OCR
RECOGNISING ACHIEVEMENT

GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT)

M4 B244A

MODULE M4 – SECTION A

TUESDAY 13 MARCH 2007 Morning

Time: 30 minutes

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

CUP/T34490

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.

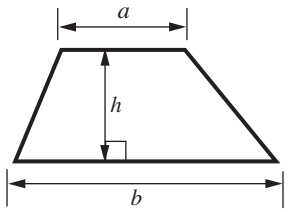
For Examiner's Use	
Section A	
Section B	
Total	

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

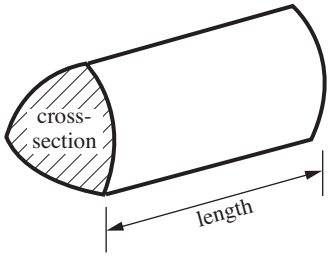
[Turn over

Formulae Sheet

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = (area of cross-section) × length



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1 Some of these letters have rotation symmetry.

EXIST

Put the letters in the correct column of the table.

no rotation symmetry	rotation symmetry order 2	rotation symmetry order 4

[3]

3

2 **(a)** Find the two mystery numbers.

- the product of the numbers is 88
- the difference between the numbers is 3

★ × ✻ = 88

★ − ✻ = 3

(a) ★ = ...

✻ = ... [2]

(b) Find the two mystery **fractions**.

- the sum of the fractions is 1
- one fraction is the same as 0·25

✪ + ✣ = 1

✪ = 0·25

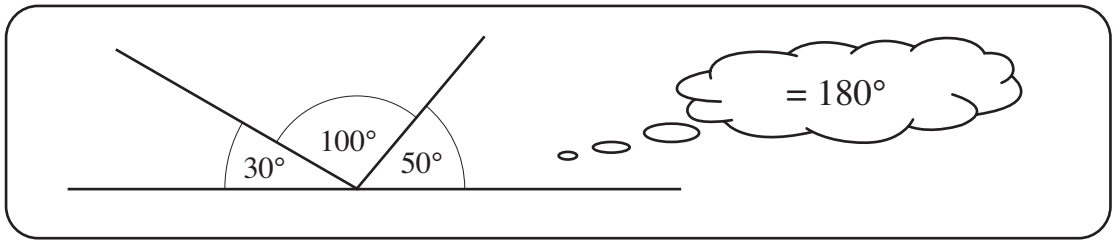
(b) ✪ = ——

✣ = ——

[2]

4

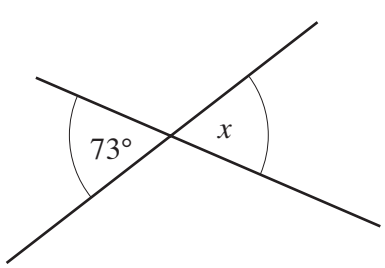
3 **(a)** This diagram shows an angle fact.

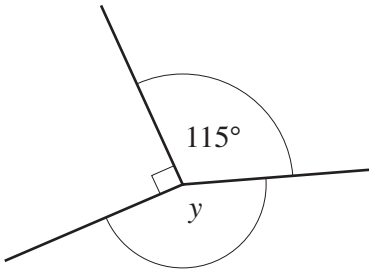


Write down the angle fact this shows.

..... [1]

(b) Find angle x and angle y.
Give a reason for each answer.





Not to scale

x = ...° because .....

y = ...° because ..... [3]

4

4 Complete each of the statements below.
Use numbers from this list.

3 **4** **8** **10** **16** **18** **32**

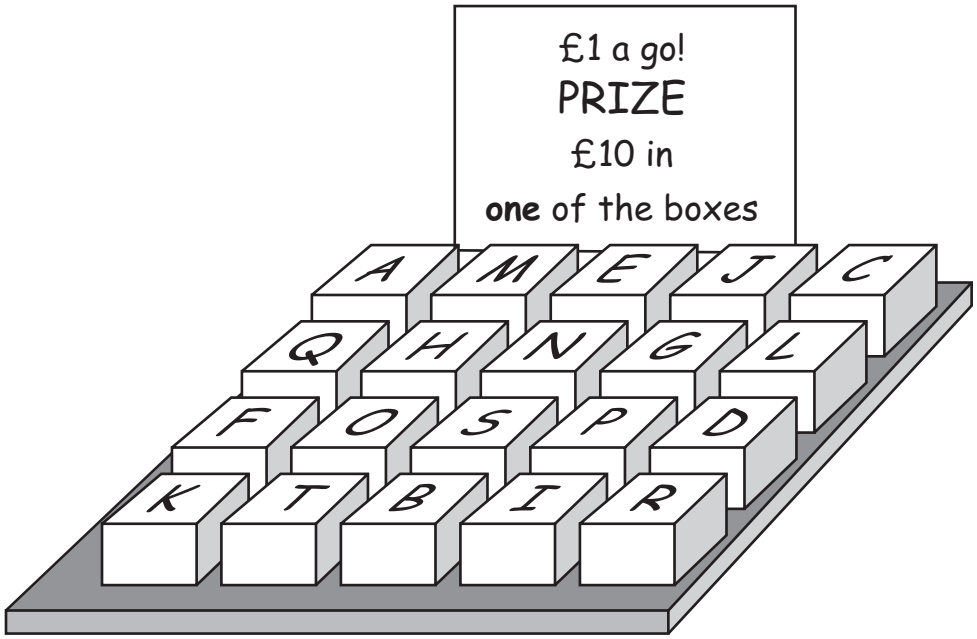
(a) ..... and ..... are a factor pair of 30. [1]

(b) ..... is a multiple of 6. [1]

(c) ..... is a common factor of 12 and 20. [1]

3

5 This is a game at a fair.

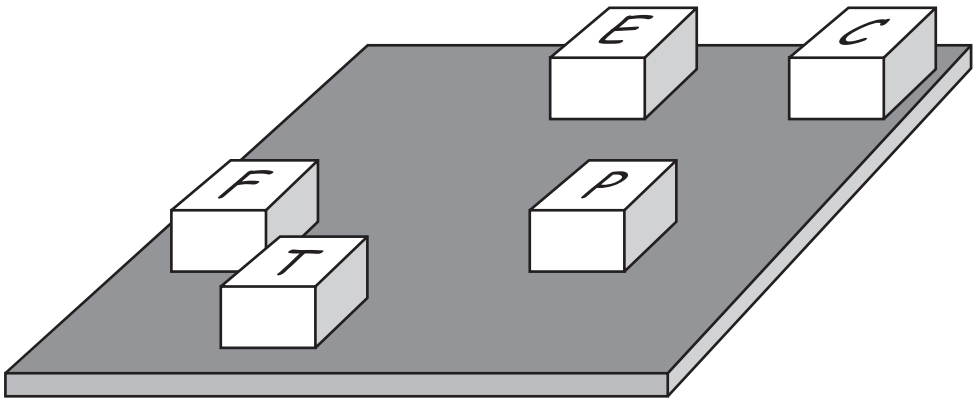


(a) Sue is the first person to choose a box.

What is the probability that she wins the prize?

(a) ..... [2]

(b) Sue comes back later.
The prize has not yet been won.
There are only 5 boxes left.



She says she needs to have 5 more goes to be **certain** that she will win the prize.

Is she right?
Explain your answer.

..... because .....

..... [1]

3

6 **(a)** Mrs. Fletcher wins the jackpot at a bingo hall.
She gives all the prize money to her four grandchildren.
They get £53·25 each.

How much was the prize money altogether?

(a) £ ..... [2]

(b) Mr. Dunkley wins £975 on a lottery.
The £975 is shared equally between his 15 grandchildren.

How much does each grandchild receive?
You must show your working.

(b) £ ..... [3]

5

7 **(a)** Here are the first four terms of a sequence.

3 6 12 24

(i) Write down the next term in the sequence.

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

(ii) Explain how you worked out your answer.

..... [1]

(b) Here is the term-to-term rule for another sequence.

To find the next term

subtract 5

The first term of the sequence is 37.

What is the next term of the sequence?

(b) ..... [1]

3

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