Candidate forename		Candidate surname	

Centre number						Candidate number				

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GENERAL CERTIFICATE OF SECONDARY EDUCATION

B291B

MATHEMATICS B (MEI)

Paper 1 Section B (Foundation Tier)

TUESDAY 11 JANUARY 2011: Morning
DURATION: 45 minutes

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

Candidates answer on the question paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Geometrical instruments
Scientific or graphical calculator
Tracing paper (optional)

READ INSTRUCTIONS OVERLEAF

DC (AC/CGW) 11MEP01066 39743/1
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INSTRUCTIONS TO CANDIDATES

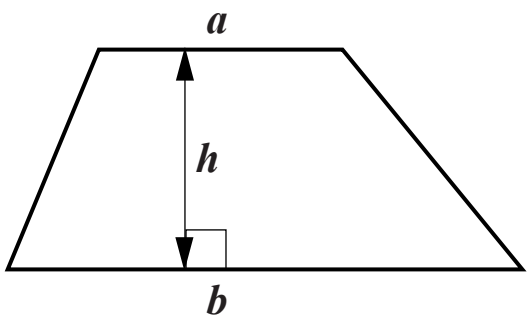
- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**
- **Show all your working. Marks may be given for a correct method even if the answer is incorrect.**
- **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.**
- **Section B starts with question 10**
- **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**

Formulae Sheet : Foundation Tier

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

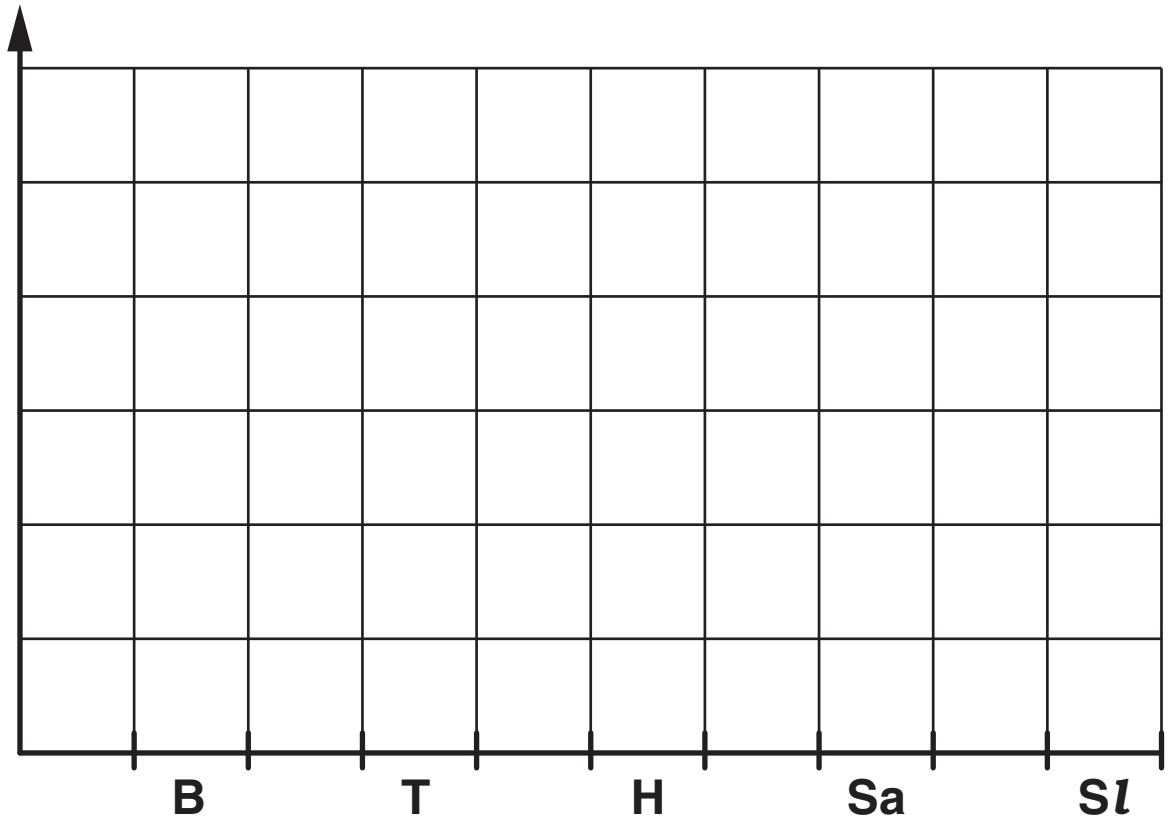


Volume of prism = (area of cross-section) × length

10 Evie sorts out her shoes, dividing them into different types. Her results are shown in the table below.

Type of shoe	Number of pairs
Boots	2
Trainers	1
High heels	3
Sandals	4
Slippers	1

Use the grid below to draw a bar chart to show this information.
Make sure you label the vertical axis. [3 marks]



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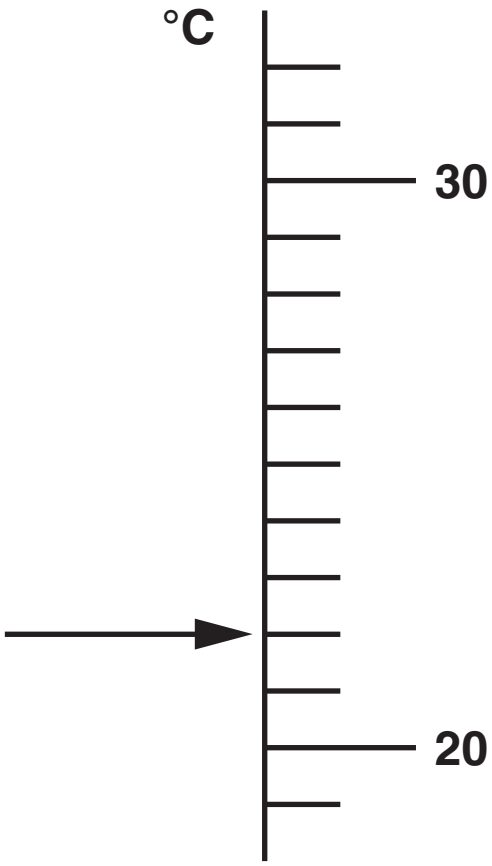
11 (a) (i) Look at the temperature scale below.

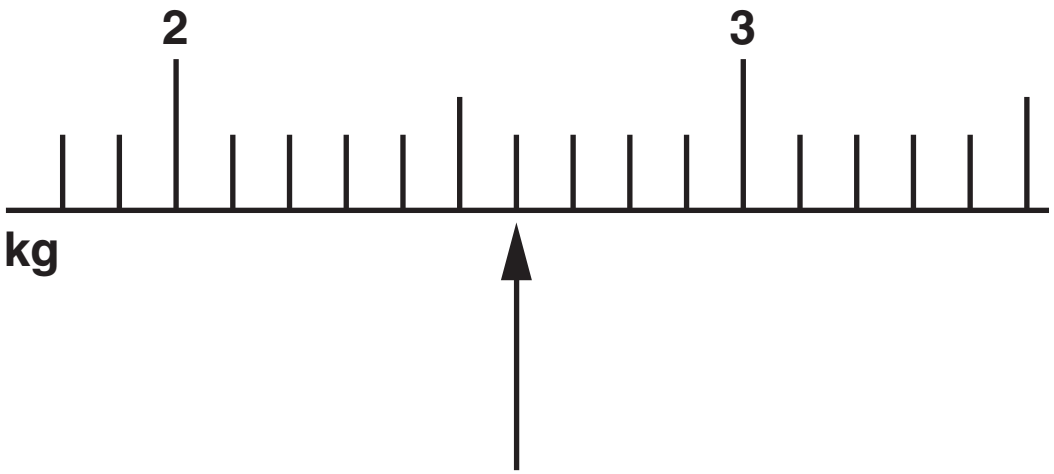


What temperature is shown on the scale [1 mark]

_____ ºC

(ii) Look at the scale below.

It shows weight in kilograms.



What weight is shown by the arrow? [1 mark]

_____ kg

(b) The METRIC UNIT used for measuring the thickness of glass is millimetres.

What would be the best METRIC UNIT to use for measuring

(i) the distance from London to Cambridge [1 mark]

_____

(ii) areas of carpet [1 mark]

_____

(iii) the mass of a hen's egg [1 mark]

_____

12 For a train journey an adult ticket costs £15.
A child ticket is half price.

(a) Nick buys two adult tickets and three child tickets for this journey.

What is the total cost of the five tickets? [3 marks]

£_____

(b) With a railcard the normal cost of an adult ticket is reduced by $\frac{1}{3}$
and the normal cost of a child ticket is reduced by 60%

Liz uses her railcard to buy one adult ticket and one child ticket for the same journey.

What is the total cost of the two tickets? [3 marks]

£_____

13 Seven friends compare the amount of money they each spent on their Saturday entertainment.
The amounts in pounds are shown below.

20·50 3·75 12·00 4·60 17·25 2·50 15·00

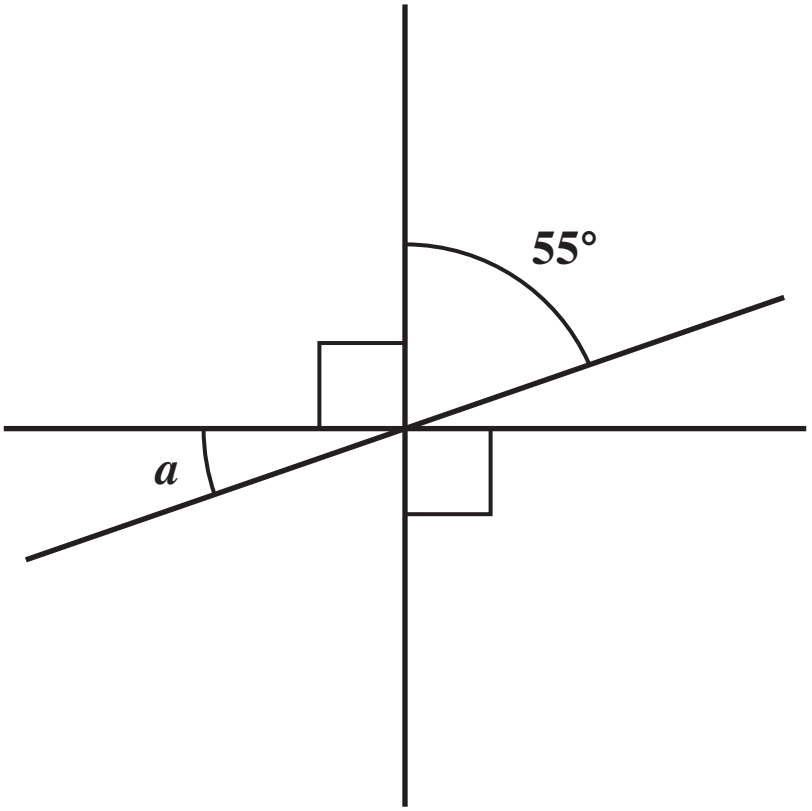
(a) What is the range of the amounts spent? [1 mark]

£_____

(b) What is the mean amount spent? [3 marks]

£_____

14 (a) The diagram below shows three straight lines intersecting at a point.
It is not to scale.
Two of the lines intersect at right angles.

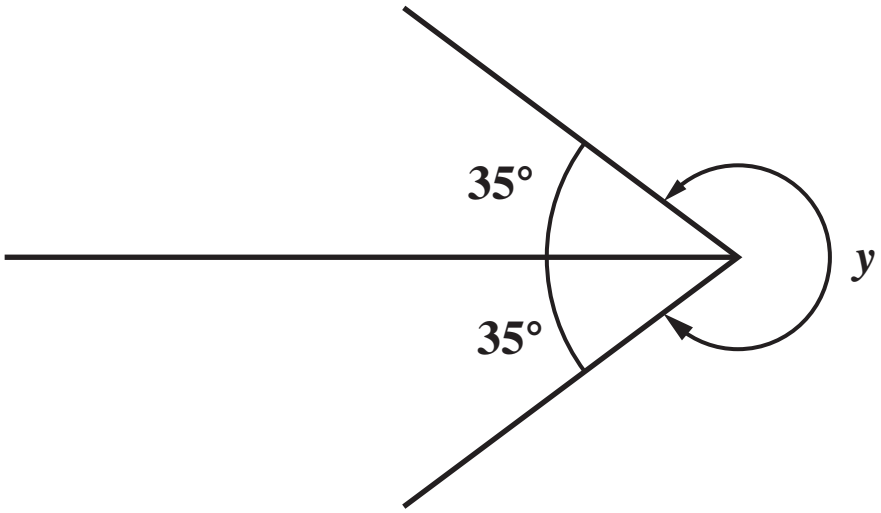


Work out angle *a*
Give a reason for the calculation you used. [2 marks]

Angle *a* = _____°

Reason _____

(b) Look at the diagram below.
It is not to scale.



Work out angle *y*
[2 marks]

_____ °

15 (a) Simplify the expressions below.

(i) $3a + 2a + 4a$
[1 mark]

_____

(ii) $5w - x + 2w - 3x$
[2 marks]

_____

(b) Solve the equations below.

(i) $10x = 25$
[1 mark]

_____

(ii) $x - 3 = 8$

[1 mark]

_____

(iii) $3x - 7 = 11$

[2 marks]

_____

16 Fred and Jo each own an orchard in which they have a number of apple trees.
Last year they recorded the numbers of apples picked from each tree.
The data are summarised in the stem and leaf diagrams below.

Key 4 | 5 means 45

Fred

3	9
4	5
5	
6	6 7 7 8
7	2 3 4 6 8 8 9
8	7 8

Key 4 | 2 means 42

Jo

3	6
4	2 3 4
5	3 6 8
6	3 5 7
7	4 5
8	

(a) Work out the median number of apples for each.
[2 marks]

Fred _____

Jo _____

(b) Make two comparisons between the distributions.
[2 marks]

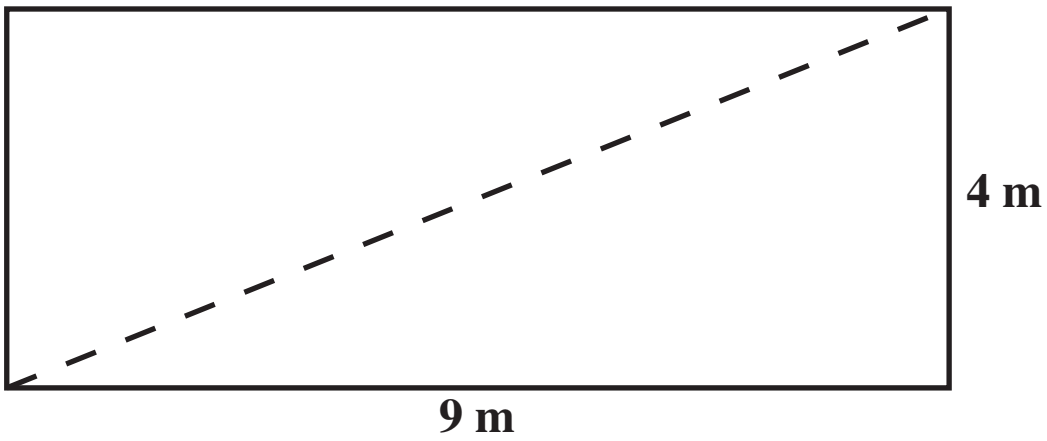
1. _____

_____

2. _____

_____

17 Look at the diagram below.
It is not to scale.



Dan's rectangular flower bed measures 9 metres by 4 metres.
A fence, shown dotted, divides the bed into two sections.
What is the length of the fence? [3 marks]

_____ **m**

END OF QUESTIONS

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