Cambridge Assessment International Education

Cambridge Lower Secondary Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

7097362561

MATHEMATICS **1112/01**

Paper 1 **October 2021**

1 hour

You must answer on the question paper.

You will need: Geometrical instruments
Tracing paper (optional)

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You should show all your working in the booklet.
- You are **not** allowed to use a calculator.

INFORMATION

- The total mark for this paper is 50.
- The number of marks for each question or part question is shown in brackets [ ].

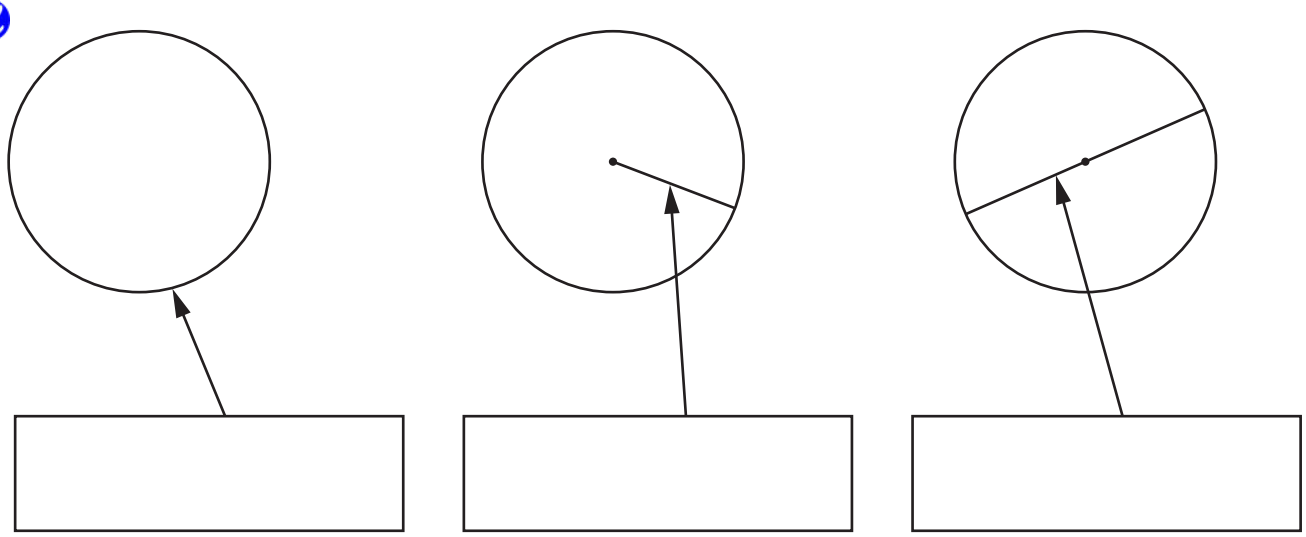
This document has **16** pages. Any blank pages are indicated.

IB21 10_1112_01/7RP

1 Write $\frac{64}{124}$ in its simplest form.

.....[1]

2 Write in the boxes the correct name for each part of a circle.



[2]

3 All the rows, columns and diagonals add up to 15 in this grid.

3	4	8
10	5	0
2	6	7

Complete this grid so that all of the rows, columns and diagonals add up to 15

–3	12	
	5	
		13

[2]

4 Solve.

$17 - 3x = 2$

$x =$ ..... [2]

5 The diagram shows the first three patterns of a sequence made from rods.

Pattern 1 Pattern 2 Pattern 3 Pattern 4

(a) Draw Pattern 4 in the sequence. [1]

(b) Complete the statement.

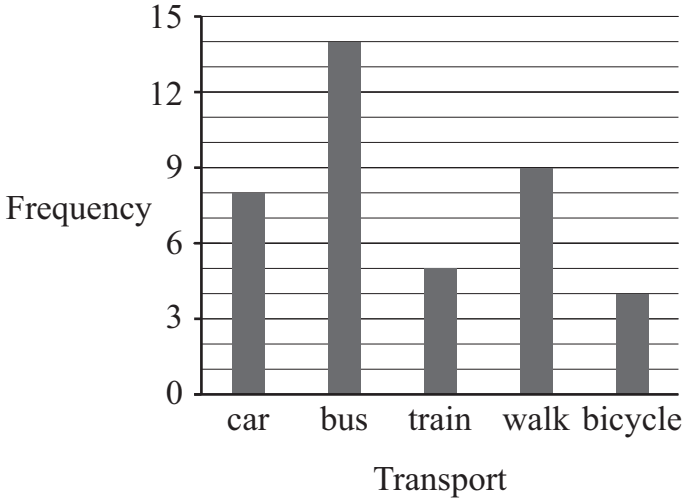
When the pattern number increases by 1,

the number of rods increases by ..... [1]

(c) Work out how many rods will be used for Pattern 7

.....

6 The bar chart shows how students in Class 7 travel to school.



Tick (✓) to show if these statements are true or false.
One has been done for you.

	True	False
There are 40 students in Class 7	✓	
50% of the students travel by car or bus.		
A quarter of the students walk to school.		

[1]

7 Write 0.285 as a fraction in its simplest form.

..... [2]

8 Write these measurements in order of size from smallest to largest.

540 m	504 cm	5.04 km	5400 mm
.....	.....	.....	.....
smallest			largest

[1]

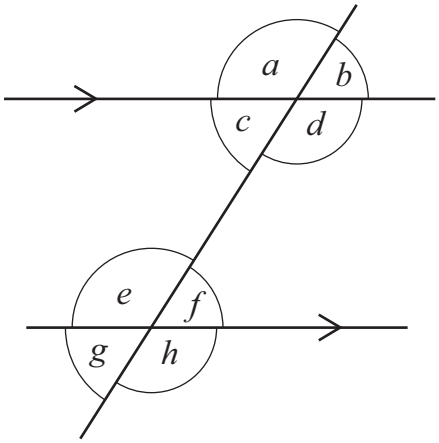
9 Pierre rolls a dice with four sides, numbered 1 to 4
He also throws a coin with two outcomes, H or T.

List all the possible outcomes.
One has been done for you.
You may not need to use all the rows.

Dice	Coin
1	H

[1]

10



Choose one of these words to complete each sentence about the angles in the diagram.

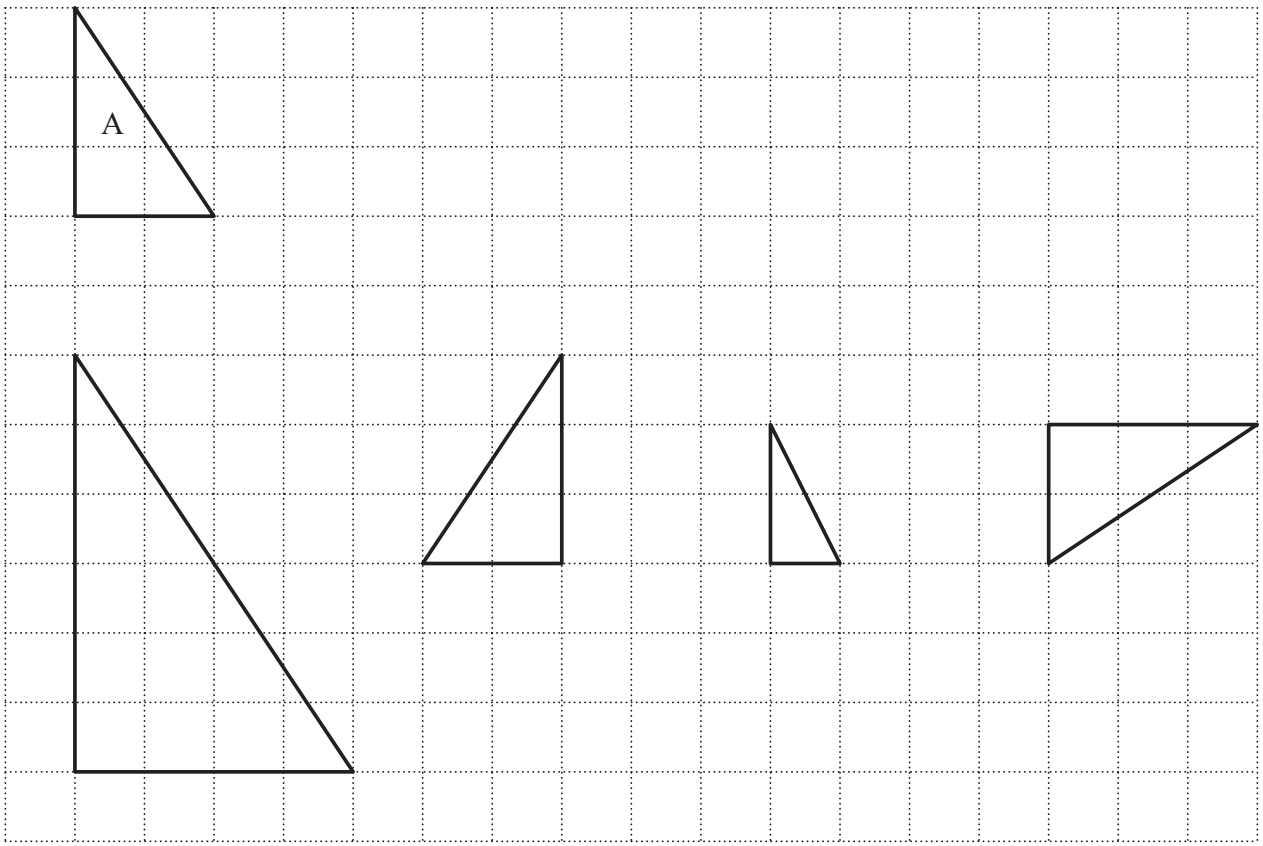
reflex corresponding alternate opposite right

Angles b and f are ..... angles.

Angles d and e are ..... angles.

[2]

11 Draw a ring around **all** the shapes that are congruent to triangle A.



[1]

12 Work out.

$65 \div 9$

Give your answer correct to two decimal places.

..... [2]

13 Write a value in the box to make this statement correct.

$28 \times 10 = 28 \div$ ☐

[1]

14 **(a)** Work out.

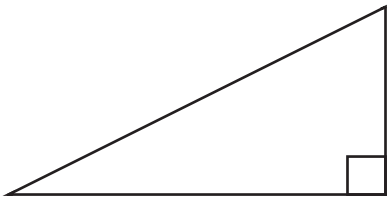
2.46×1.3

..... [2]

(b) Write your answer to part **(a)** correct to two significant figures.

..... [1]

15 Here is a right-angled triangle.



(a) Sketch **two** of these right-angled triangles joined together to make a **parallelogram**.
You must mark the right angles in both triangles.

[1]

(b) Sketch **two** of these right-angled triangles joined together to make a **kite**.
You must mark the right angles in both triangles.

[1]

16 Eva measures the mass of 25 children.
She calculates the mean and the median of the masses.
Eva makes a mistake when measuring the mass of one child.
That child's actual mass is 5 kg greater than Eva's measurement.

Tick (✓) the correct response to each of these statements.

	Must be true	Must be false	Could be true or false
The correct mean is greater than Eva's mean.	☐	☐	☐
The correct median is greater than Eva's median.	☐	☐	☐

[1]

17 Complete this statement using **consecutive** whole numbers.

..... $< \sqrt{40} <$ .....

[1]

18 Carlos, Rajiv, Samira and Naomi share a bag of sweets.
Carlos eats $\frac{2}{5}$ of the sweets.
Rajiv eats $\frac{1}{6}$ of the sweets.
Samira and Naomi share the rest of the sweets equally.

Work out the fraction of the sweets that Samira gets.

..... [3]

19 The first three terms of the sequence $3n^2 - 7n$ are

$$-4, \quad -2, \quad 6$$

Write down the first three terms of the sequence $3n^2 - 7n + 3$

..... , ... , ... [1]

20 Mike conducts an experiment to find out if cars drive at different speeds on different days. He collects data about the speed of cars on the road between 12 pm and 1 pm on two different days.
His data is shown in the back to back stem-and-leaf diagram.

Monday				Thursday				
		0	1	5	9			
			2	0	7	7		
		4	3	3	3	4	5	6
		2	4	1	7	9	9	9
9	2	2	5	4	5	8		
8	1	0	6	6				
	5	2	7	4	9			
		3	8	4				

Key: 2 | 4 | 1 represents 42 km/h on Monday and 41 km/h on Thursday

(a) Work out the difference in speed between the fastest car on Monday and the fastest car on Thursday.

..... km/h [1]

(b) Mike concludes that the speed of cars is lower when there are more cars on the road.

Explain how the data supports Mike's conclusion.

.....

..... [1]

21 Hassan plays cricket.

The table shows the number of catches he makes in 50 games.

Number of catches	0	1	2	3	4	5
Frequency	8	11	12	13	4	2

(a) Use the table to estimate the probability that he makes exactly **one** catch in the next game he plays.

..... [1]

(b) Write down the modal number of catches.

..... [1]

(c) Find the median number of catches.

..... [1]

22 A hamster eats $\frac{2}{7}$ of a bag of carrots each day.

Work out how many days it takes the hamster to eat 8 whole bags of carrots.

..... [2]

23 $a = 4$ and $t = -3$

Work out the value of $5at^2$

..... [1]

24 Mia has two ribbons.
One is 60 cm long and the other is 45 cm long.
Mia cuts both ribbons into pieces.
All the pieces have the same length.

Find the **greatest** possible length of each piece of ribbon.

..... cm [1]

25 Here is a number fact.

$56 \times 94 = 5264$

Use this fact to work out these calculations.

$5.6 \times 0.94 =$ .....

$5264 \div 0.56 =$ .....

[2]

26 Trains travel between two stations.
The distance between the two stations is 200 kilometres.

The average speed of two trains is shown in the table.

Train	Average speed
A	100 kilometres per hour
B	80 kilometres per hour

Calculate the difference between the journey times of the two trains.
Give your answer in **minutes**.

..... minutes [2]

27 Write these numbers in order of size, starting with the smallest.

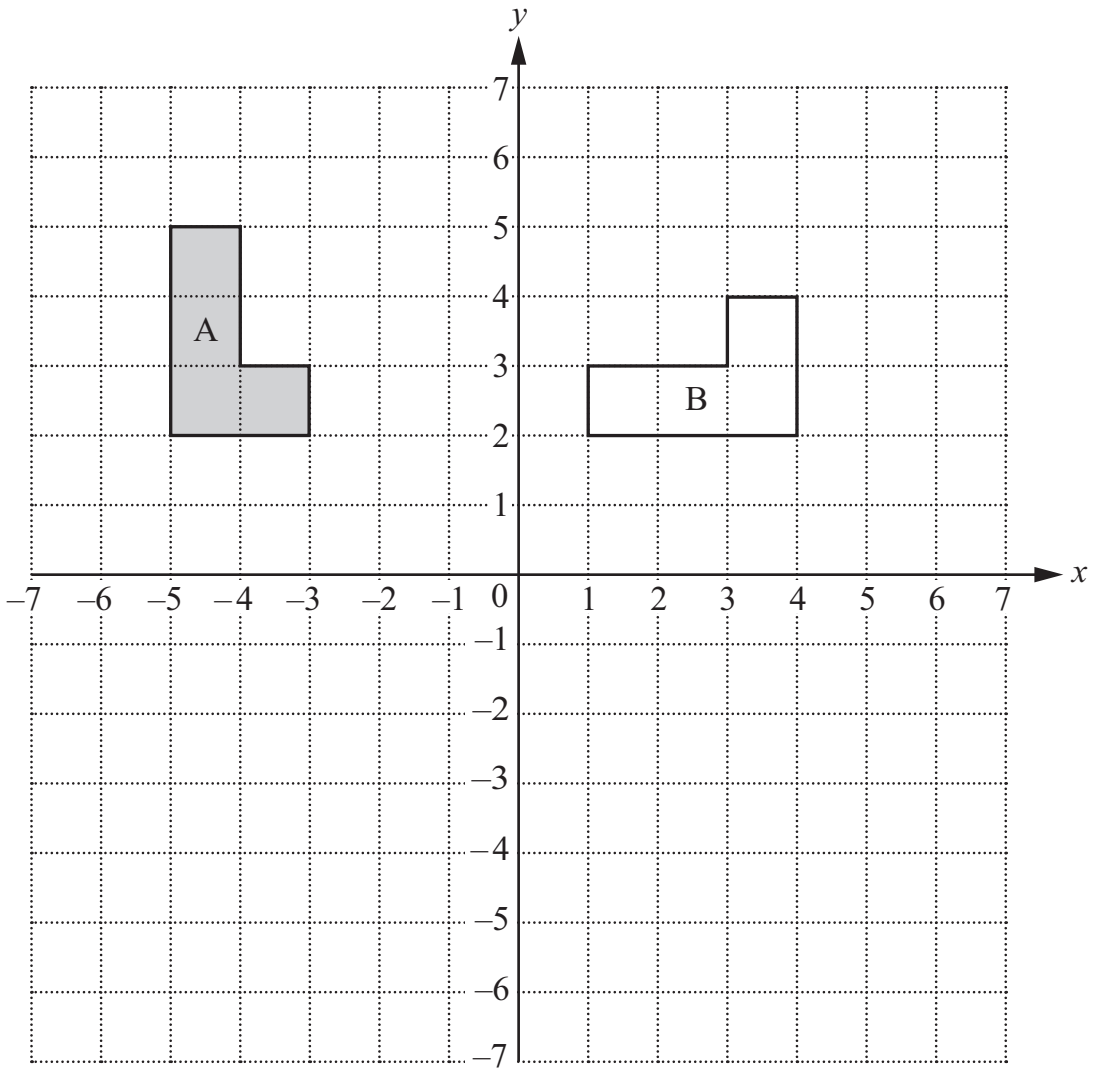
0.48×10^4 16×10^{-2} $7 \div 10^{-3}$ $175\,000 \div 10^4$

....

smallest largest

[2]

28 The diagram shows an object **A** and an image **B**.



A can be mapped onto **B** using a rotation centre $(0, 0)$ followed by a **different** type of transformation.

Complete the descriptions of the two transformations.

First transformation:

Rotation, ... , centre $(0, 0)$.

Followed by second transformation:

.....

[3]