MATHEMATICS C
(Graduated Assessment)
MODULE M7 – SECTION B

1966/2337B

| Wednesday | **28 JUNE 2006** | Morning | 30 minutes |

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

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.

●   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**

●   You are expected to use a calculator in Section B of this paper.

●   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.

●   Section B starts with question 8.

●   Use the π button on your calculator or take π to be 3·142 unless the question says otherwise.

FOR EXAMINER'S USE

| Section B | |

This question paper consists of 7 printed pages and 1 blank page.

[Turn over

Formulae Sheet

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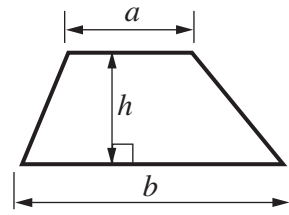
Volume of prism = (area of cross-section) × length
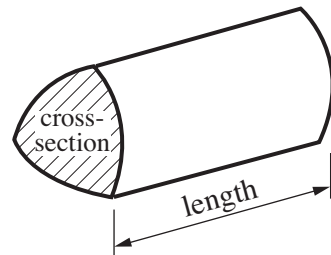
PLEASE DO NOT WRITE ON THIS PAGE

8   Edie drinks 12 litres of water in 5 days.

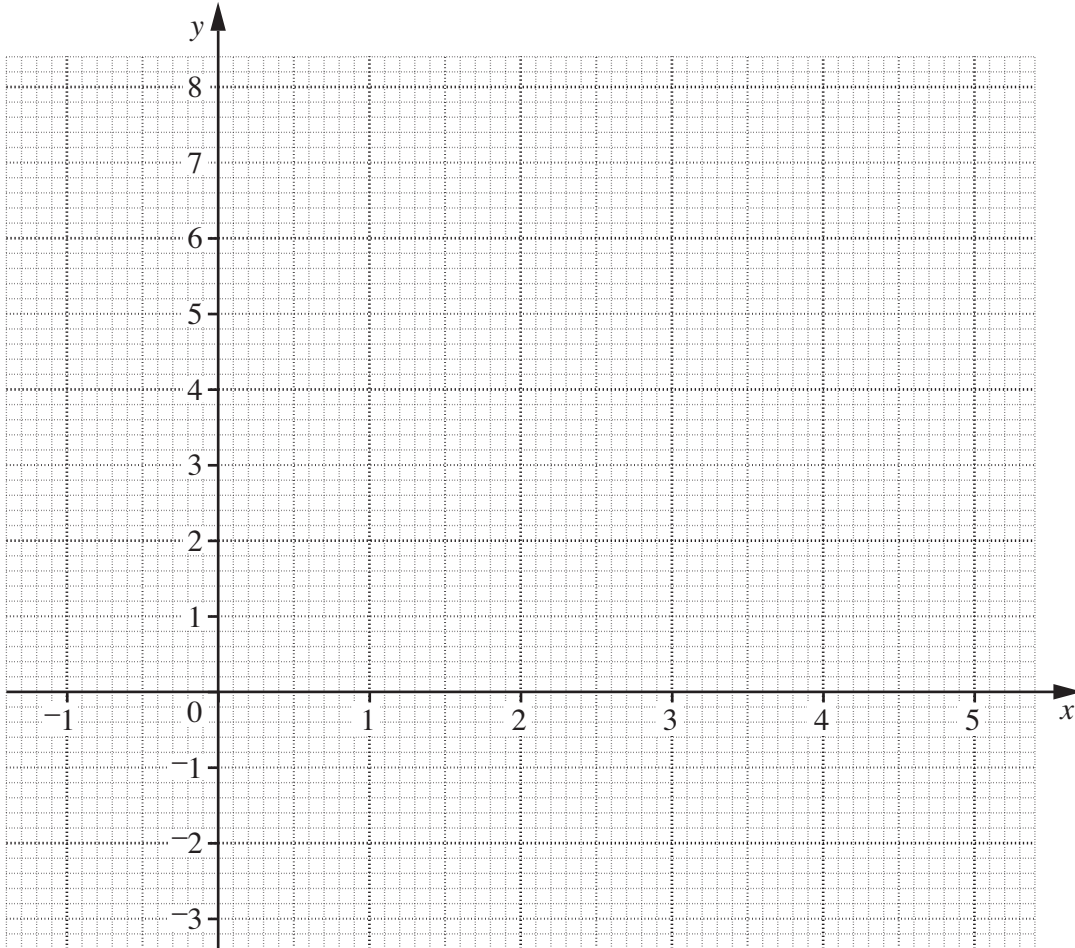At this rate, how much water would she drink in 3 days?

.... litres [2]

2

9 **(a)** Complete this table for $y = 2 + 4x - x^2$ for $x = {}^-1$ to $x = 5$.

x	$^-1$	0	1	2	3	4	5
y	$^-3$	2	5		5	2	$^-3$

[1]

(b) Draw the graph of $y = 2 + 4x - x^2$ for $x = {}^-1$ to $x = 5$.

[2]

(c) Use your graph to find the values of x for which $2 + 4x - x^2 = 0$.

(c) ....[2]

5

10 (a) In a sports club there are 56 women and 64 men.

Write the ratio of women to men in its simplest terms.

(a) .... : ....[1]

(b) The ratio of adults to children in the sports club is 5 : 2.
There are 120 adults in the club.

How many children are there?

(b) ....[2]

(c) One day, 50 people used the sports club.
This table shows a summary of the times they spent there.

Time (h minutes)	Frequency
$0 < h \leqslant 30$	5
$30 < h \leqslant 60$	9
$60 < h \leqslant 90$	20
$90 < h \leqslant 120$	10
$120 < h \leqslant 150$	6

Calculate an estimate of the mean time spent at the club.

(c) ....minutes [4]

7

[Turn over

11 (a) Solve.

    (i) $\dfrac{2x}{5} = 12$

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

    (ii) $2(x - 3) > 7$

(ii) ....[3]

(b) Make x the subject of this formula.

$$y = 4x + 8$$

(b) ....[2]
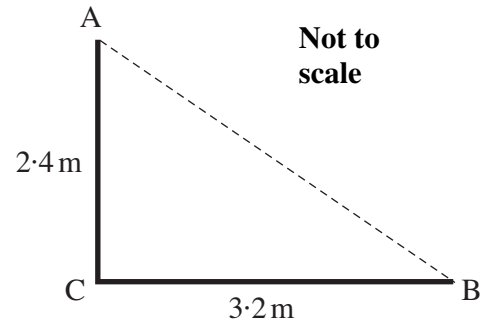
7

12 A builder constructs two walls, CA and CB.
One wall is 2·4 m long and the other is 3·2 m long,
as shown in the diagram.

(a) Calculate the distance AB if angle ACB
is a right angle.

A

Not to scale

2·4 m

C   3·2 m   B

(a) ....m [3]

(b) When the builder measures AB he finds that it is 4·1 m.

Is angle ACB acute, obtuse or a right angle?

Explain how you know.

....

....[1]

4

BLANK PAGE

PLEASE DO NOT WRITE ON THIS PAGE