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|-----------------------|--|----------------------|--|
| Candidate<br>forename |  | Candidate<br>surname |  |
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|------------------|--|--|--|--|--|---------------------|--|--|--|--|
| Centre<br>number |  |  |  |  |  | Candidate<br>number |  |  |  |  |
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
GENERAL CERTIFICATE OF SECONDARY EDUCATION**

**B277A**

**MATHEMATICS C  
(GRADUATED ASSESSMENT)**

**MODULE M7 – SECTION A**

**THURSDAY 20 JANUARY 2011: Morning**

**DURATION: 30 minutes**

**SUITABLE FOR VISUALLY IMPAIRED CANDIDATES**

**Candidates answer on the question paper.**

**OCR SUPPLIED MATERIALS:**

**None**

**OTHER MATERIALS REQUIRED:**

**Geometrical instruments**

**Tracing paper (optional)**

**WARNING**

**No calculator can be used for  
Section A of this paper.**

**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS TO CANDIDATES**

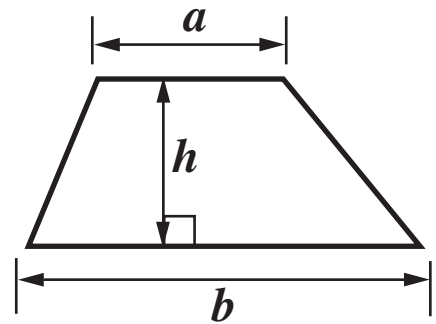
- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**
- **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.**

## **INFORMATION FOR CANDIDATES**

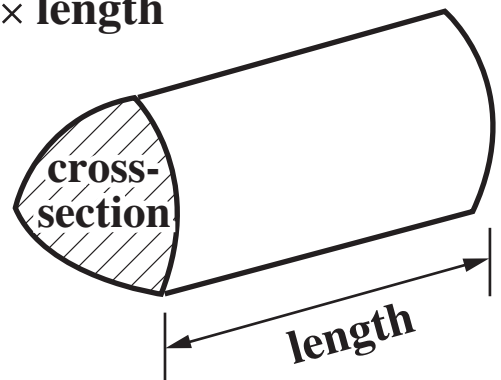
- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **The total number of marks for this Section is 25.**

## Formulae Sheet

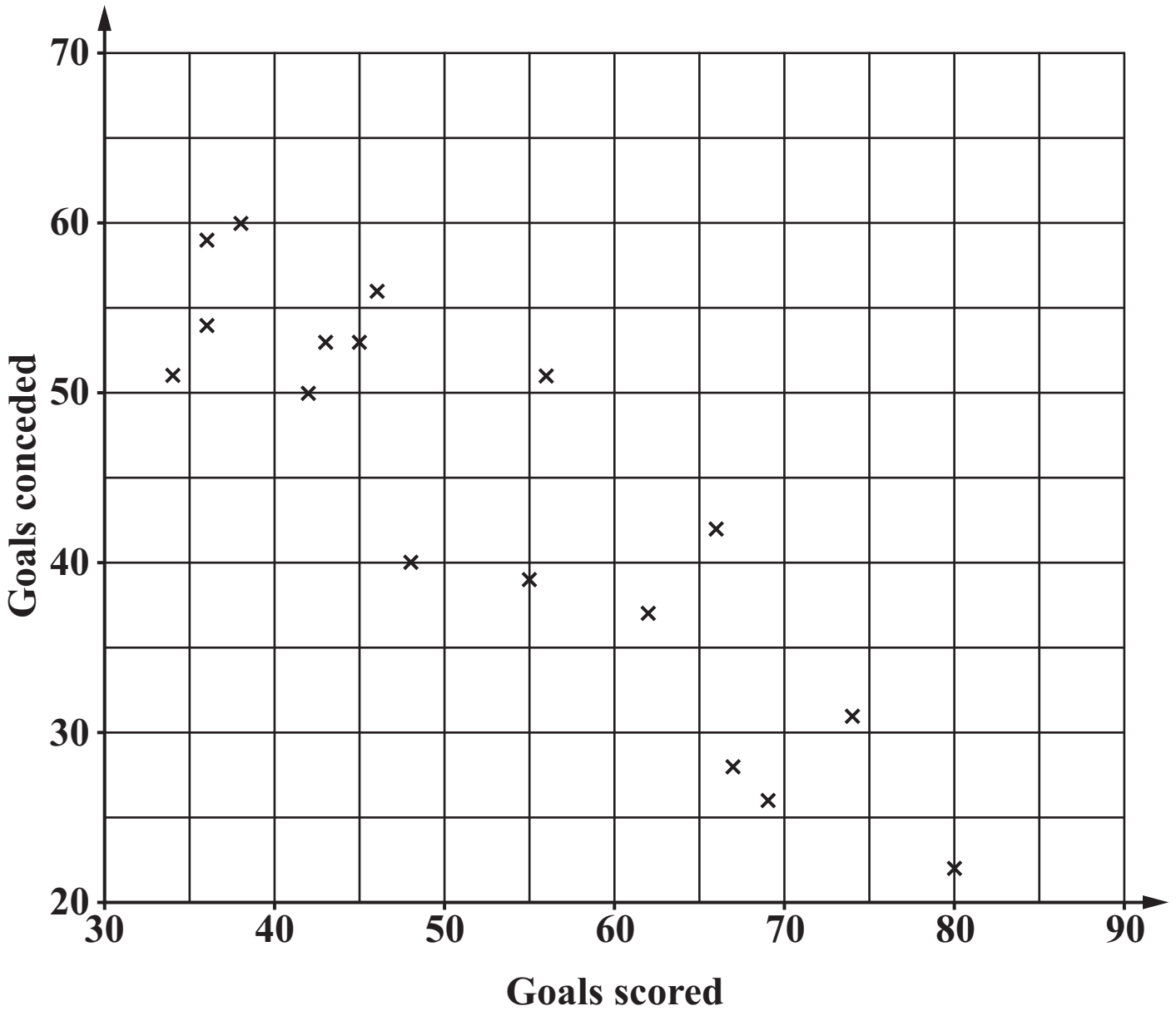
**Area of trapezium =  $\frac{1}{2} (a + b)h$**



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



**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)  $\frac{4.88}{0.4} = 122$**

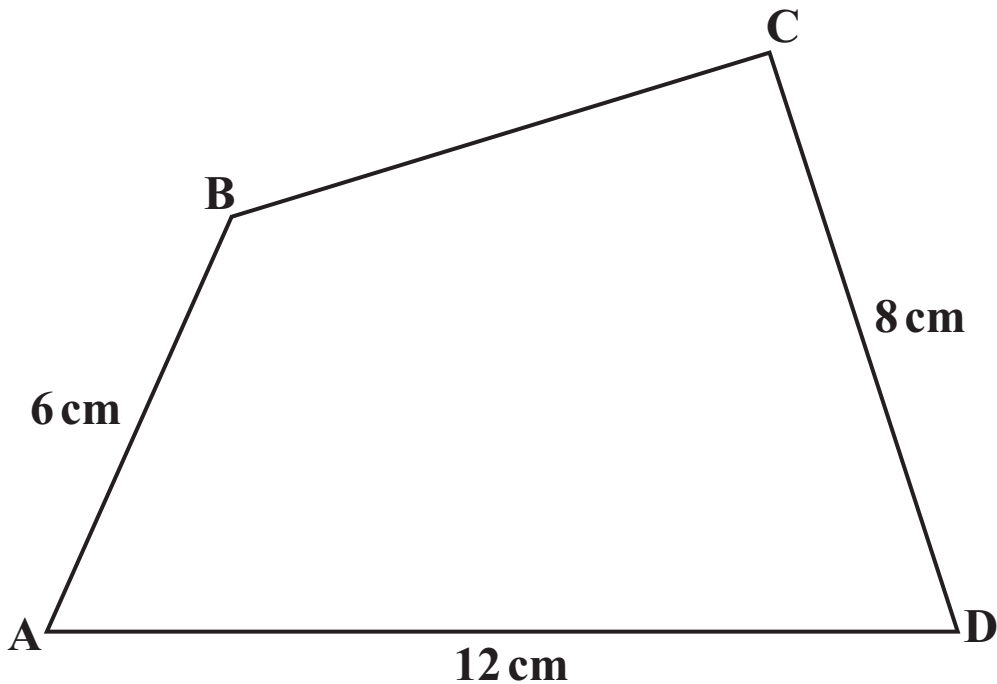
\_\_\_\_\_  
\_\_\_\_\_ [1]

**(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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