

GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (Graduated Assessment)
INTERMEDIATE TERMINAL PAPER – SECTION B
MONDAY 15 JANUARY 2007

I

2342B

Morning

Time: 1 hour

Candidates answer on the question paper.

Additional materials: Geometrical instruments
Tracing paper (optional)
Pie chart scale (optional)
Scientific or graphical calculator



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

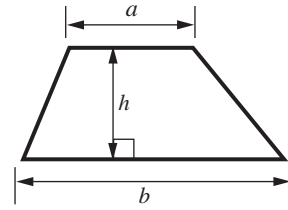
- You are expected to use a calculator in Section B of this paper.
- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this Section is 50.
- Section B starts with question 11.
- Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.

For Examiner's Use	
Section B	

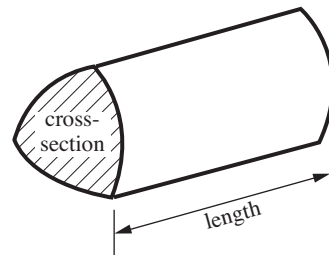
This document consists of **12** printed pages.

Formulae Sheet

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



Volume of prism = (area of cross-section) \times length

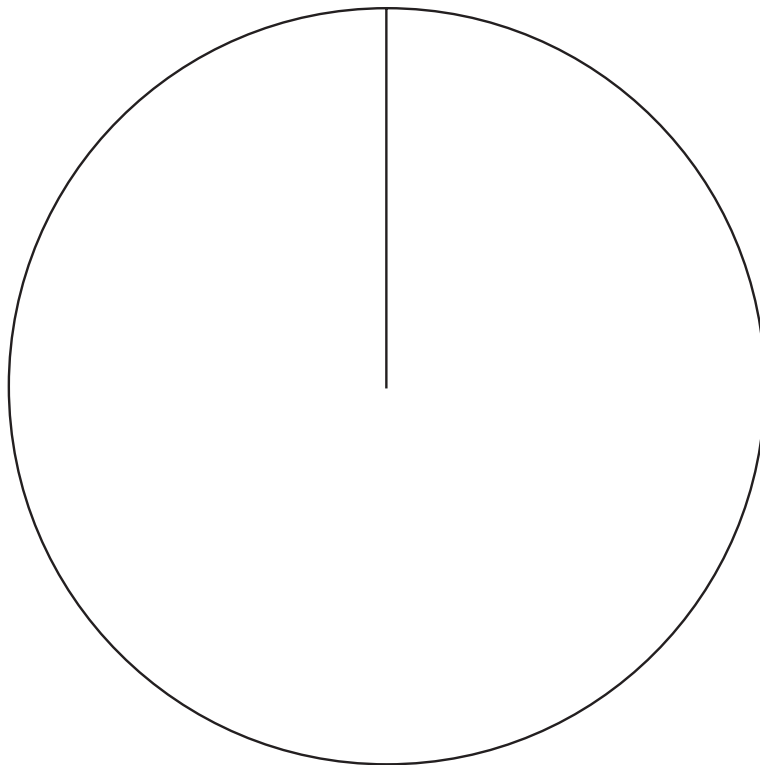


PLEASE DO NOT WRITE ON THIS PAGE

- 11 In Hightown School, 40 candidates took Intermediate GCSE Mathematics. The table shows how many achieved each grade.

Grade	Number of candidates
B	12
C	16
D	8
E	4

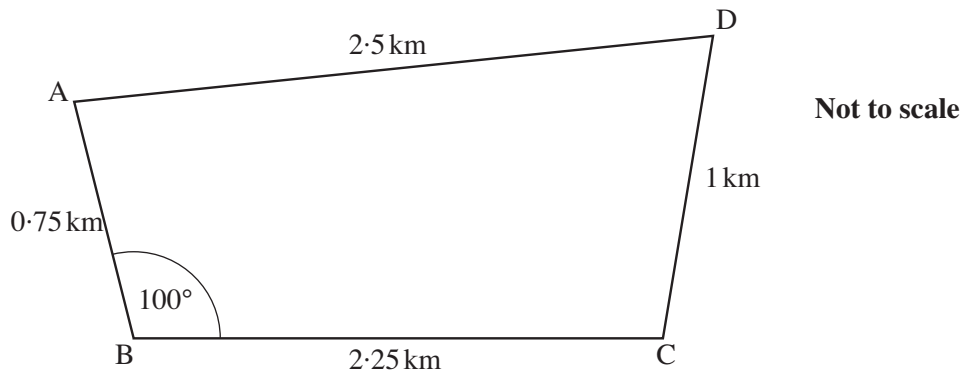
Draw and label a pie chart to illustrate these data.



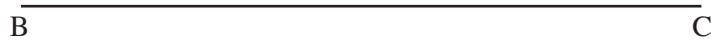
[4]

4

12 The diagram shows a walk ABCD.



- (a) Make an accurate scale drawing of ABCD.
 Use a scale of **4 cm to 1 km**.
 The line BC has been drawn for you.



[4]

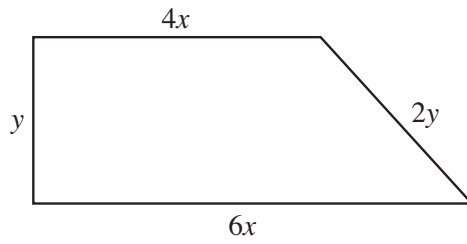
- (b) The distance AB is 0.75 km.
 John walked from A to B in 15 minutes.

Calculate his average speed in kilometres per hour.

(b) km/h [3]

7

13 The diagram shows a trapezium.



Not to scale

(a) Write, as simply as possible, an expression for the perimeter of the trapezium.

(a)..... [2]

(b) The area, A , of the trapezium is $A = 5xy$.

Find the value of A when $x = 5.9$ and $y = 6.8$.

(b) [2]

4	
---	--

14 Calculate.

(a) $\frac{4.9 \times 8.7}{6.5 - 1.85}$

Give your answer correct to one decimal place.

(a)..... [2]

(b) 20^6

Give your answer in standard form.

(b) [2]

4	
---	--

15 (a) In 2004, Oakcroft Council planted 320 acorns.

In 2005, the Council planted 15% more acorns than in 2004.

How many acorns did the Council plant in 2005?

(a)..... [3]

(b) In 2006, the Council planted 420 trees in a new woodland.

Oak, Ash and Beech trees were planted in the ratio 5 : 4 : 3.

How many of each type of tree were planted?

(b) Oak.....

Ash.....

Beech [3]

6

16 (a) Solve.

$$2x - 1 = 6$$

(a)..... [2]

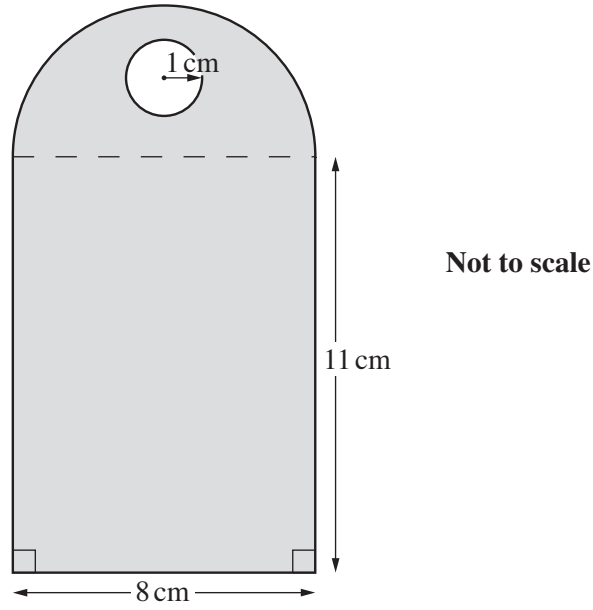
(b) The equation $x^3 + x - 7 = 0$ has a solution between 1 and 2.

Use trial and improvement to find this solution correct to **two** decimal places.

You must show all your trials and their outcomes.

(b) [4]

6



The diagram shows a luggage label.

The label is a rectangle and a semicircle with a circular hole in it.
The **radius** of the circular hole is 1 cm.

Calculate the shaded area.

.....cm² [5]

5

- 18 (a) The n th term of a sequence is given by $n^2 - 5$.

Write down the first three terms of this sequence.

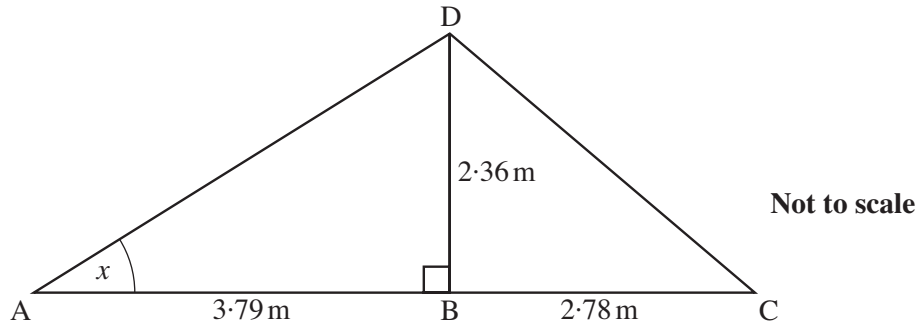
(a),, [2]

- (b) Rearrange $t = n^2 - 5$ to make n the subject.

(b) [2]

4

19



The diagram shows a roof support.

(a) Calculate the length DC.

(a).....m [3]

(b) Calculate angle x .

(b)° [3]

6

PLEASE DO NOT WRITE ON THIS PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (OCR) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

OCR is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.