![OCR logo] **OCR**
RECOGNISING ACHIEVEMENT

GENERAL CERTIFICATE OF SECONDARY EDUCATION **M7**^{**2337A**}
MATHEMATICS C (GRADUATED ASSESSMENT)

MODULE M7 – SECTION A

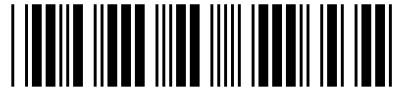**MONDAY 22 JANUARY 2007**   Morning

                                                              Time: 30 minutes

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

Candidate Name	

Centre Number					

Candidate Number				

INSTRUCTIONS TO CANDIDATES

*   Write your name, Centre Number and Candidate Number in the boxes above.
*   Answer **all** the questions.
*   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.
*   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 outside the box bordering each page.
*   WRITE YOUR ANSWER TO EACH QUESTION IN THE SPACE PROVIDED. ANSWERS WRITTEN ELSEWHERE WILL NOT BE MARKED.

INFORMATION FOR CANDIDATES

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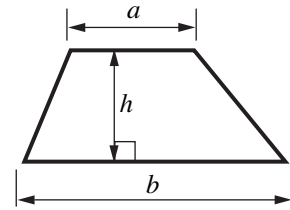*   The total number of marks for this Section is 25.

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

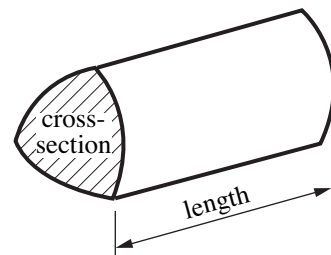| For Examiner's Use	
Section A	
Section B	
Total	

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

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 answers to these calculations are wrong.
Explain why the answers are wrong.
Do **not** do the full calculation.

(a) $23 \cdot 4 \times 1 \cdot 1 = 22 \cdot 74$

....

.... [1]

(b) $\dfrac{54 \cdot 6}{0 \cdot 4} = 21 \cdot 84$

....

.... [1]

<div style="text-align:right">2</div>

2 Solve.

$$7x + 2 = 3x + 12$$

.... [3]

<div style="text-align:right">3</div>

[Turn over

3 This table shows the number of goals conceded and the number of bookings for teams in a local football league.

Team	A	B	C	D	E	F	G	H	I	J	K
Number of goals conceded	40	51	32	65	60	48	50	35	41	43	62
Number of bookings	7	13	12	28	21	14	20	8	14	13	24

(a) The information for the first eight teams is plotted on the scatter diagram below.

Complete the diagram for teams I, J and K.

Number of bookings (y-axis), Number of goals conceded (x-axis)
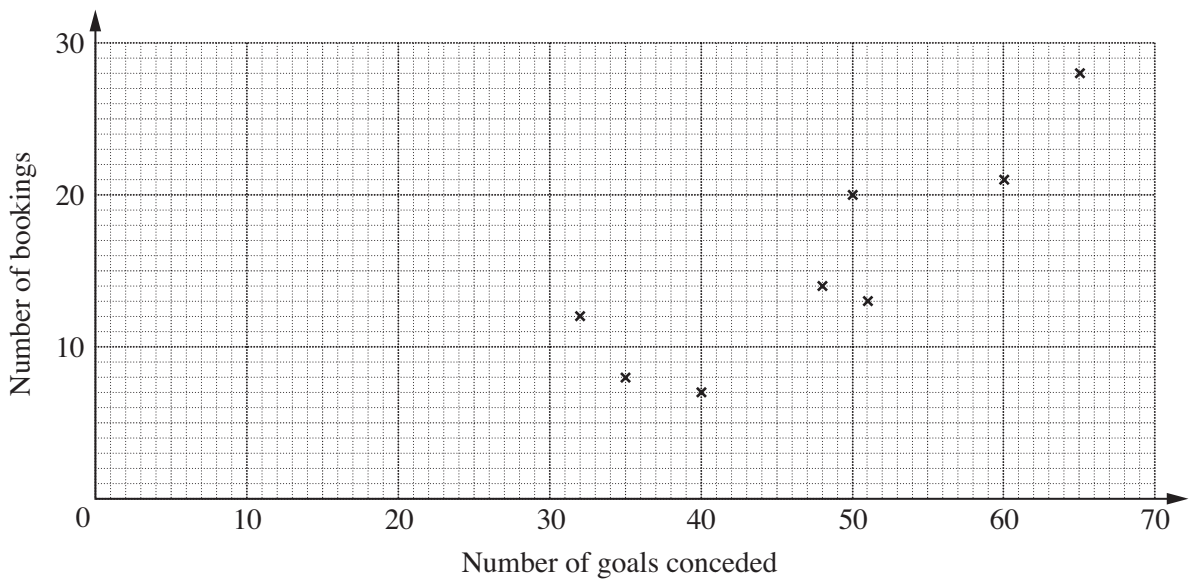
[1]

(b) Describe the correlation.

.... [1]

(c) (i) Draw a line of best fit on your diagram. [1]

(ii) Team L conceded 54 goals.

Use your line to estimate how many bookings team L received.

(c)(ii) .... [1]

4

4 **(a)** The equation of a straight line is $y = 3x + 2$.

Write down

    (i) the gradient of the line,

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

    (ii) the coordinates of the point where the line crosses the y-axis.

(ii)(............. , ...)[1]

(b) Rearrange $y = 3x + 2$ to make x the subject.

(b) .... [2]

4

5 Work out.

    (a) $6 \div \dfrac{3}{4}$

(a)................................. [2]

    (b) $\dfrac{3}{4} + \dfrac{2}{5}$

Write your answer as a mixed number.

(b) .... [3]

5

[Turn over

6   A 15 kg weight and some cans are on a balance.
         Each can weighs x kilograms.
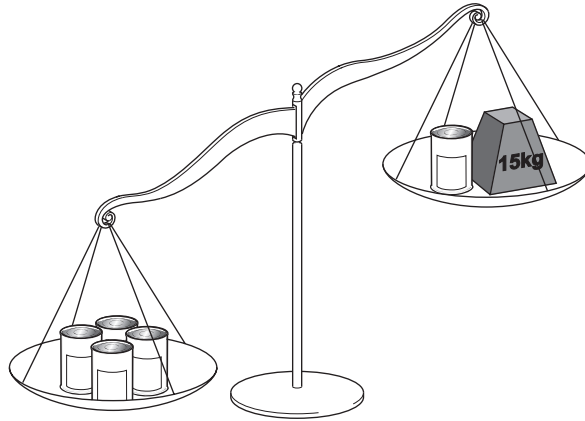
   (a) Ring the inequality below which represents the situation shown in the diagram.
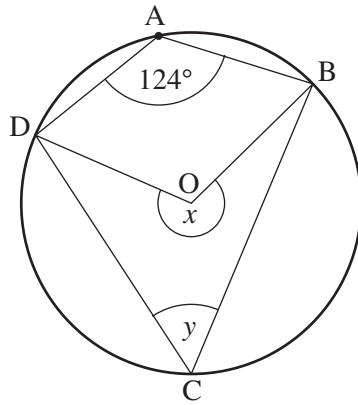
   $4x \leqslant x + 15$ $4x < x + 15$ $4x > x + 15$ $4x \geqslant x + 15$ [1]

   (b) Solve the inequality you have ringed.

   (b) .... [2]

   3

7   A, B, C and D are points on the circumference of a circle, centre O.
Angle DAB = 124°.

Not to scale

(a) Calculate angle *x*.
Give a reason for your answer.

x .... ° because ....

.... [2]

(b) Calculate angle *y*.
Give a reason for your answer.

y .... ° because ....

.... [2]

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