OCR
RECOGNISING ACHIEVEMENT

B277B

GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT)
MODULE M7 – SECTION B

M7

MONDAY 21 JANUARY 2008

Morning
Time: 30 minutes

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

CUP/T55575

Candidate Forename		Candidate Surname	
Centre Number		Candidate Number	

INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- 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.
- Do **not** write outside the box bordering each page.
- Write your answer to each question in the space provided.

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.
- Section B starts with question 8.
- You are expected to use a calculator in Section B of this paper.
- Use the π button on your calculator or take π to be 3·142 unless the question says otherwise.

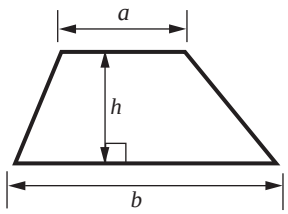
FOR EXAMINER'S USE	
SECTION B	

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

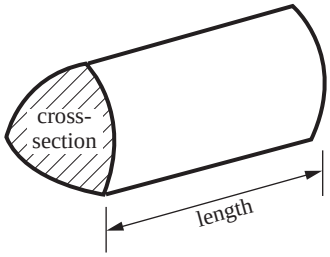
[Turn over

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

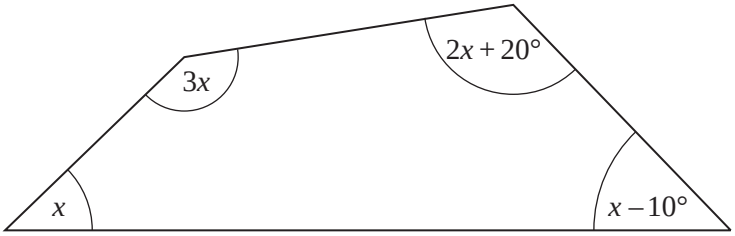
8 A computer costs £650.
This price is reduced by 18%.

Calculate the reduced price of the computer.

£ ..... [3]

3

9 The angles of a quadrilateral are x, $3x$, $2x + 20°$ and $x - 10°$.



Not to scale

(a) The sum of the angles of a quadrilateral is 360°.

Use this information to write down an equation in x.

(a) ..... [1]

(b) Solve your equation to find x.
Hence find the size of the largest angle in the quadrilateral.

(b) x = ... °

largest angle .....° [3]

4

10 Anne is making a crumble.
She mixes flour, butter and sugar in the ratio 8 : 3 : 3.
She uses 200 g of flour.

How much butter will she need to use?

..... g [2]

2

11 Helen drove to Southampton to visit her mother.

At the start of the journey the mileometer showed 41 302 miles.
When she arrived in Southampton it showed 41 382 miles.

Helen started driving at 2.15pm and arrived at 4pm.

Calculate the average speed for her journey.

..... mph [4]

4

12 **Use ruler, compasses and pencil only to answer this question.**
Leave in all your construction lines.

Construct the perpendicular bisector of the line AB.

[2]

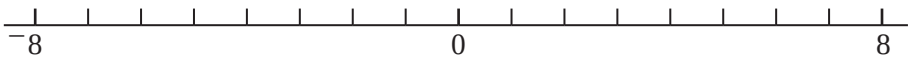
2

13 **(a)** Solve this inequality.

$$\frac{3x + 2}{5} < 4$$

(a) ..... [3]

(b) Represent the solution to the inequality $\frac{3x + 2}{5} < 4$ on the number line below.



[1]

4

14 This table shows the distribution of the times, to the nearest minute, that 50 competitors took to complete a puzzle.

Time (minutes)	Number of competitors (frequency)	Midpoint
1 – 5	4	3
6 – 10	7	8
11 – 15	11	13
16 – 20	20	
21 – 25	7	
26 – 30	1	

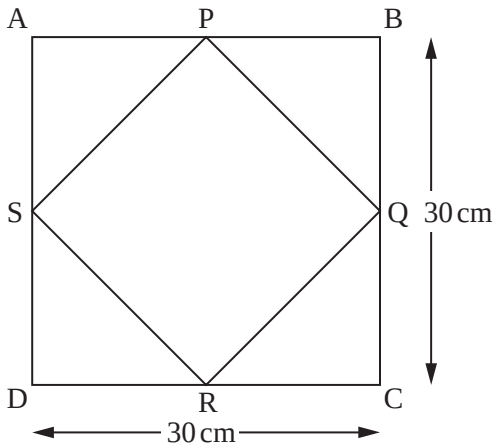
Calculate an estimate of the mean time taken to complete the puzzle.

.....minutes [3]

3

TURN OVER FOR QUESTION 15

15 The square PQRS is made by joining the midpoints of the square ABCD.



The square ABCD has sides of length 30 cm.

Calculate the length of one side of the square PQRS.

.....cm [3]

3