

Please write clearly in block capitals.

Centre number

Candidate number

Surname

Forename(s)

Candidate signature

I declare this is my own work.

INTERNATIONAL GCSE

MATHEMATICS

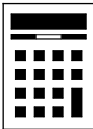
Core Tier Paper 1C

C

Tuesday 7 November 2023 07:00 GMT Time allowed: 1 hour 30 minutes

Materials
For this paper you must have:

- a calculator
- mathematical instruments.



Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

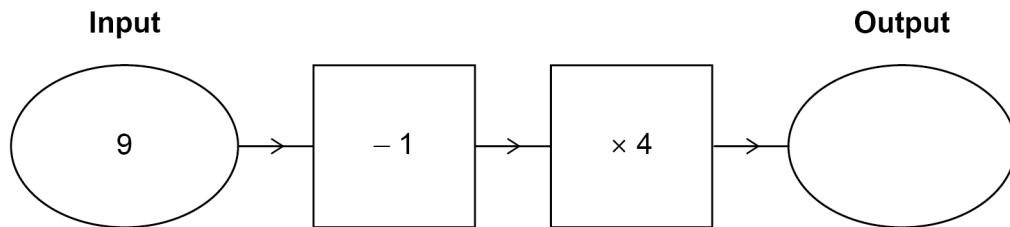
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.
- If your calculator does not have a π button, take the value of π to be 3.142

Advice
Show all necessary working; otherwise marks for method may be lost.

For Examiner's Use	
Pages	Mark
2–3	
4–5	
6–7	
8–9	
10–11	
12–13	
14–15	
16–17	
18–19	
20–21	
22	
TOTAL	

Answer **all** questions in the spaces provided.

- 1 (a)** Here is a number machine with input 9

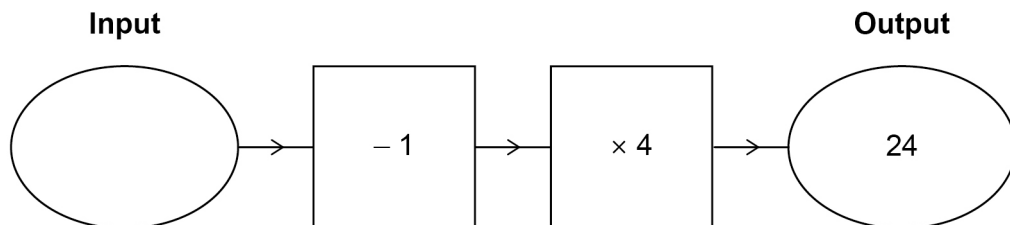


Work out the **output**.

[1 mark]

Answer _____

- 1 (b)** Here is the same number machine with output 24



Work out the **input**.

[2 marks]

Answer _____



- 2 (a)** Eric is paid \$12 per hour.
His pay is increased by \$4 per hour.
Write the **increase** as a fraction of his original pay.
Give your answer in its simplest form.

[1 mark]

Answer _____

- 2 (b)** Carlos is paid \$15 per hour.
He gets a 5% pay increase.
How much **extra** is Carlos paid per hour?

[2 marks]

Answer \$ _____



3 Three numbers are represented as

$$n + 3$$

$$n + 7$$

$$n - 2$$

3 (a) Write the numbers in order, starting with the smallest.

[1 mark]

smallest _____

largest _____

3 (b) Work out an expression for the sum of the three numbers.

Give your answer in its simplest form.

[2 marks]

Answer _____



4 A shop sells balls that are pink, yellow or blue.

One week the shop sold

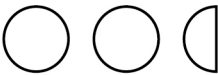
10 pink balls

half as many yellow balls as pink balls

27 balls in total.

A pictogram is used to represent this information.

The row for pink has been completed.

Pink	
Yellow	
Blue	

Complete the rows for yellow and blue.

[3 marks]

5 Here are two expressions.

$$wx$$

$$6w - x$$

When $w = 4$ and $x = 5$ which expression has the greater value?

You **must** show the value of each expression.

[3 marks]

Answer _____



6

Here are some statements about a circle.

Tick **one** box for each statement.**[4 marks]**

	Always true	Sometimes true	Never true
A diameter is a line of symmetry.	☐	☐	☐
An arc is a straight line.	☐	☐	☐
A tangent is a straight line.	☐	☐	☐
The circumference is longer than the radius.	☐	☐	☐



- 7** Sweets come in small packets and large packets.
Jing buys 4 small packets and 2 large packets.
She has 110 sweets in total.
There are 16 sweets in each small packet.
How many sweets are there in each large packet?

[4 marks]

Answer _____

Turn over for the next question**Turn over ►**

- 8** Here is a formula for the cost, $\$C$, of hiring a room for h hours.

$$C = 12h + 15$$

- 8 (a)** Work out the cost of hiring the room for 2 hours.

[2 marks]

Answer \$ _____

- 8 (b)** Remi pays \$75 to hire the room.
For how many hours does she hire the room?

[2 marks]

Answer _____ hours



9



10 A linear sequence starts -22 -16 -10

Work out the value of the first positive term of the sequence.

[2 marks]

Answer _____

11 (a) Multiply out and simplify $3(x - 4) + 2x$

[2 marks]

Answer _____

11 (b) Factorise fully $6w + 2wy$

[2 marks]

Answer _____



Asif has \$2800

He then gives $\frac{3}{4}$ of the **remaining** money to Carl.

How much **more** money does he give to Carl than to Beth?

[4 marks]

[illegible]

Answer \$

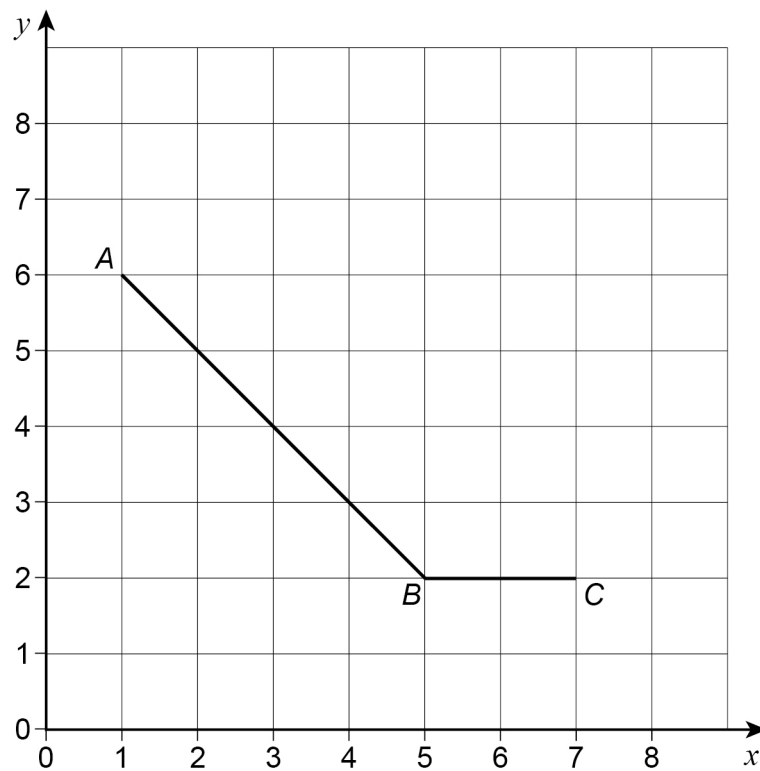
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10

Turn over ►



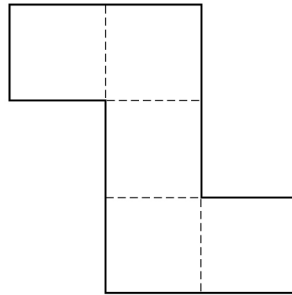
13

 $ABCD$ is a trapezium. AB and BC are shown. CD is vertical.Work out the coordinates of the **midpoint** of AD .**[2 marks]**

Answer (_____ , _____)



- 14** This shape is made from five identical squares.



Not drawn
accurately

- 14 (a)** Use **one** number from the list 0, 1, 2, 3, 4 to complete each statement.

[2 marks]

The number of lines of symmetry of the shape is _____

The order of rotational symmetry of the shape is _____

- 14 (b)** The area of the shape is 320 cm^2

Work out the perimeter of the shape.

[4 marks]

Answer _____ cm



15

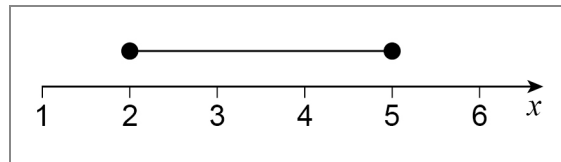
 x is an integer.The boxes on the left show values of x .

Draw a line from each box on the left to the correct box on the right.

[3 marks]

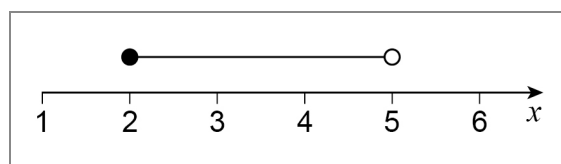
2, 3, 4, 5

$$2 < x \leq 5$$



2, 3, 4

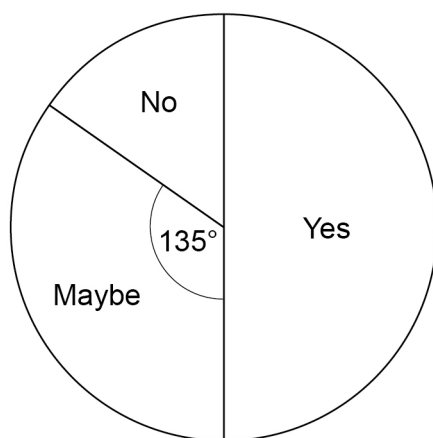
$$2 < x < 5$$



3, 4



- 16** Some customers in a shop were asked if they wanted longer opening hours.
The pie chart represents the results.



- 16 (a)** Half of the customers said Yes.
What fraction of the customers said No?

[2 marks]

Answer _____

- 16 (b)** 364 customers said Yes.
How many customers said Maybe?

[3 marks]

Answer _____



17 (a) Write $(3^5)^2$ as a single power of 3

[1 mark]

Answer _____

17 (b) Write $5^6 \times 5^9$ as a single power of 5

[1 mark]

Answer _____

17 (c) Write $11^{14} \div 11^2$ as a single power of 11

[1 mark]

Answer _____



18

Here is some information about the heights of 200 people.

Height, h (metres)	Frequency
$1.1 \leq h < 1.3$	16
$1.3 \leq h < 1.5$	21
$1.5 \leq h < 1.7$	99
$1.7 \leq h < 1.9$	64

Tick **one** box for each statement.

[3 marks]

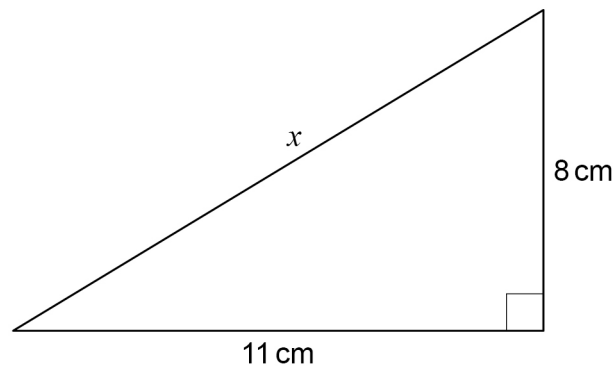
	Definitely true	Might be true	Cannot be true
30 people had a height greater than 1.8 metres	☐	☐	☐
The median height is in the class interval $1.5 \leq h < 1.7$	☐	☐	☐
The range is 1.9 metres	☐	☐	☐

Turn over for the next question

Turn over ►



19

Not drawn
accurately

Use Pythagoras' theorem to work out the value of x .

Give your answer as a decimal.

[3 marks]

$x =$ _____ cm



20

Three numbers are in the ratio $7 : 2 : 3$

The **smallest** number is 34

Do the three numbers add up to 204 ?

You **must** show your working.

[3 marks]

Turn over for the next question

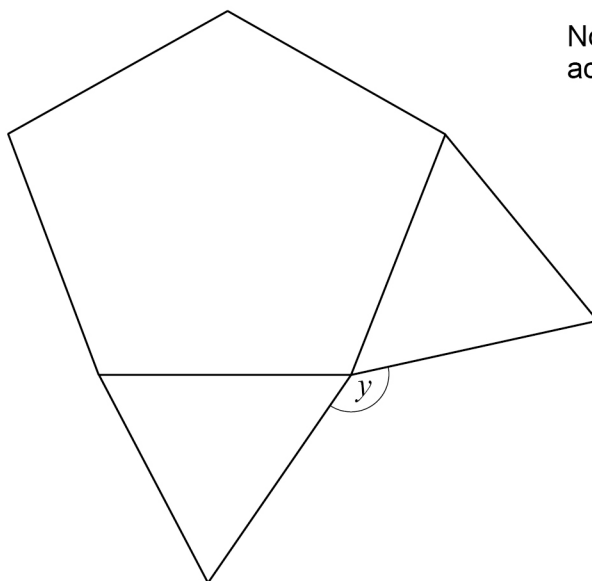
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21

Three tiles are laid in a pattern.

One tile is a regular pentagon and two tiles are equilateral triangles.



Not drawn
accurately

Work out the size of angle y .

[3 marks]

$y =$ _____ $^{\circ}$



22 ξ is a group of people.

For sets X and Y

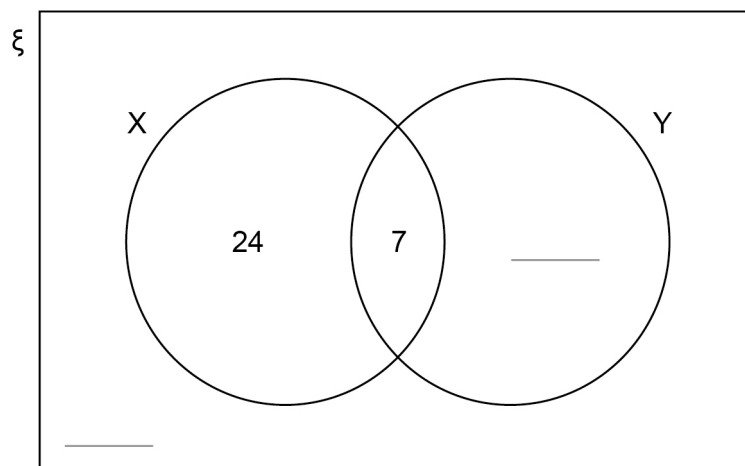
$$n(X) = 31$$

$$n(Y) = 23$$

$$n(X') = 29$$

22 (a) Complete the number of elements in each region of the Venn diagram.

[2 marks]



22 (b) A person from the group is chosen at random.

Work out $P(X)$

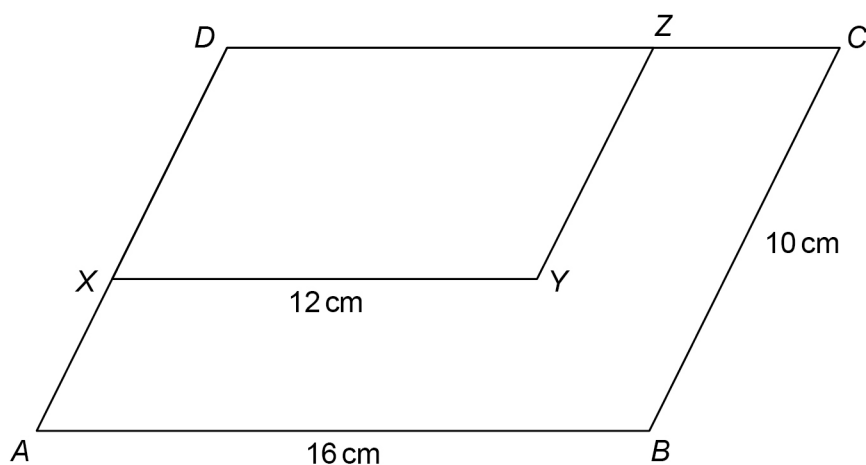
[2 marks]

Answer _____

Turn over ►



23

 $ABCD$ and $XYZD$ are two similar parallelograms.Not drawn
accuratelyWork out the length of AX .**[3 marks]**

Answer _____ cm

END OF QUESTIONS

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