

**GENERAL CERTIFICATE OF SECONDARY EDUCATION**

**MATHEMATICS B (MEI)**

**B291B**

Paper 1 Section B  
(Foundation Tier)

Candidates answer on the question paper

**OCR Supplied Materials:**

None

**Other Materials Required:**

- Geometrical instruments
- Scientific or graphical calculator
- Tracing paper (optional)

**Friday 9 January 2009  
Morning**

**Duration: 45 minutes**



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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**INSTRUCTIONS TO CANDIDATES**

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use 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.
- Write your answer to each question in the space provided, however additional paper may be used if necessary.

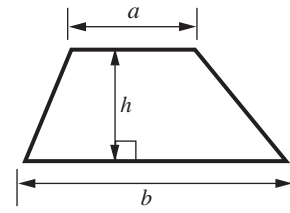
**INFORMATION FOR CANDIDATES**

- The number of marks is given in brackets [ ] at the end of each question or part question.
- Section B starts with question 9.
- You are expected to use a calculator in Section B of this paper.
- Use the  $\pi$  button on your calculator or take  $\pi$  to be 3.142 unless the question says otherwise.
- The total number of marks for this Section is **36**.
- This document consists of **8** pages. Any blank pages are indicated.

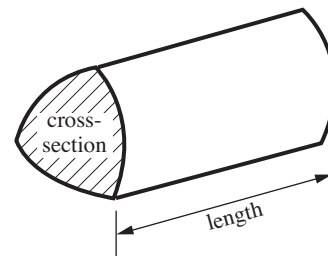
<b>FOR EXAMINER'S USE</b>	
<b>SECTION B</b>	

## Formulae Sheet: Foundation Tier

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

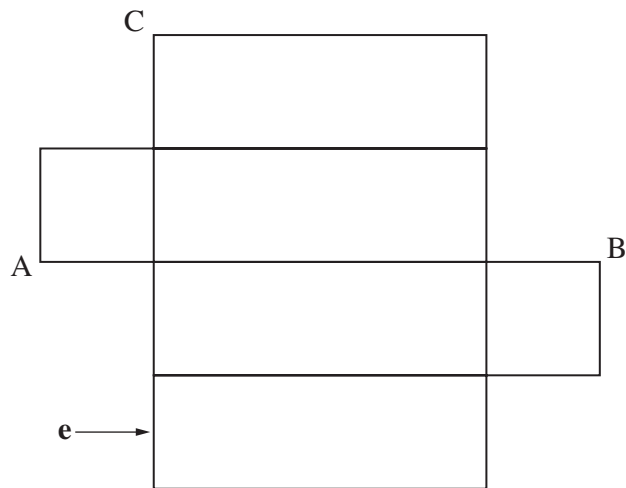


$$\text{Volume of prism} = (\text{area of cross-section}) \times \text{length}$$



**PLEASE DO NOT WRITE ON THIS PAGE**

9 The diagram shows a net.



(a) Measure the length AB on this net.

(a) ..... cm [1]

(b) The net is folded to make a solid.

(i) What is the name of this solid?

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

(ii) Mark with X a vertex which is joined to vertex C.

[1]

(iii) Draw an arrow pointing to the edge which is joined to the edge e.

[1]

- 10 Fill in the table so that the fractions, decimals and percentages in each row are equivalent. The first row has been done for you.

Fraction	Decimal	Percentage
$\frac{17}{100}$	0.17	17%
	0.43	43%
$\frac{1}{4}$		
	0.03	

[5]

- 11 In this question,  $n$  stands for an **even** number.

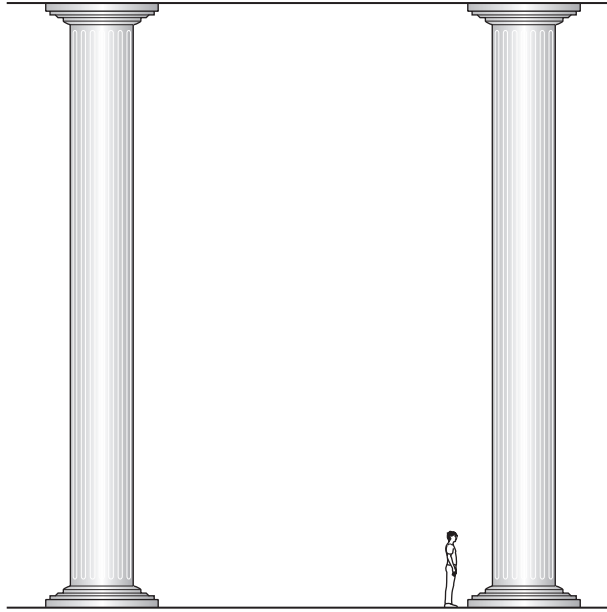
(a) Explain why  $3n$  is always even.

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

(b) Explain why  $2n + 1$  is always odd.

.....  
 ..... [2]

12



The picture shows a man standing beside a pillar.

Estimate the height, in metres, of the pillar.  
Show all your working.

..... m [3]

13 Find the value of  $5a + 8k$  when  $a = 3$  and  $k = 10$ .

..... [2]  
**Turn over**

14 Calculate the following.

(a)  $\frac{1}{0.2 \times 0.25}$

(a) ..... [2]

(b)  $\sqrt{1.5^2 - 0.9^2}$

(b) ..... [2]

15 The table shows the number of televisions in each house in a street of 25 houses.

Number of televisions	Frequency
0	2
1	3
2	2
3	5
4	8
5	4
6	1

(a) What is the most common number of televisions in a house?

(a) ..... [1]

(b) Work out the mean number of televisions per house.

(b) ..... [3]

- 16 (a)** A rectangular table top measures 150 cm by 75 cm.

Find its area.

**(a)** ..... cm<sup>2</sup> [2]

- (b)** A circular table top has radius 60 cm.

Find its area.

**(b)** ..... cm<sup>2</sup> [2]

- (c)** Another table top has area 2.5 m<sup>2</sup>.

Convert 2.5 m<sup>2</sup> to cm<sup>2</sup>.

**(c)** ..... cm<sup>2</sup> [2]

**TURN OVER FOR QUESTIONS 17 AND 18**

17 Write 150 as a product of its prime factors.

..... [2]

18 (a) Solve the equation  $\frac{x}{4} = 5$ .

(a) ..... [1]

(b) Rearrange the formula  $s = 9t + 8$  to make  $t$  the subject.

(b)  $t =$  ..... [2]