

**GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS B (MEI)**

B291B

Paper 1 Section B
(Foundation Tier)

**Monday 18 May 2009
Afternoon**

Duration: 45 minutes

Candidates answer on the question paper

OCR Supplied Materials:

None

Other Materials Required:

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



| | | | |
|--------------------|--|-------------------|--|
| Candidate Forename | | Candidate Surname | |
|--------------------|--|-------------------|--|

| | | | | | | | | | | |
|---------------|--|--|--|--|--|------------------|--|--|--|--|
| Centre Number | | | | | | Candidate Number | | | | |
|---------------|--|--|--|--|--|------------------|--|--|--|--|

MODIFIED LANGUAGE

INSTRUCTIONS TO CANDIDATES

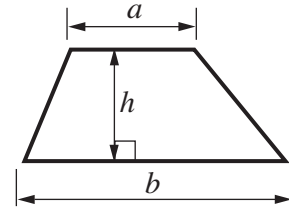
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Show all your working. 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. You may ask for more paper, if you need it.

INFORMATION FOR CANDIDATES

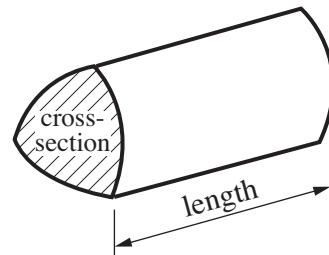
- The number of marks is given in brackets [] at the end of each question or part question.
- Section B starts with question 9.
- You are expected to use a calculator in Section B of this paper.
- Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.
- The total number of marks for this Section is **36**.
- This document consists of **12** pages. Any blank pages are indicated.

Formulae Sheet: Foundation Tier

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



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



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9 (a) Write the number fifteen thousand and seventy three in figures.

(a) [1]

(b) Write the number 3205 in words.

..... [1]

(c) Write 3821 correct to the nearest thousand.

(c) [1]

(d) The chart shows a holiday price table.

All prices are in pounds.

For example, Holiday A costs £182 in May.

| | May | June | July | August |
|-----------|-----|------|------|--------|
| Holiday A | 182 | 206 | 236 | 256 |
| Holiday B | 245 | 252 | 280 | 304 |
| Holiday C | 350 | 406 | 497 | 543 |
| Holiday D | 457 | 529 | 697 | 765 |

(i) What is the price of Holiday C in June?

(d)(i) £..... [1]

(ii) How much more does it cost to take Holiday D in August than in May?

(ii) £..... [1]

- 10 (a) Richard is getting some photographs put into digital form on a disc.

| |
|---|
| Put your photos onto a disc |
| <p>90p for a disc</p> <p>plus</p> <p>33p for each photo</p> |

- (i) Fill in the gaps in the rule for calculating the price in pence.

| |
|--|
| <p>Multiply number of photos by then add</p> |
|--|

[1]

- (ii) How much does it cost for a disc of 40 photos?
Give your answer in pounds and pence.

(a)(ii) £..... [2]

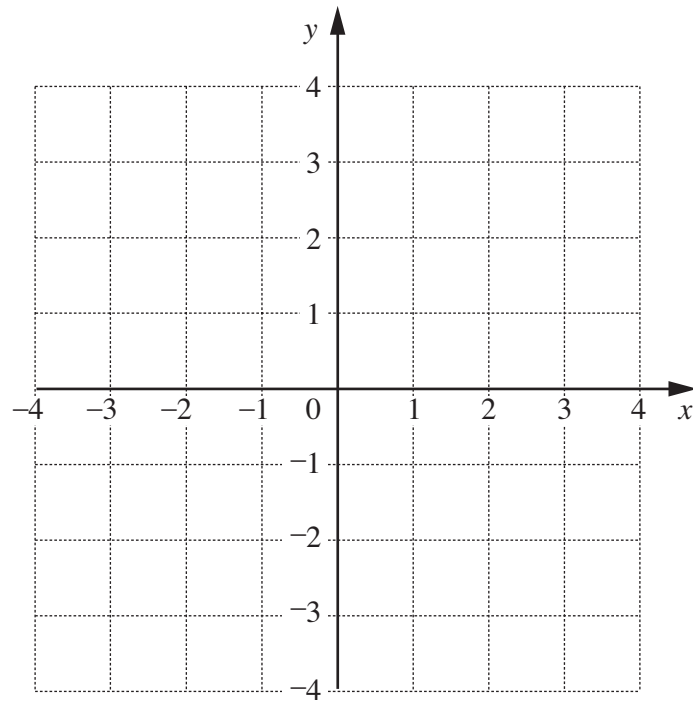
- (b) Richard bought 4 batteries costing 89 p each.

How much change should he receive from £5.00?

(b) £ [2]

11

5



Plot the points with these coordinates.

(a) (2, 1)

[1]

(b) (0, 3)

[1]

12 Lily made a list of the number of films showing at each of nine multi-screen cinemas.

7 6 10 11 8 9 10 8 10

(a) Find the mode, the median and the range for these numbers.

(a) The mode is

The median is

The range is [4]

(b) Lily says that the mean of the numbers is 12.

Without working out the mean, explain why she must be wrong.

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

- 13 Simon correctly works out the perimeter and area of two rectangles.



$$P = 1 + 8 + 1 + 8 = 18 \text{ cm}$$

$$A = 1 \times 8 = 8 \text{ cm}^2$$

$$P = 2 + 3 + 2 + 3 = 10 \text{ cm}$$

$$A = 2 \times 3 = 6 \text{ cm}^2$$

He says that the perimeter of a rectangle is always a larger number than the area.

Find a rectangle which shows that he is wrong.

Calculate the perimeter and area of your rectangle.

Rectanglecm bycm P =cm A =cm² [4]

14 (a) Use your calculator to work these out.

(i) 8.3^3

(a)(i) [1]

(ii) $3.4^2 + \sqrt{5.76}$

(ii) [1]

(b) Emily invests £2500 for three years at 6% per year simple interest.

How much **interest** will she earn?

(b) £ [2]

15 There are 190 students in a year group at a school.
They all go on an outing by coach, with 12 teachers.

(a) Each coach can take 39 passengers.

How many coaches are needed to take all the students and teachers on the outing?

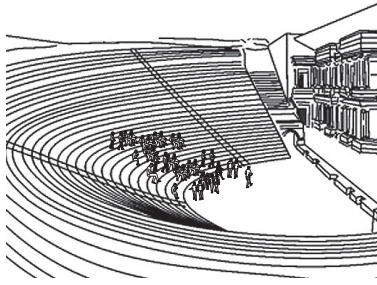
(a) [3]

(b) Each coach costs £350 to hire for the outing.
The teachers do not pay anything.

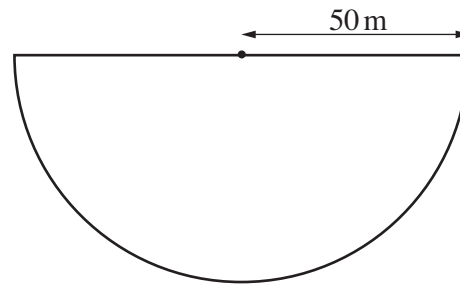
How much should each student pay to just cover the cost of the coaches?

(b) £ [3]

16



9



The stage of a Roman theatre is a semicircle with radius 50 m.

(a) Work out the area of the stage.

(a)m² [2]

(b) Work out the total perimeter of the stage.

(b) m [3]

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