THIS IS A LEGACY SPECIFICATION

OCR
RECOGNISING ACHIEVEMENT

M6

GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT) B276A
MODULE M6 (SECTION A)

Candidates answer on the question paper.

OCR supplied materials:
None

Other materials required:
- Geometrical instruments
- Tracing paper (optional)

Tuesday 21 June 2011
Afternoon

Duration: 30 minutes

Candidate forename		Candidate surname	

Centre number						Candidate number				

MODIFIED LANGUAGE

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- 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.

INFORMATION FOR CANDIDATES

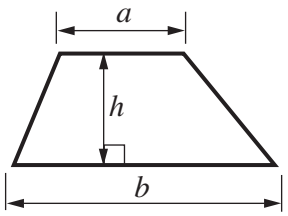
- The number of marks is given in brackets **[ ]** at the end of each question or part question.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

WARNING

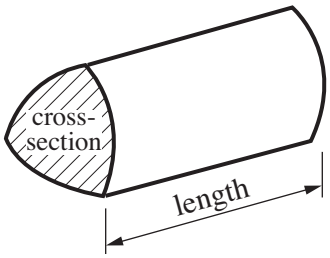
No calculator can be used for Section A of this paper

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 Work out.

(a) $\frac{5}{12} + \frac{1}{4}$

Give your answer as a fraction in its simplest form.

(a) ..... **[3]**

(b) $10 - 6 \div 2$

(b) ..... **[1]**

2 Work out the value of $m^2 + m$ when

(a) $m = 3$,

(a) ..... **[1]**

(b) $m = -5$.

(b) ..... **[2]**

3 34 members are using a health club at 7 o'clock one evening.
This stem and leaf diagram shows their ages, in years.

2	1	3	3	4	5	6	7	7	8	8	
3	0	0	1	2	2	3	6	8	8	9	9
4	0	0	1	1	3	3	6				
5	1	4	5	7							
6	0	3							**Key:**	4 | 0 = 40	

(a) Find

(i) the range,

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

(ii) the median.

(ii) ..... **[2]**

(b) The health club also recorded the ages of the members using the club at 11 o'clock one morning.
The ages of these members had a median of 43.

Explain what the medians tell you about the ages of the members using the club at the two different times.

.....

..... **[1]**

(c) Chaminda uses the treadmill at the health club.
It has four programmes.
He chooses only one of the four programmes.
This table shows the probabilities of him choosing each programme.

Programme	Probability
Fat Burner	0·35
Hill Walking	0·2
Random	0·3
Quick Start	

Complete the table. **[2]**

4 **(a)** Write $7 \times p \times p$ as simply as possible.

(a) ..... **[1]**

(b) Multiply out.

$$4(3x - 5)$$

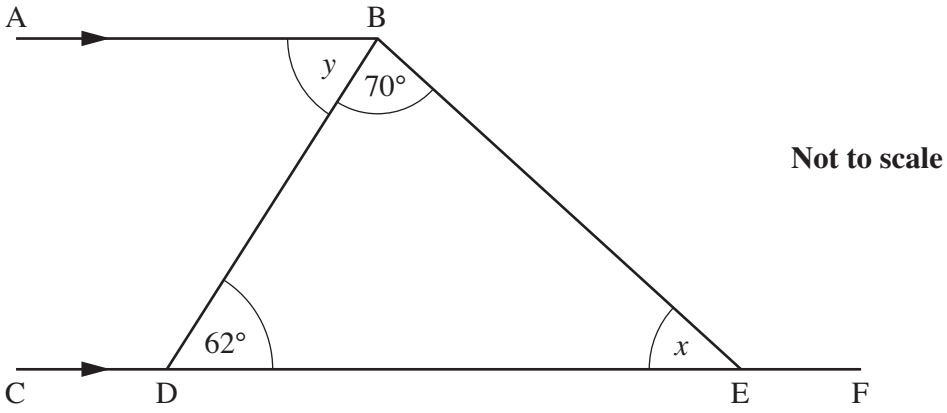
(b) ..... **[1]**

(c) Factorise.

$$x^2 - 7x$$

(c) ..... **[1]**

5



In the diagram, CDEF is a straight line.
AB is parallel to CF.
Angle DBE = 70° and angle BDE = 62°.

(a) Complete this sentence by giving a reason for the answer.

x = 48° because .....

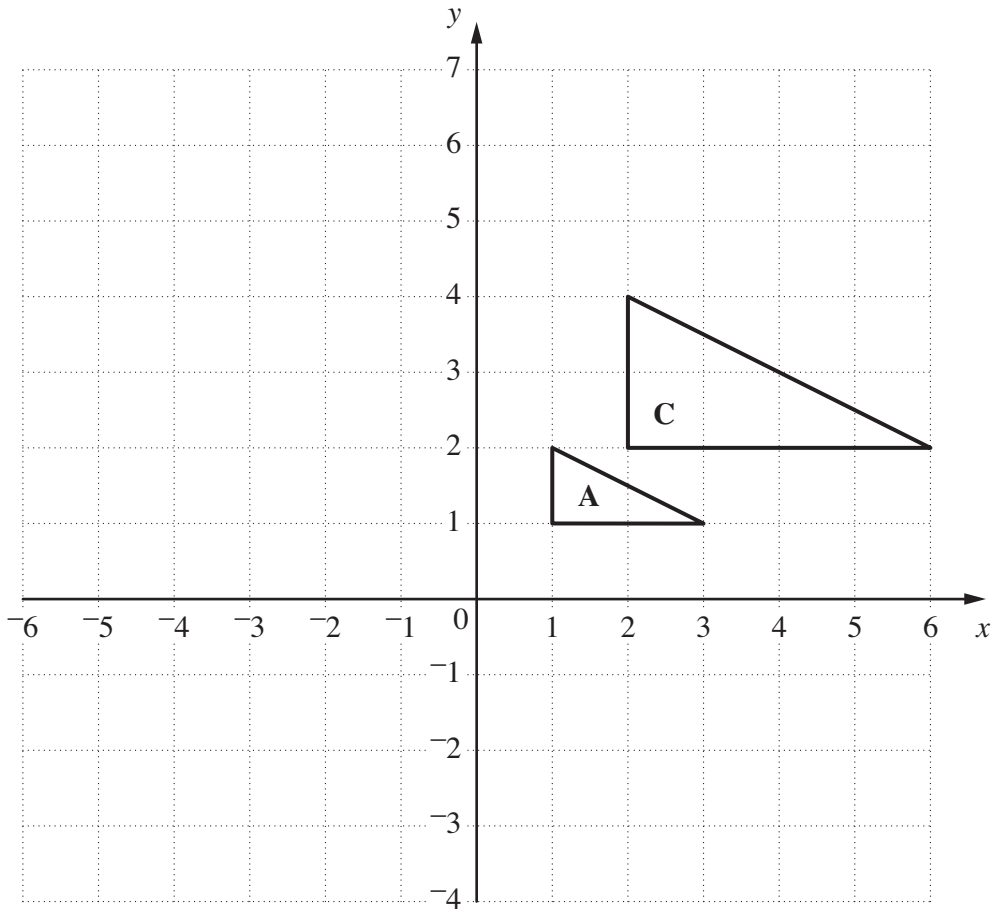
..... **[1]**

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

y = ... ° because .....

..... **[2]**

6



(a) Translate triangle **A** 5 squares left and 4 squares down.
Label the image **B**. **[1]**

(b) Complete this description of the **single** transformation that maps triangle **A** onto triangle **C**.

Enlargement with .....

..... **[2]**

TURN OVER FOR QUESTION 7

7 Solve.

$$8x + 2 = 17 - 2x$$

..... **[3]**