



M7

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

B277A



Candidates answer on the question paper.

OCR supplied materials:
None

Other materials required:

- Geometrical instruments
- Tracing paper (optional)

**Thursday 20 January 2011
Morning**

Duration: 30 minutes



Candidate forename		Candidate surname	
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Centre number							Candidate number				
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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.
- Show your working. Marks may be given for a correct method even if the answer is incorrect.
- 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).
- Answer **all** the questions.
- Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

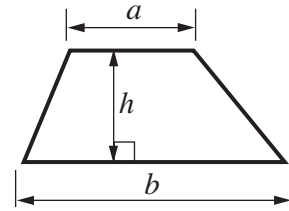
- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

WARNING

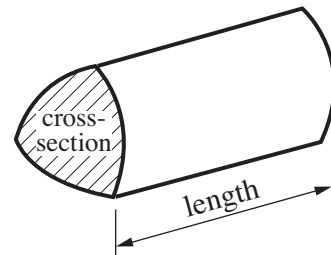
No calculator can be used for Section A of this paper

Formulae Sheet

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

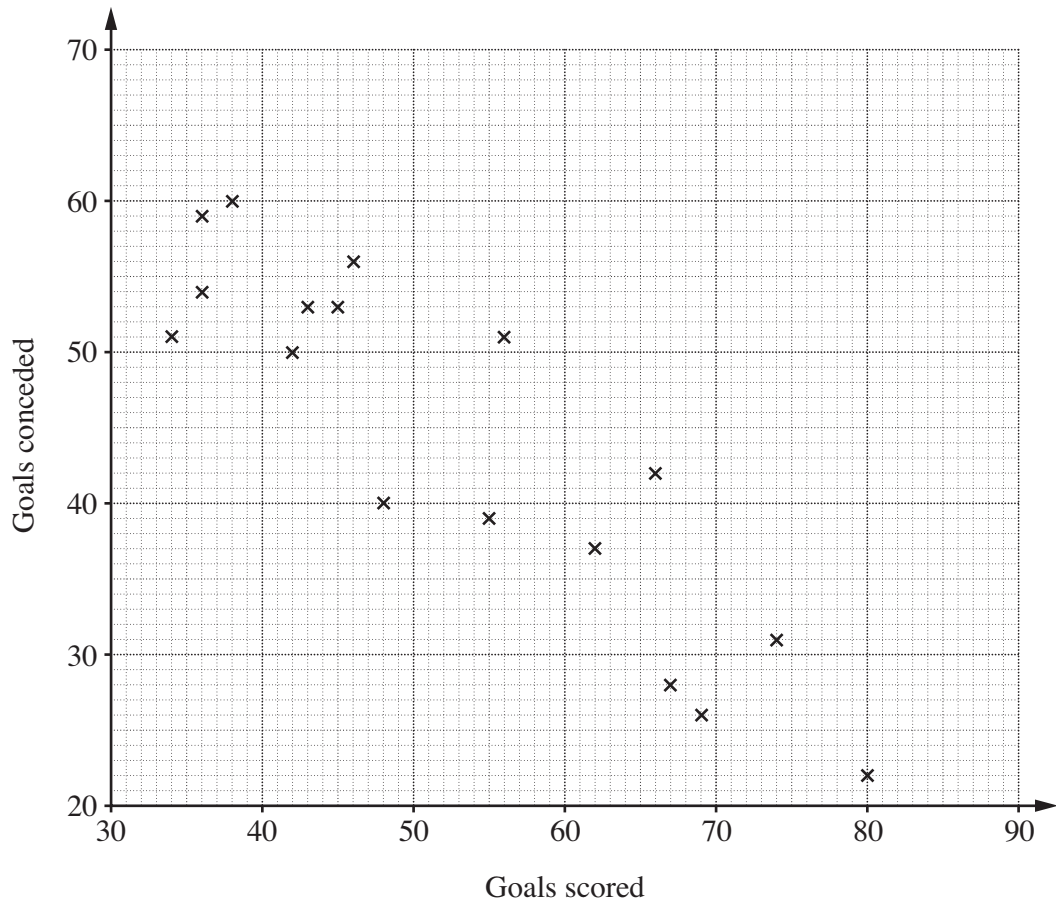


Volume of prism = (area of cross-section) \times length



PLEASE DO NOT WRITE ON THIS PAGE

- 1 The scatter graph shows the numbers of goals scored and the numbers of goals conceded by some football teams in a season.



- (a) What word describes the type of correlation?

(a)..... [1]

- (b) Draw a line of best fit on the scatter graph.

[1]

- (c) Another team scored 50 goals.

Use your line of best fit to estimate the number of goals conceded by this team.

(c)..... [1]

2 (a) What are the two square roots of 25?

(a) and [1]

(b) Write each of the following as a single power of 5.

(i) $5^9 \times 5^3$

(b)(i)..... [1]

(ii) $5^9 \div 5^3$

(ii) [1]

(c) Change $\frac{5}{11}$ to a recurring decimal.

(c)..... [2]

- 3 (a) A power company charges a standing charge of £18 each quarter plus £0.14 for each unit of electricity used.

Write a formula for the cost, £ C , of a quarterly bill for a customer using n units of electricity.

(a)..... [2]

- (b) Another company uses this formula to calculate quarterly bills.

$$C = 0.2n + 15$$

Rearrange this formula to make n the subject.

(b) [2]

- 4 Multiply out.

$$(x + 4)(x - 7)$$

..... [2]

5 Solve.

(a) $\frac{x}{6} = 12$

(a)..... [1]

(b) $11 = 2(2y + 3)$

(b) [3]

- 6 (a) The answers to these calculations are wrong.

Explain how you can tell the answers are wrong.
Do not do the full calculation.

(i) $18.6 \times 1.2 = 15.5$

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

(ii) $\frac{4.88}{0.4} = 122$

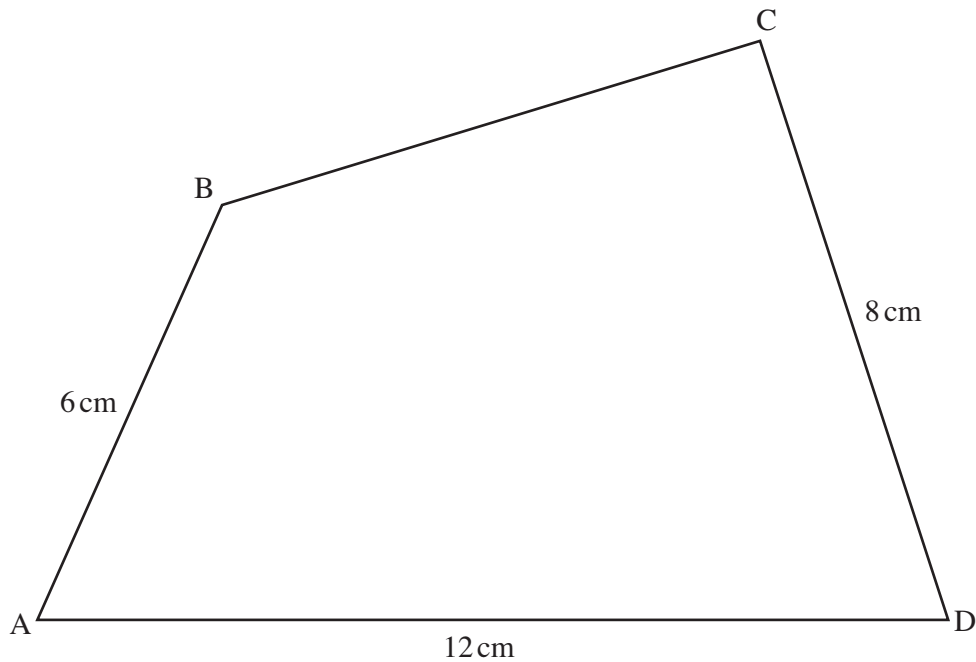
.....
..... [1]

- (b) Write down the reciprocal of $\frac{2}{5}$.

(b) [1]

TURN OVER FOR QUESTION 7

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



Shade the region inside the quadrilateral ABCD which is

- nearer to AB than to AD,
- and
- more than 7 cm from C.

[4]

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