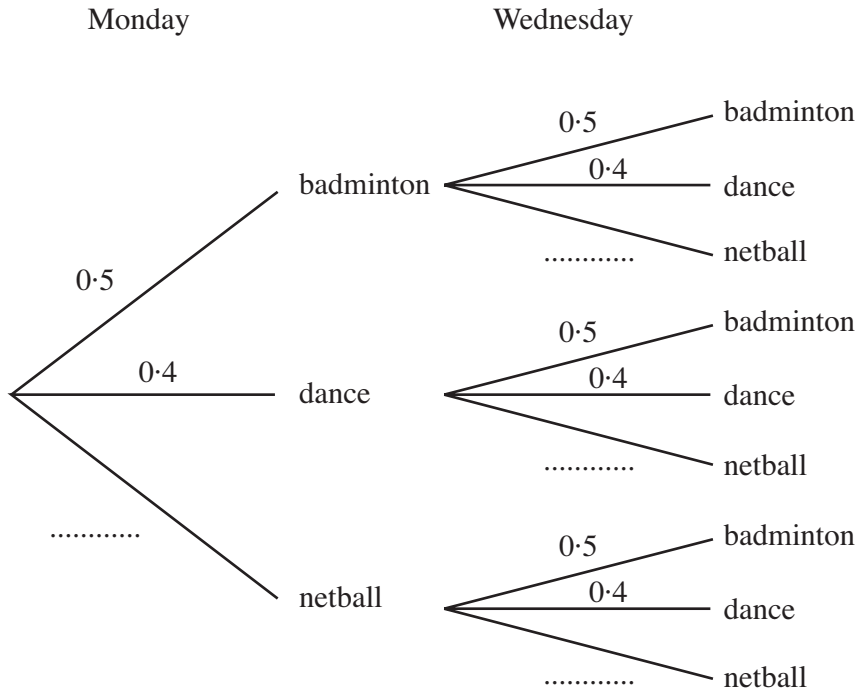
2

6 Sports activities are held after school.
Zaneekia attends these classes on Monday and Wednesday.
She can choose one of badminton, dance or netball on each day.

The probability she chooses badminton is 0·5.
The probability she chooses dance is 0·4.
Assume Zaneekia's choices are independent.

(a) Complete the tree diagram below.

Monday   Wednesday

[1]

(b) What is the probability Zaneekia will choose the same
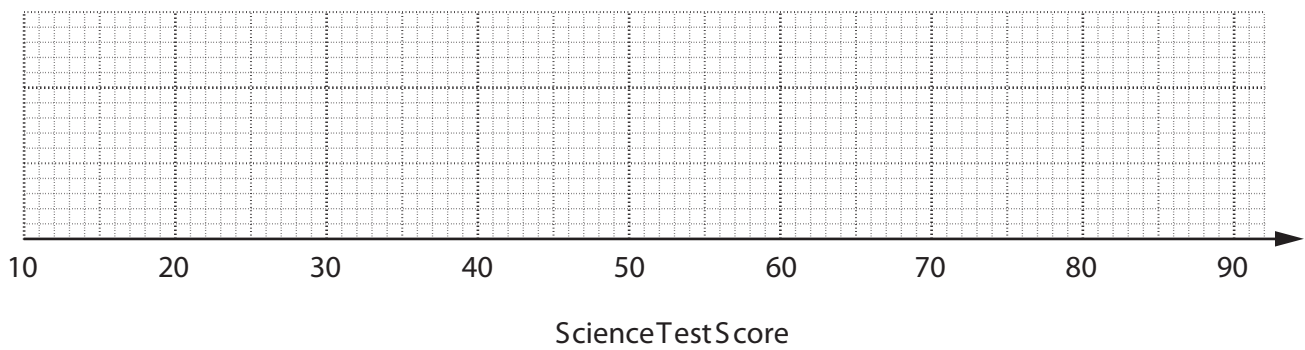sports activity on **both** days?

(b) ....[4]

5

TURN OVER FOR QUESTION 7

7   The scores in a science test are summarised in the table below.

Minimum mark	19
Range	60
Median	60
Lower quartile	42
Interquartile range	28

Use this information to draw a box plot.

Science Test Score

[3]

3