

**GENERAL CERTIFICATE OF SECONDARY EDUCATION**

**MATHEMATICS B (MEI)**

**B291A**

Paper 1 Section A (Foundation Tier)

Candidates answer on the Question Paper

**OCR Supplied Materials:**

None

**Other Materials Required:**

- Geometrical instruments
- Tracing paper (optional)

**Monday 7 June 2010**

**Afternoon**

**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. Additional paper may be used if necessary but you must clearly show your Candidate Number, Centre Number and question number(s).

**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 **36**.
- This document consists of **12** pages. Any blank pages are indicated.

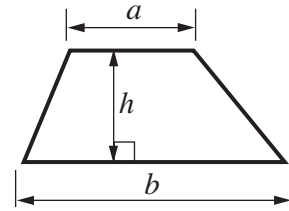
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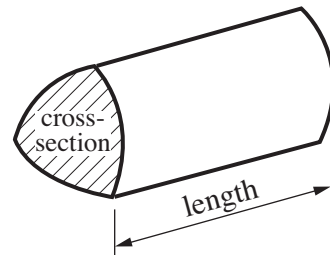
No calculator can be used for Section A of this paper

**Formulae Sheet: Foundation Tier**

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



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

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1 (a) (i) Write 0.59 as a fraction.

(a)(i) ..... [1]

(ii) Write  $\frac{3}{4}$  as a percentage.

(ii) ..... % [1]

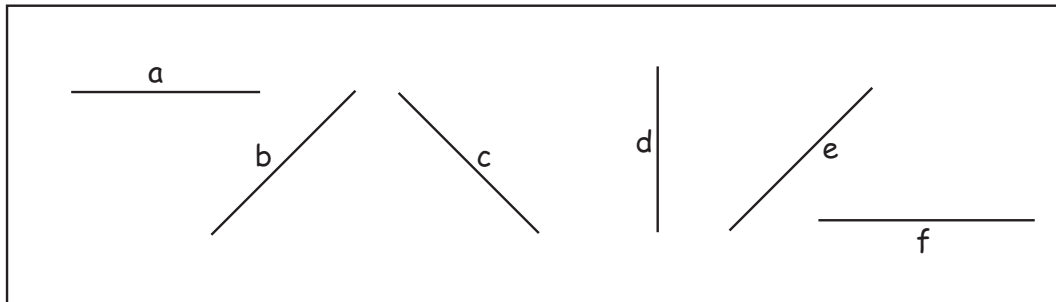
(iii) Write 20% as a fraction.

(iii) ..... [1]

(b) Work out  $\frac{1}{3}$  of 42.

(b) ..... [1]

2 The diagram shows lines, each labelled with a letter.



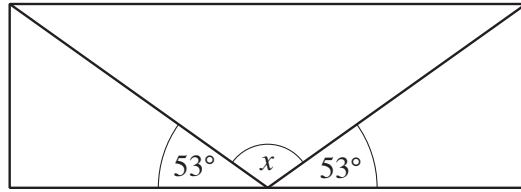
Complete the sentences.

The line which is perpendicular to line **a** is line .....

The line which is parallel to line **b** is line .....

[2]

3



Not to scale

Complete this sentence.

Angle  $x = \dots\dots\dots^\circ$  because  $\dots\dots\dots$   
 $\dots\dots\dots$   
 $\dots\dots\dots$  [2]

4 A hire company uses this formula to work out the cost of hiring an electric drill.

To get the cost in pounds you multiply the number of days by 7 and add 10.

(a) John hires an electric drill for 3 days.

How much will this cost?

(a) £ $\dots\dots\dots$  [1]

(b) Chris spends £45 on the hire of an electric drill.

For how many days did he hire it?

(b)  $\dots\dots\dots$  days [2]

- 5 (a) Use numbers from this list to complete the sentences below.

6    7    8    16    27    28    30

..... is a square number.

..... is a multiple of 5.

..... is a factor of 14.

[3]

- (b) James says that the cube of 2 is  $2 \times 3$  which is 6.

Explain why he is wrong.

..... [1]

- 6 (a) Simplify this expression.

$$3a - 2a + 6a$$

(a) ..... [1]

- (b) Solve these equations.

(i)  $x - 5 = 11$

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

(ii)  $7x + 3 = 24$

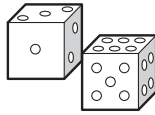
(ii) ..... [2]

- (c) Multiply out.

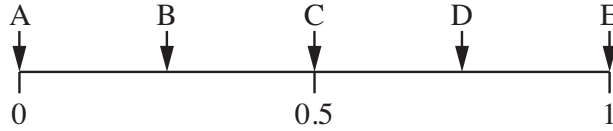
$$3(a + 5)$$

(c) ..... [1]

7 (a) Tara throws two fair dice. The total is found by adding the two scores together.



Here is a probability scale.



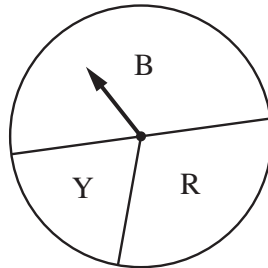
(i) Which arrow shows the probability that the total is 13?

(a)(i) ..... [1]

(ii) Which arrow shows the probability that the total is more than 1?

(ii) ..... [1]

(b) Samira has a spinner with red, blue and yellow sections.



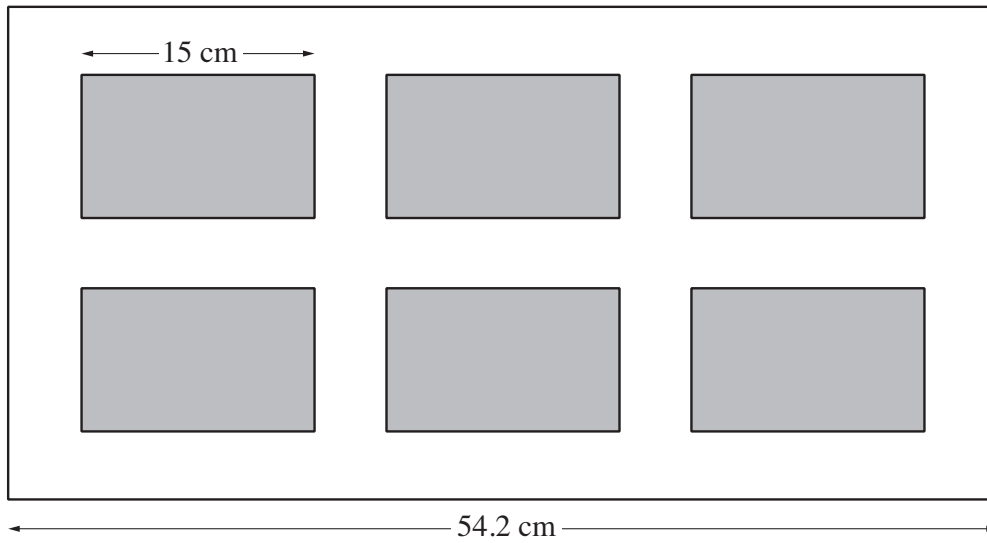
The probabilities of the arrow landing on red or on blue are shown in the table.

Red	Blue	Yellow
0.3	0.5	

Complete the table to show the probability that the arrow will land on yellow.

[2]

Not to scale



The diagram shows six postcards, each 15 cm long, placed on a piece of white card 54.2 cm long. All the strips of white card which are showing are the same width.

(a) What is the width of a white strip?

(a) ..... cm [3]

(b) Each postcard is 10.3 cm high.

What is the total height of the piece of white card?

(b) ..... cm [2]

9 300 g of pastry mix makes 50 cheese straws.

(a) Mike wants to make 125 cheese straws for a party.

How many grams of pastry mix will Mike need to make 125 cheese straws?

(a) ..... g [2]

(b) Sarah has 240 g of pastry mix.

How many cheese straws can Sarah make?

(b) ..... [2]



10 (a) **Estimate** the value of  $\frac{211 \times 39}{82}$ .

Show your working.

(a) ..... [2]

(b) You are given that  $71 \times 453 = 32163$ .

Use this calculation to work out the following.

$$710 \times 4.53$$

(b) ..... [1]

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**11**  
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