Candidate forename		Candidate surname	

Centre number						Candidate number				

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GENERAL CERTIFICATE OF SECONDARY EDUCATION

B272B

MATHEMATICS C

(GRADUATED ASSESSMENT)

MODULE M2 (SECTION B)

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)
Electronic calculator

READ INSTRUCTIONS OVERLEAF

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INSTRUCTIONS TO CANDIDATES

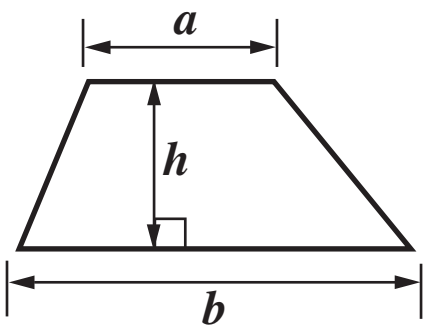
- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**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

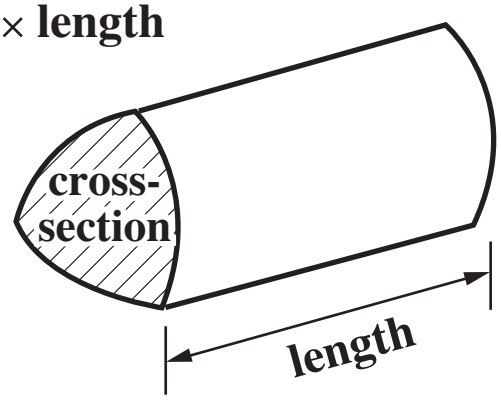
- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **Section B starts with question 6.**
- **You are expected to use a calculator in Section B of this paper.**
- **The total number of marks for this Section is 25.**

FORMULAE SHEET

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



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



6 This is part of the timetable for Buses by the Sea.

Marine Parade	0731	0746	0756	0816
Goring shops	0745	0800	0810	0830
Ferring War Memorial	0749	0804	0814	0834
East Preston	0800	0815	0825	0845
Rustington shops	0807	0822	0832	0852
Wick		0840	0850	0910

(a) A bus leaves Marine Parade at 0731.

(i) At what time does this bus reach Rustington shops?

(a)(i) _____ [1]

(ii) How long does this journey take?

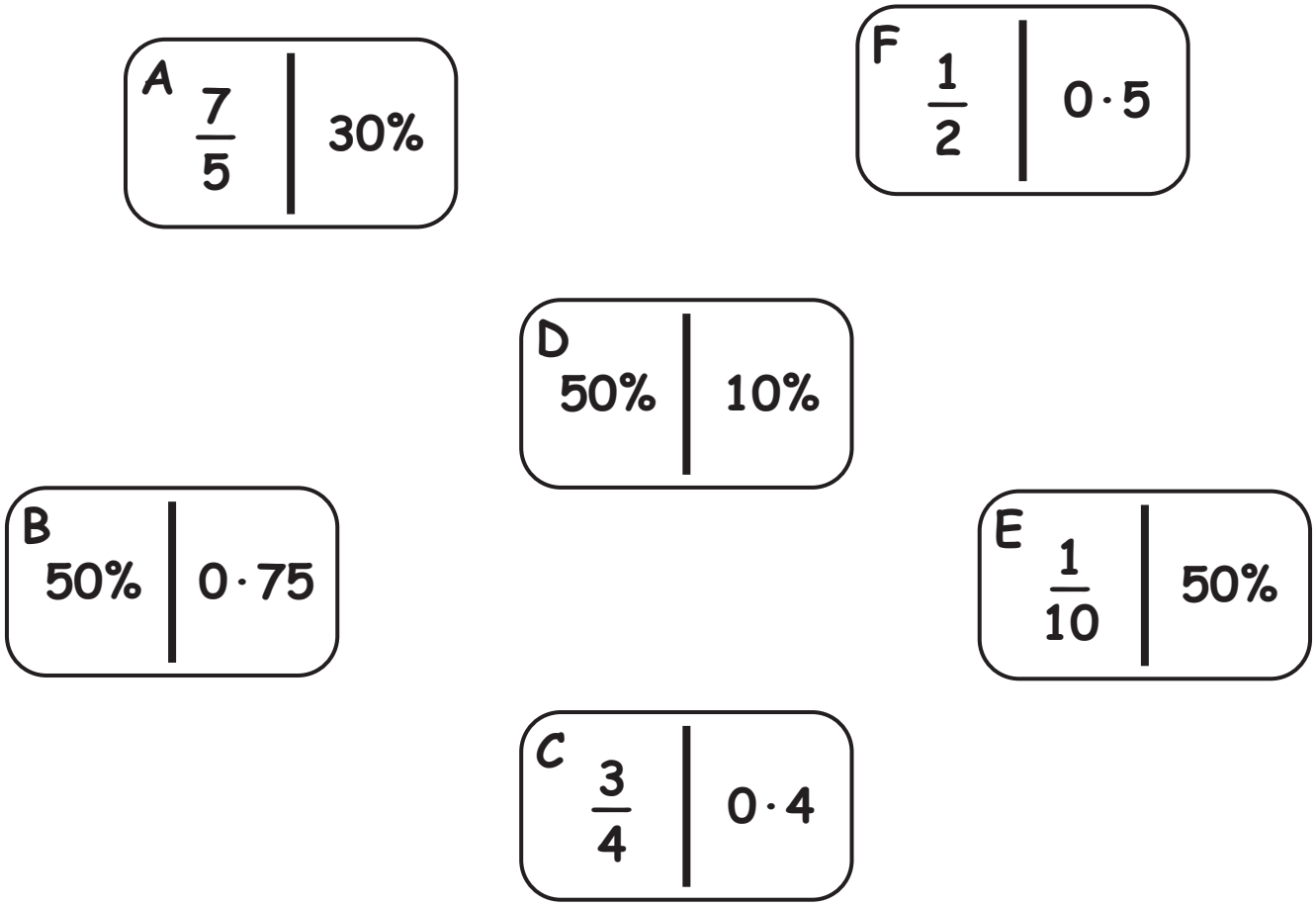
(ii) _____ minutes [1]

(b) Bill needs to be in Wick by 0900 for an appointment.
He will catch a bus from East Preston.
He plans to be at the bus stop 4 minutes before the bus is due.

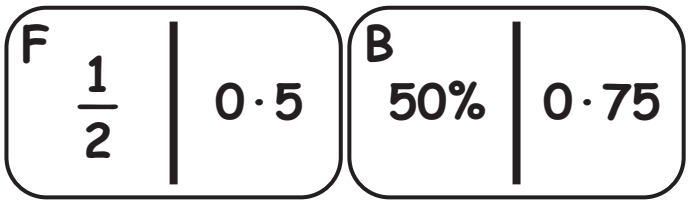
At what time should Bill get to the bus stop to catch the latest possible bus?

(b) _____ [3]

7 Brian and Suki are playing fraction dominoes.
They have these six dominoes.



One person plays a domino.
The next person then plays a domino so that touching values match.
In a game, B and F have been played so that 0·5 and 50% match.



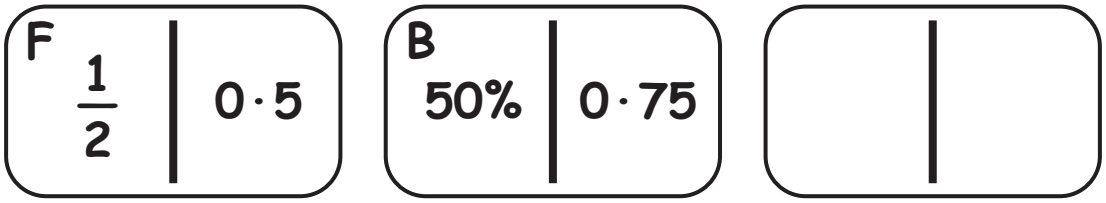
(a) Play must start with a "double", where both values on the domino are the same.

Which domino was played first, F or B?

(a) _____ [1]

(b) It is now Suki's turn to play a domino.

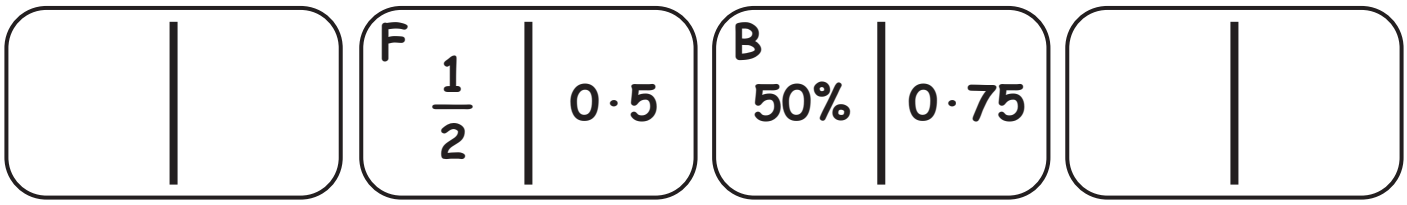
She places one of the dominoes on the RIGHT of the row.



Which domino does she play?

(b) _____ [1]

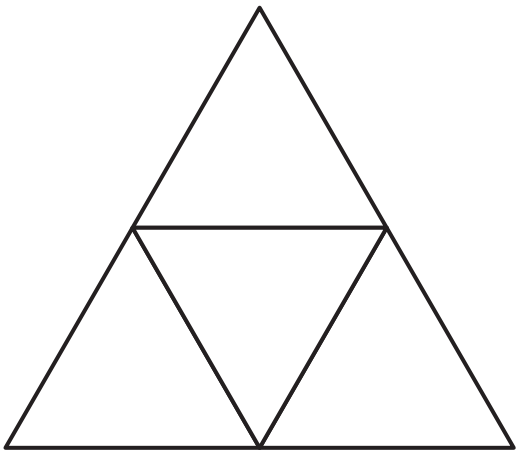
(c) Brian now plays a domino on the LEFT of the row.



Which domino does he play?

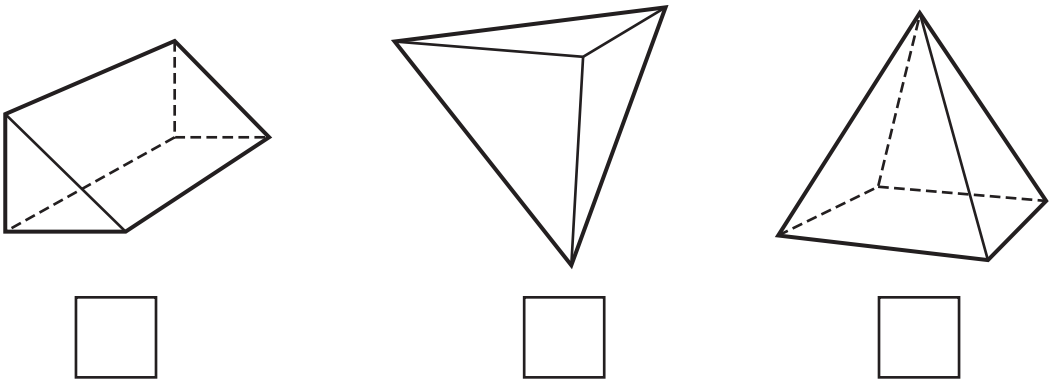
(c) _____ [1]

8 Huan draws this net.



(a) When the net is folded it will make one of these solids.

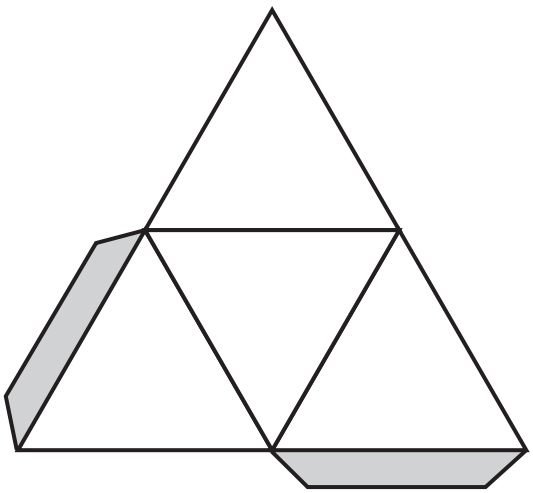
Put a tick (✓) in the box under the correct solid.



[1]

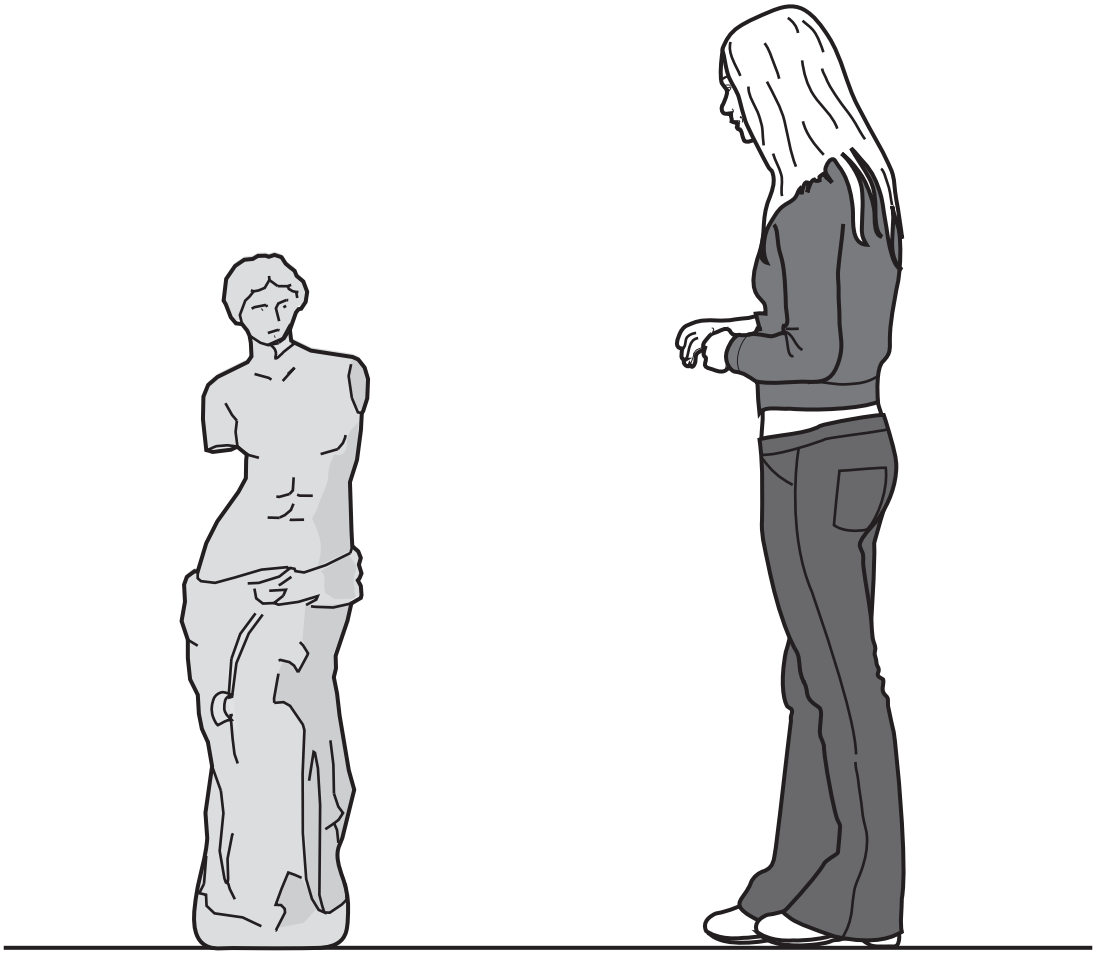
(b) Huan adds these two flaps to his net.
Another flap is needed so that all the edges that meet can be glued together.

Add the third flap to the net below.



[1]

9 Cara, who is 1·6 m tall, sees this statue in the museum.



Estimate the height of the statue in metres.

_____ **m [1]**

10 Harry is doing a weather project for Geography.

(a) He finds this data about the lowest temperatures recorded, on one day, in some European cities.

City	Temperature (°C)
Basel	−4
Birmingham	−2
Brussels	−5
Hamburg	−12
London	−1
Moscow	−12
Paris	−6

(i) Put these temperatures in order, coldest first

_____ _____ _____ _____ _____ _____ _____

coldest **[1]**

(ii) What is the mode of these temperatures?

(a)(ii) _____°C [1]

(iii) What is the median of these temperatures?

(iii) _____°C [1]

(iv) What is the range of these temperatures?

(iv) _____°C [1]

(b) Harry also finds these records about the highest temperatures recorded, in °C, in some European countries.

Country	Temperature (°C)	Temperature (°F)
France	44	111·2
Romania	45	
United Kingdom	39	102·2

Harry finds this formula for changing temperature in °C into temperature in °F.

Multiply the temperature in °C by 1·8 and then add 32.

Use this formula to change 45 °C into °F.

(b) _____ °F [2]

11 Akil wants to take some cakes to share with his class for his birthday.
He has £10 to spend.
There are 25 people, including Akil, in his class.

(a) How many pence can Akil spend on cakes for each person?

(a) _____p [2]

(b) Akil spends his £10 on these cakes.

Type of cake	Number in a box	Price
Chocolate cakes	5 in a box	2 boxes for £2

(i) How many chocolate cakes does Akil buy?

(b)(i) _____ [2]

(ii) The cakes are shared out equally.

How many cakes does each person get?

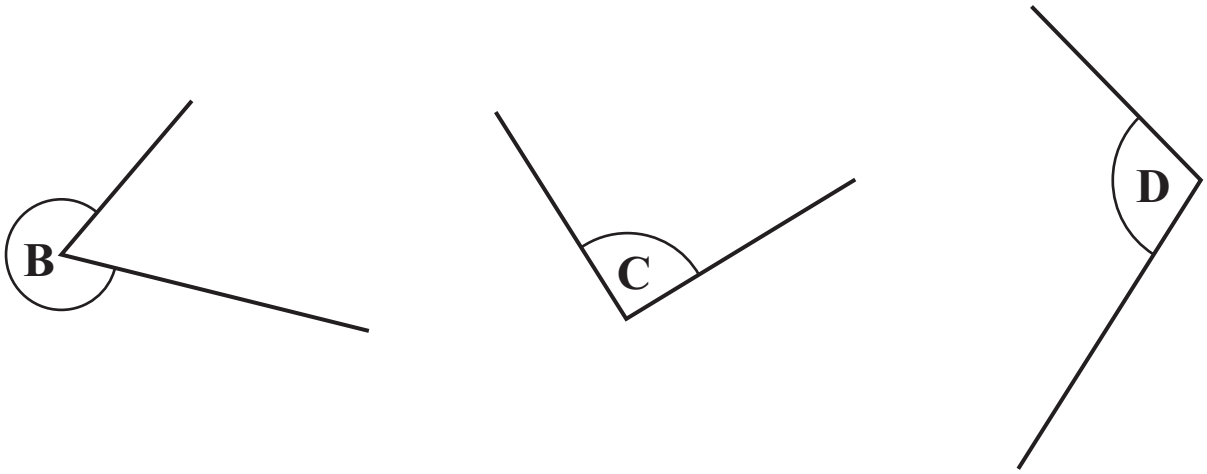
(ii) _____ [2]

12 (a) Draw an angle of 78° at A on the line below.

A

[1]

(b) Which of these angles is a reflex angle?



(b) _____ [1]

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