OXFORD CAMBRIDGE AND RSA EXAMINATIONS

GCSE

J567/01

MATHEMATICS B

Paper 1 (Foundation Tier)

THURSDAY 28 FEBRUARY 2013: Afternoon

DURATION: 1 hour 30 minutes plus your additional time allowance

MODIFIED ENLARGED 24pt

Candidate forename		Candidate surname	

Centre number						Candidate number				

Candidates answer on the Question Paper.

OCR SUPPLIED MATERIALS:

Insert for Question 2

OTHER MATERIALS REQUIRED:

Geometrical instruments

Tracing paper (optional)

WARNING

No calculator can be used for this paper.

This paper has been pre modified for carrier language

OCR is an exempt Charity

READ INSTRUCTIONS OVERLEAF

DC (RW/CGW) 1637022123 75450/1

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INSTRUCTIONS TO CANDIDATES

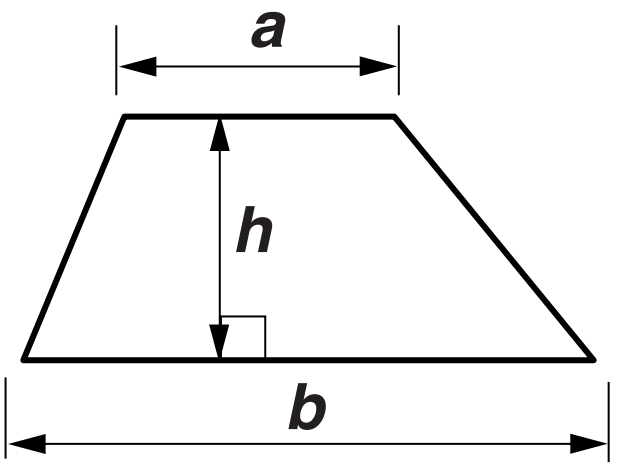
- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. HB pencil may be used for graphs and diagrams only.**
- **Answer ALL the questions.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**
- **Your answers should be supported with appropriate 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).**

INFORMATION FOR CANDIDATES

- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **Your Quality of Written Communication is assessed in questions marked with an asterisk (*).**
- **The total number of marks for this paper is 100.**

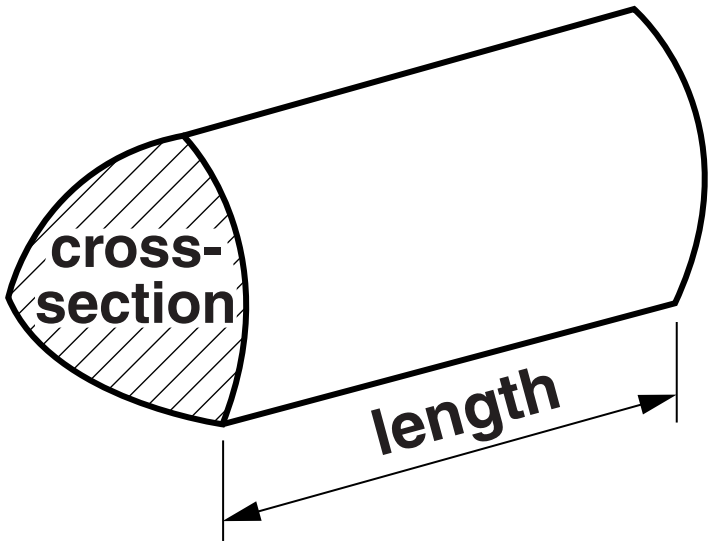
FORMULAE SHEET: FOUNDATION TIER

Trapezium



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

Prism



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

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1 (a) Write 4627

(i) to the nearest 10,

(a)(i) _____ [1]

(ii) to the nearest 100.

(ii) _____ [1]

(b) Work out.

(i) 3.6 × 100

(b)(i) _____ [1]

(ii) 146.3 ÷ 10

(ii) _____ [1]

(c) Work out.

25% of 52

(c) _____ **[2]**

2 Look at the map of a village on the insert provided.

(a) The grid reference of the Church on the map is F1.

What is the grid reference of the Pub?

(a)_____ [1]

(b) Mia and John get off the bus at the bus stop at the end of Rectory Road.

(i) Mia walks along Rectory Road.

In what compass direction is Mia walking?

(b)(i)_____ [1]

(ii) John walks along School Lane towards the school.

In what compass direction is John walking?

(ii)_____ [1]

(c) What is the actual distance between the two bus stops?

(c)_____m [2]

(d) A visitor asks for directions from the Church to the Post Office.

left	back	first
right	third	second

Complete the directions using words from the list above.
You may use a word more than once.

Walk down Kirk Lane and turn left onto Rectory Road.

Walk down Rectory Road and turn

_____ onto Main

Street.

Walk down Main Street and turn

_____ onto Heath

Road.

Walk down Heath Road and take

the _____ turn

on the _____ onto

Straws Lane.

The Post Office is then on your

_____. [2]

3 Three friends have their heights measured.

Ben is 1.4 metres tall.
Josef is 1.13 metres tall.
Leila is 0.95 metres tall.

(a) How much taller is Josef than Leila?

(a) _____ **m [2]**

(b) How much taller is Ben than Josef?

(b) _____ **m [2]**

4 Jamie is doing some baking.

(a) His chocolate cake takes half an hour to bake.
Jamie puts the chocolate cake in the oven at twenty to eleven.

At what time should he take the cake out of the oven?

(a) _____ **[1]**

(b) His fruit cake takes two hours and fifteen minutes to bake.
Jamie puts the fruit cake in the oven at 1:50.

At what time should he take the cake out of the oven?

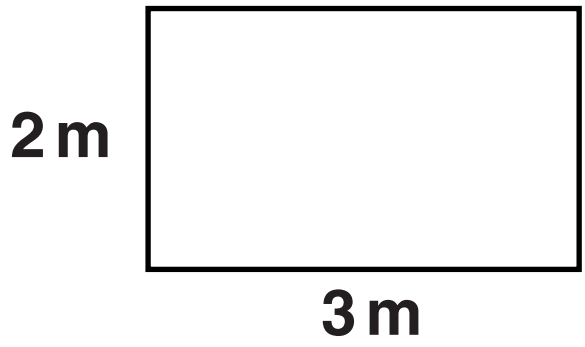
(b) _____ **[1]**

(c) Jamie is also cooking a rice pudding.
He needs this to be ready at 6:25.
The rice pudding takes one hour and forty five minutes to cook.

At what time should he put the rice pudding in the oven?

(c) _____ [1]

5 Sian has a bedroom that is in the shape of a rectangle.
It is 3 metres long and 2 metres wide.
This is shown on the following diagram.



NOT TO SCALE

Sian is going to carpet the floor of the bedroom.
She is going to use carpet tiles.
The carpet tiles are squares of side 50 cm.

How many carpet tiles will she need?

[3]

6 Oliver is in hospital.
His temperature is recorded every three hours.
The graph opposite shows Oliver's temperature during one day.

(a) What is Oliver's temperature at 6pm?

(a) _____ °C [1]

(b) What is his maximum recorded temperature?

(b) _____ °C [1]

(c) How much did his temperature rise between 9am and 12 noon?

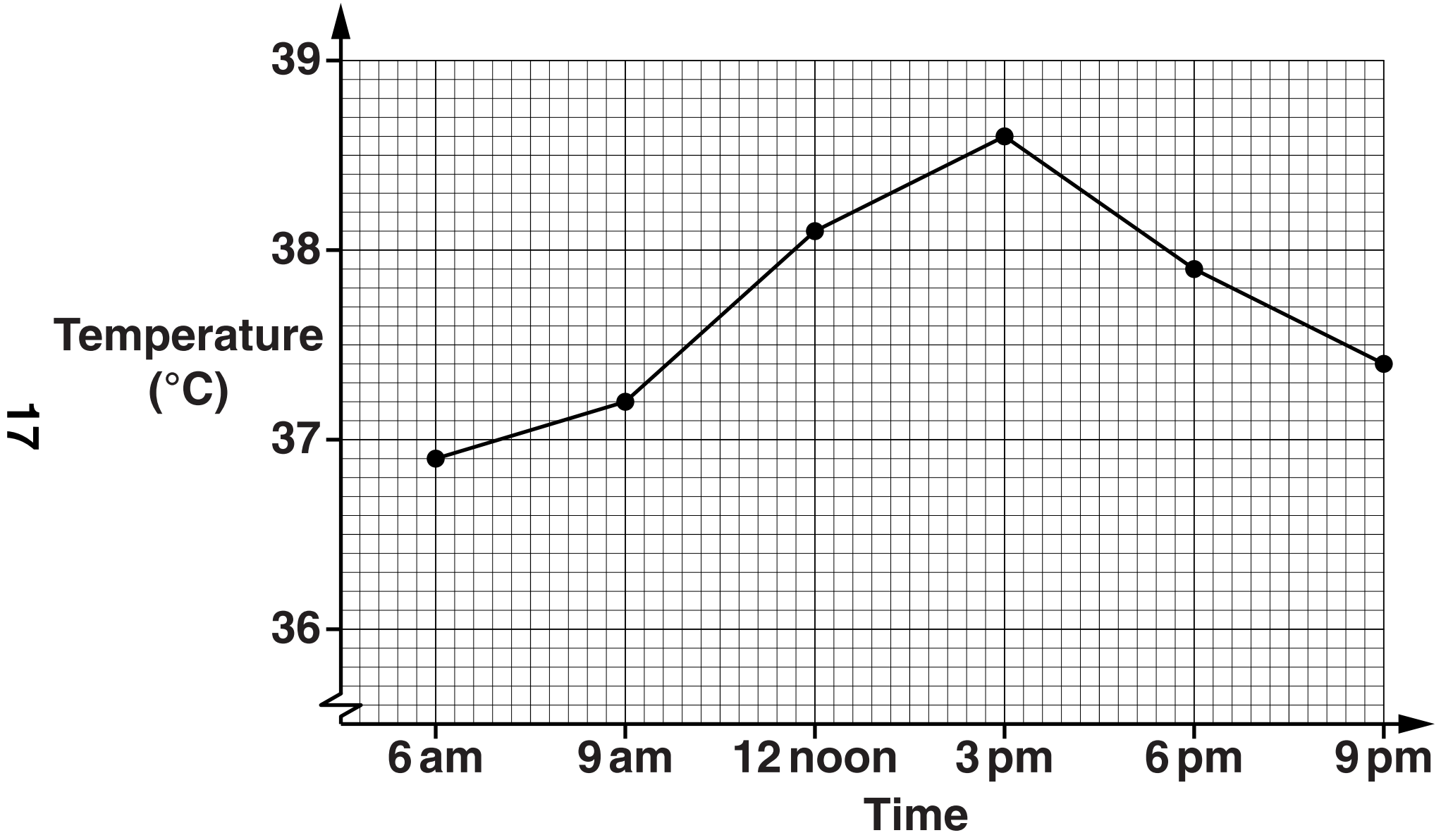
(c) _____ °C [1]

(d) Describe how Oliver's temperature varied throughout the day.

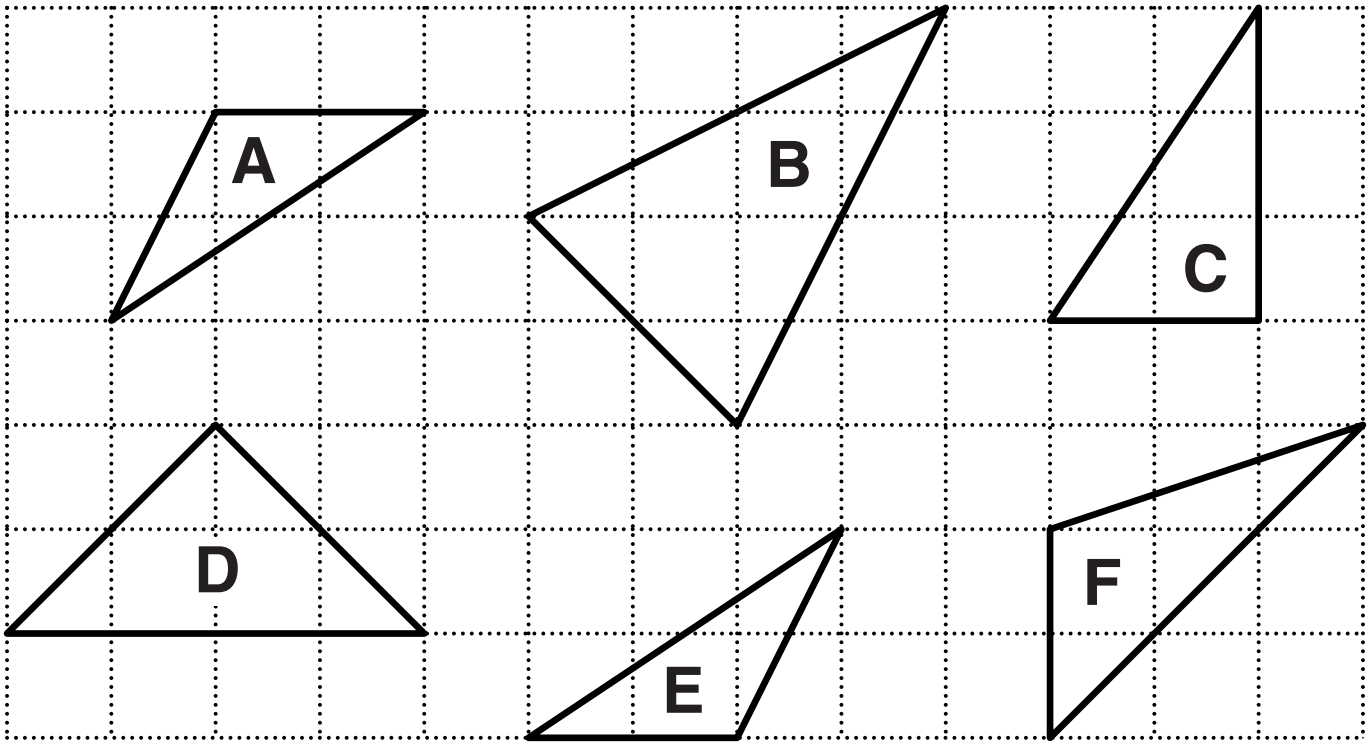
_____

_____

_____ [1]


39
38
37
36
Temperature (°C)
6 am
9 am
12 noon
3 pm
6 pm
9 pm
Time

7 (a) Ravi has drawn six triangles on square paper.



(i) Which two triangles contain a right angle?

(a)(i) _____ and _____ [1]

(ii) Which two triangles are isosceles?

(ii) _____ and _____ [1]

(iii) Which two triangles are congruent?

(iii) _____ and _____ [1]

(b) These are the names of some special quadrilaterals.

kite	square	parallelogram
rhombus	rectangle	

Choose a quadrilateral from the list above that satisfies each set of conditions.

(i) All the sides are the same length.

All the angles are right angles.

There are four lines of symmetry.

(b)(i)_____ **[1]**

(ii) All the sides are the same length.

Opposite angles are equal.

There are only two lines of symmetry.

(ii)_____ [1]

(iii) Two pairs of adjacent sides are of equal length.

One pair of opposite angles are equal.

There is only one line of symmetry.

(iii)_____ [1]

8 (a) Solve.

(i) $m - 7 = 12$

(a)(i) $m =$ _____ [1]

(ii) $5t = 35$

(ii) $t =$ _____ [1]

(b) Simplify fully.

(i) $3p + 2p + 4p$

(b)(i)_____ **[1]**

(ii) $5x + y - 3y + 6x$

(ii)_____ **[2]**

9 (a) On Monday the temperature at midday was 3 °C.
At midnight the temperature had fallen to -6 °C.

(i) How many degrees had the temperature fallen?

(a)(i) _____ [1]

(ii) By midday on Tuesday the temperature had risen by 4 degrees from the temperature at midnight.

What was the temperature at midday on Tuesday?

(ii) _____ °C [1]

(b) (i) Two numbers multiply together to equal $^{-}21$.
They add together to equal $^{-}4$.

What are the two numbers?

(b)(i) _____ and _____ [2]

(ii) Two numbers multiply together to equal 10.
They add together to equal $^{-}7$.

What are the two numbers?

(ii) _____ and _____ [1]

10 (a) Work out.

(i) 45.3×6

(a)(i) _____ **[1]**

(ii) $448 \div 14$

(ii) _____ **[2]**

(b) A factory makes electrical goods for 51 weeks in a year.
It makes 132 toasters every week.

How many toasters does it make in a year?

(b) _____ [3]

11 (a) In a TV gameshow the contestant is selected from a panel of five people. Each person on the panel is equally likely to be selected.

The people on the panel are:

Kate	**(female)**
Elizabeth	**(female)**
Dave	**(male)**
Meena	**(female)**
William	**(male)**

(i) What is the probability that Dave is selected?

(a)(i)_____ **[1]**

(ii) What is the probability that a female is selected?

(ii) _____ [1]

(iii) When a person is selected, they are replaced on the panel by a new person.
After three games William has still not been selected.

What is the probability that he is selected next time?

(iii) _____ [1]

(b) In a different gameshow there are 12 people on a panel and one person is selected to be the contestant.
Each person is equally likely to be selected.
The probability that a male is selected is $\frac{2}{3}$.

How many males are there on the panel?

(b) _____ **[2]**

12 (a) Here are the first five terms in two sequences.

What is the next term in each of these sequences?

(i) 4 7 10 13 16

(a)(i)_____ [1]

(ii) 3 4 6 9 13

(ii)_____ [1]

(b) Harry uses the following set of rules to find the next term in a sequence.

If the number is even, divide by 2.

If the number is odd, multiply by 3 and add 1.

(i) Harry starts one sequence with 12.
These are the first four terms.

12 6 3 10

What are the next 3 terms in Harry's sequence?

(b)(i) _____, _____, _____ [3]

(ii) **A different sequence follows Harry's rules.**
The second term in the sequence is 22.

What numbers could the first term have been?

(ii) _____ or _____ [2]

13* **Lizzie and Megan are competing to swim for the school team in the 50 m freestyle.**
They both complete some trial swims and record their times.

Lizzie swims 5 trials and these are her times (in seconds).

26.3 26.2 26.7 26.3 26.5

Megan swims 6 trials and these are her times (in seconds).

26.5 26.7 26.1 26.3 26.9 26.5

Who should the girls' teacher select? State clearly the figures that you use for your calculations. [5]

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14 (a) Convert the following fractions to decimals.

(i) $\frac{7}{10}$

(a)(i)_____ **[1]**

(ii) $\frac{3}{4}$

(ii)_____ **[1]**

(b) Which fraction is bigger, $\frac{1}{3}$ or $\frac{3}{10}$?

Show how you decide.

(b) _____ [2]

(c) **Work out.**

$$3\frac{2}{5} + \frac{2}{3}$$

Give your answer as a mixed number.

(c) _____ **[3]**

15 (a) **Multiply out.**

$a(3 + a)$

(a) _____ **[1]**

(b) Factorise.

$4b - 12$

(b) _____ **[1]**

(c) Solve this inequality.

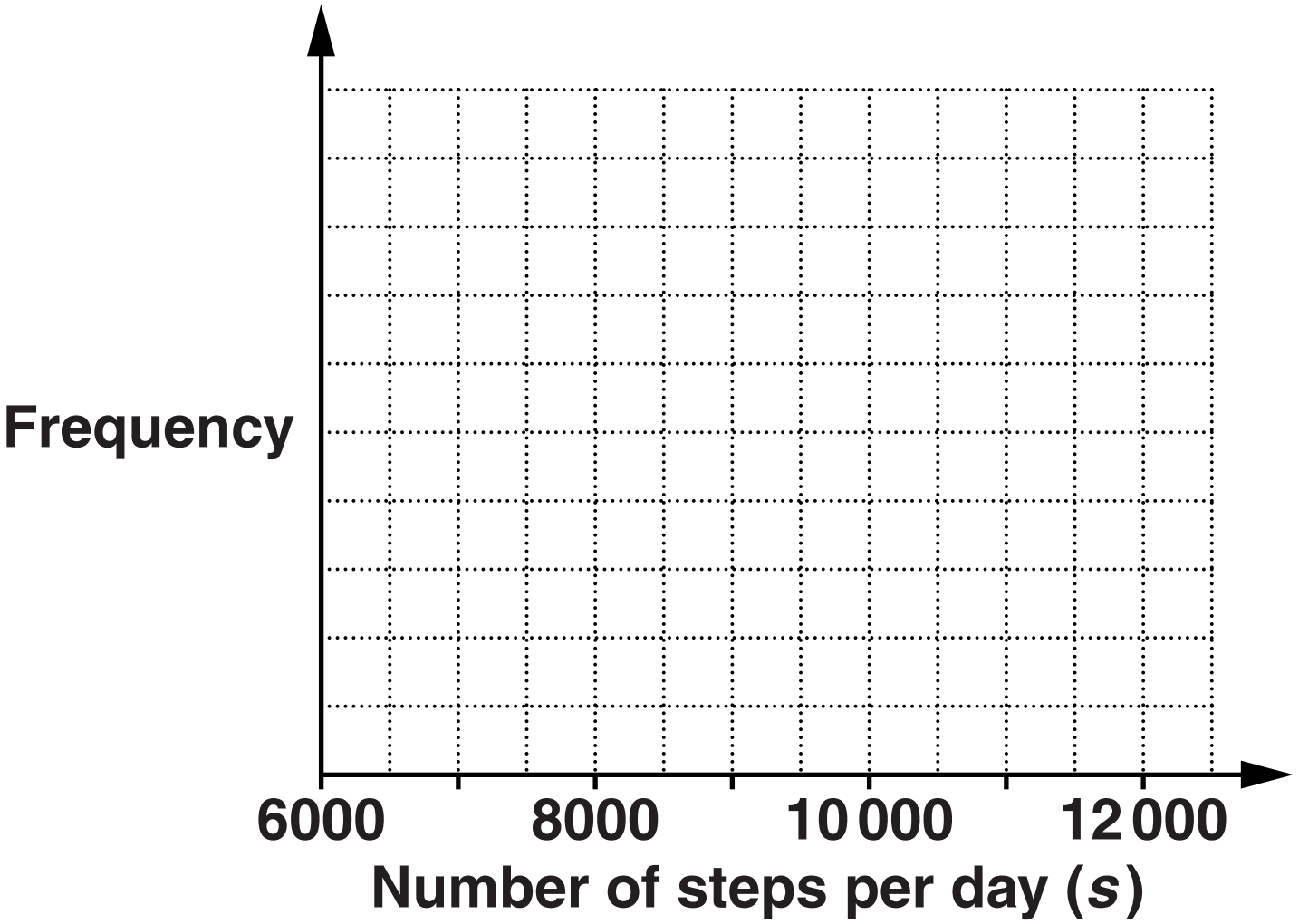
$3x - 6 < x + 4$

(c) _____ **[3]**

16 Sofia uses a pedometer to record the number of steps she takes each day for one month.
Her results are summarised in the table below.

Steps per day (s)	Frequency
$6000 \leqslant s < 7000$	3
$7000 \leqslant s < 8000$	4
$8000 \leqslant s < 9000$	6
$9000 \leqslant s < 10\,000$	8
$10\,000 \leqslant s < 11\,000$	7
$11\,000 \leqslant s < 12\,000$	2

(a) On the following grid, draw a frequency polygon to display this information.



[3]

(b) Write down the modal class of the number of steps per day.

(b) _____ [1]

(c) Sofia reads that taking at least 10 000 steps per day is an important part of a healthy lifestyle.

For what percentage of the month did she meet this target?

(c) _____ % [2]

(d) One day Sofia goes for a walk in the hills.
The length of the walk is 7 km, correct to the nearest kilometre.

What is the longest possible length of Sofia's walk?

(d) _____ km [1]

17 Kate thinks of a number.
She multiplies it by 3 and then adds 3.

Leo thinks of the same number as Kate.
He subtracts 5 and then multiplies the result by 6.

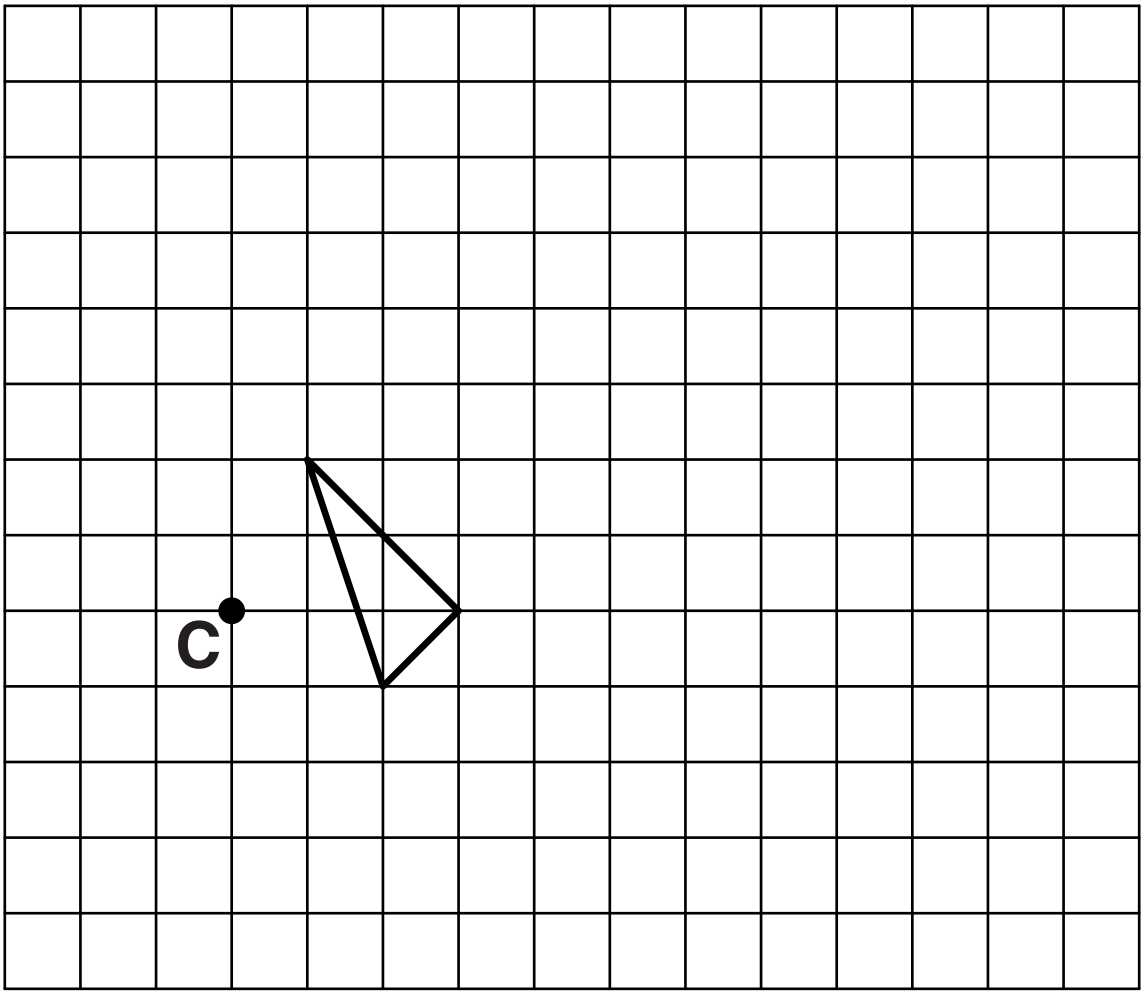
Kate and Leo both end up with the same number.

Find the numbers that they start and end with.

Start _____

End _____ [4]

18 The following diagram shows a triangle on a grid together with the point C. Enlarge the triangle with centre C and scale factor 3.



[3]

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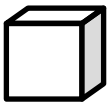
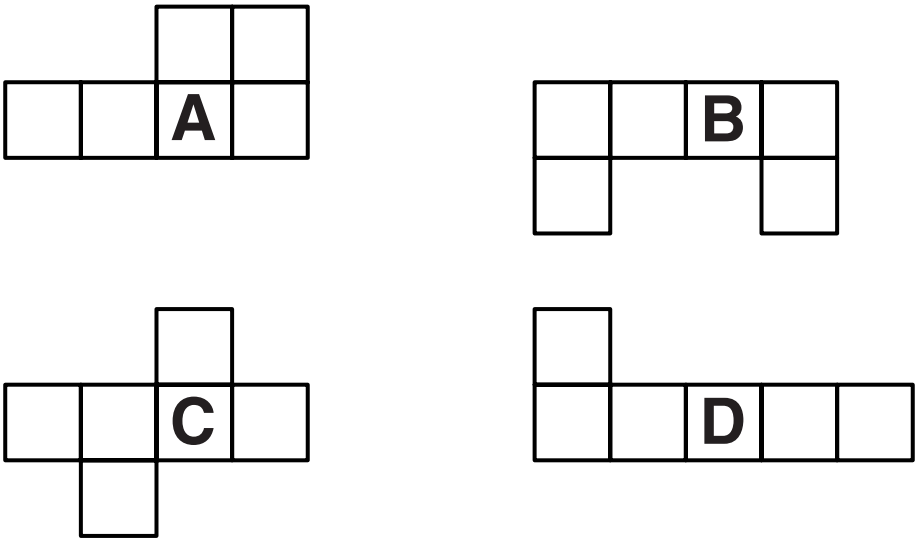
19 (a) This is a 3-D sketch of a cube.

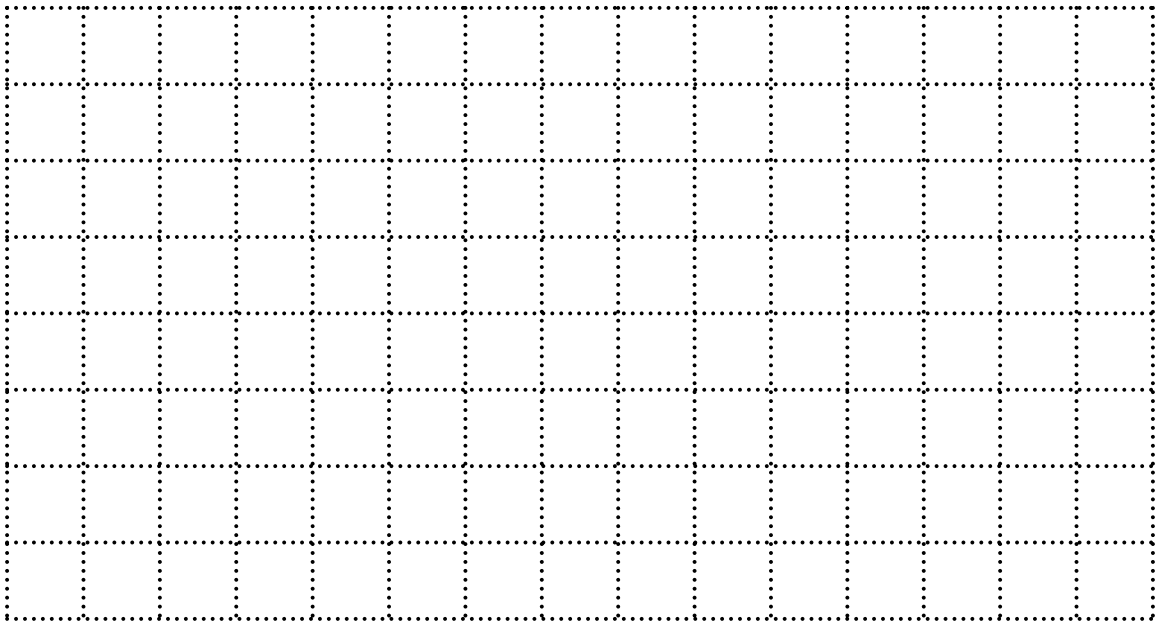


(i) Which ONE of the following four shapes is a net of a cube?



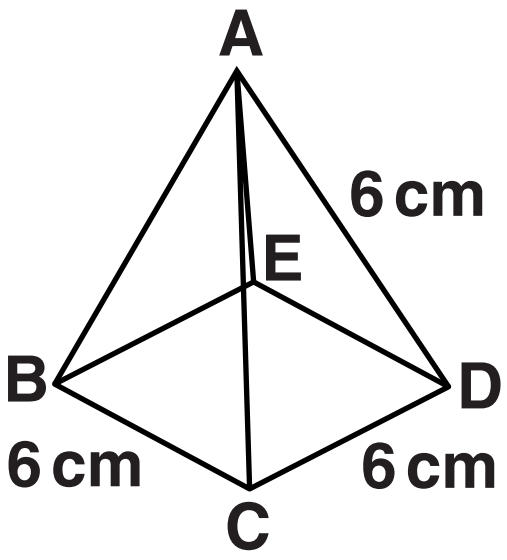
(a)(i) _____ **[1]**

(ii) **Draw a different net of a cube on the square paper shown below. Do not draw reflections or rotations of your answer to part (a)(i).**

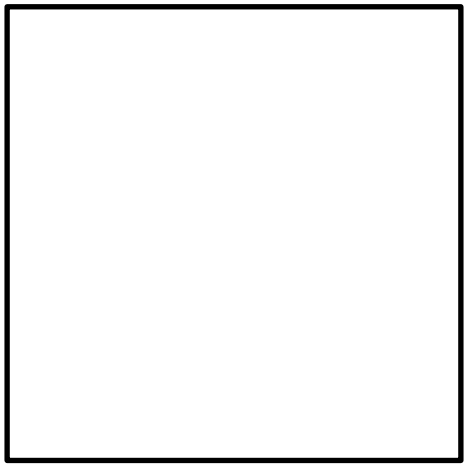


[1]

(b) ABCDE, shown below, is a square-based pyramid.
The length of each edge is 6 cm.



(i) **In the space below, construct a full-size net of the pyramid. The base is drawn for you.**



[2]

(ii) Use measurements from your diagram to calculate the total surface area of the pyramid.

(ii) _____ **cm^2 [4]**

END OF QUESTION PAPER

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