

Cambridge Lower Secondary Checkpoint

CANDIDATE
NAME

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CENTRE
NUMBER

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CANDIDATE
NUMBER

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MATHEMATICS

1112/01

Paper 1

April 2020

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. Blank pages are indicated.

1 Work out the value of $5^2 + \sqrt{121}$



..... [1]

2 Simplify.



$$x^6 \times x^3$$

..... [1]

3 (a) Write $\frac{14}{3}$ as a mixed number.



..... [1]

(b) Write 8 as a percentage of 32

..... % [1]

4 Simplify.



$$-6p + 4p - 5p$$

..... [1]

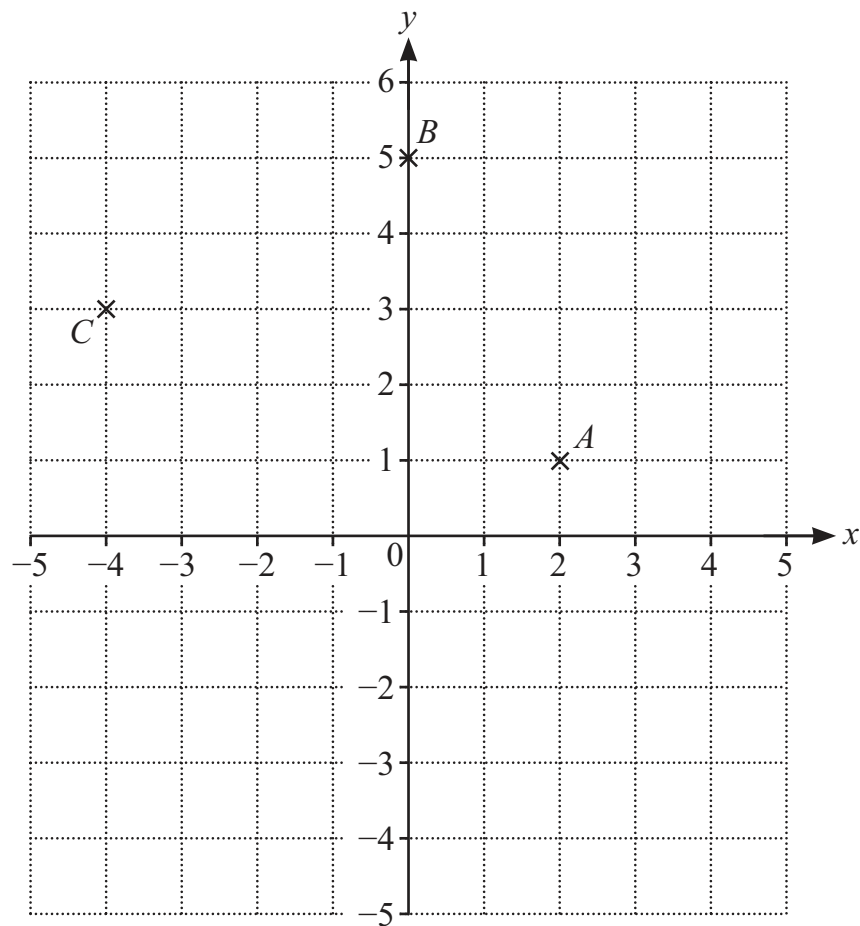
5 Solve.



$$5x + 35 = 75$$

$x =$ [1]

6 The grid shows the positions of three points, A , B and C .

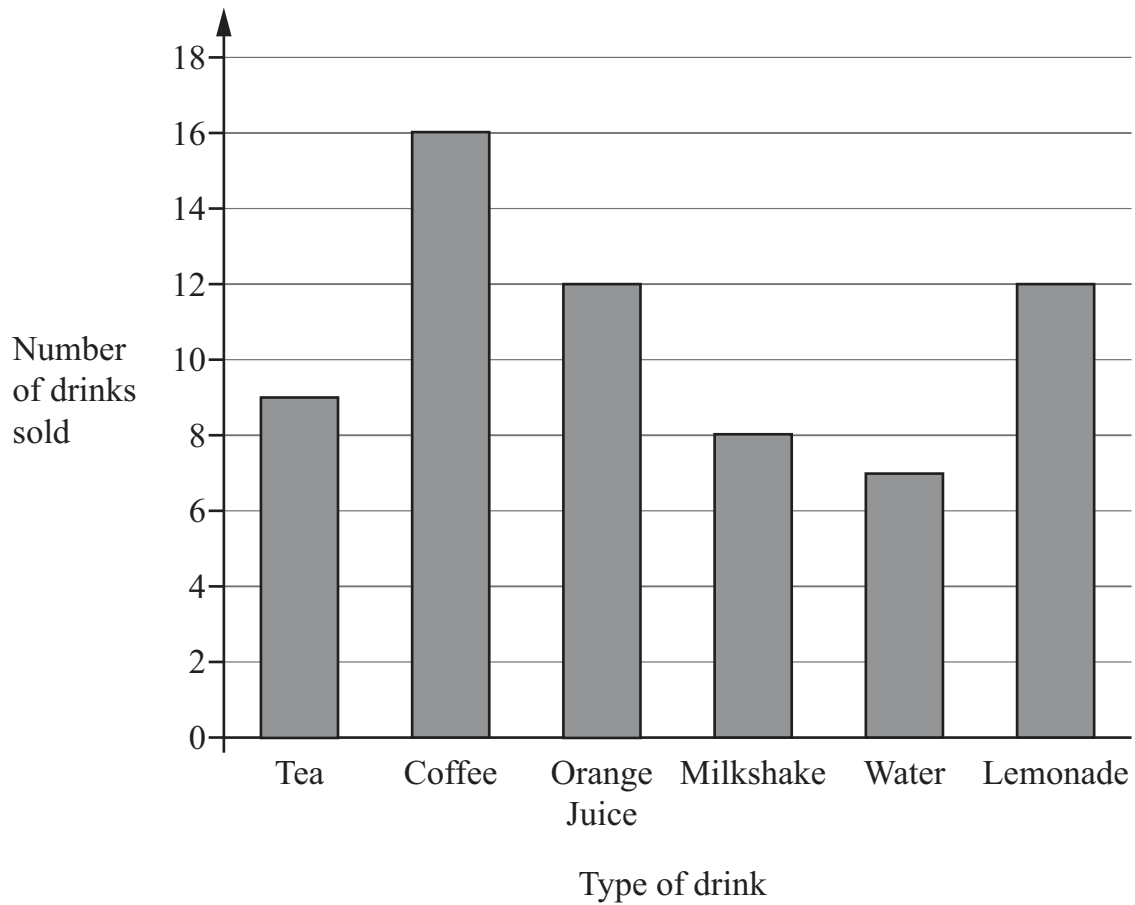


$ABCD$ is a square.

Write down the coordinates of D .

(..... ,) [1]

- 7 This graph shows the number of drinks that are sold in one week.



- (a) Work out how many **more** drinks of lemonade than water are sold.

..... [1]

- (b) Write down the modal drink.

..... [1]

- 8 Write a number in the box to make this statement correct.



$$5 \text{ cm}^2 = \boxed{} \text{ mm}^2$$

[1]

- 9 (a) Complete the table to show equivalent numbers.



The first row is completed for you.

Power of 10	Ordinary number
10^2	100
	10 000
10^5	

[1]

- (b) Work out.

$$1.2 \div 0.01$$

..... [1]

- 10 Mike has six cards each labelled with a letter.



C	H	A	N	C	E
---	---	---	---	---	---

He selects a card at random and records the letter on it.

- (a) Write down a list of all the possible outcomes.

..... [1]

- (b) Write down the probability that Mike selects a card that is labelled with the letter C.

..... [1]

11 Gabriella is 110 cm tall.



Pierre is 154 cm tall.

This is the ratio of their masses.

Gabriella's mass : Pierre's mass
3 : 8

The value of their **total** mass, in kg, is $\frac{1}{4}$ of the value of their **total** height, in cm.

Complete the table.

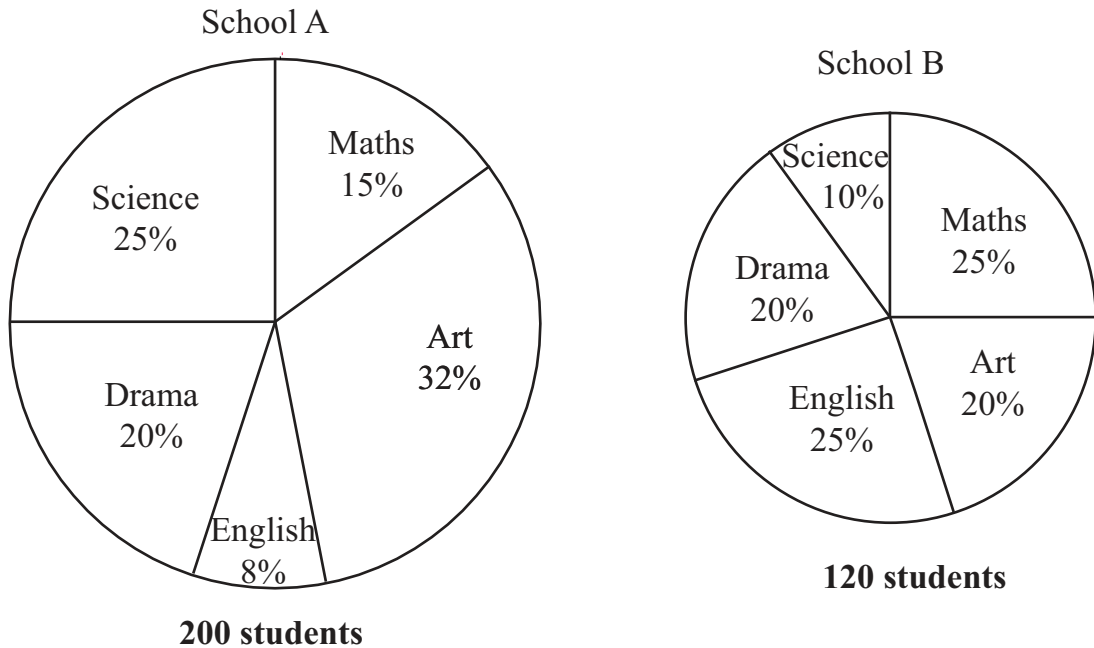
	Height (cm)	Mass (kg)
Gabriella	110	
Pierre	154	

[3]

- 12 Oliver draws two pie charts that show the favourite subjects of students from two different schools.

School A has 200 students.

School B has 120 students.



Oliver says that the **same number** of students in School A and in School B said maths is their favourite subject.

Tick (✓) to show if Oliver is correct or not correct.

Correct ☐ Not correct ☐

You must show your working.

[2]

13 The coordinates of point A are $(3, 8)$ and the coordinates of point B are $(9, 15)$.



Find the coordinates of the midpoint of AB .

(..... ,) [1]

14 Here is a function.



$$x \rightarrow 10x + 2$$

Fill in the missing numbers.

$$3 \rightarrow 32$$

$$7 \rightarrow 72$$

$$4 \rightarrow \boxed{}$$

$$\boxed{} \rightarrow 2$$

[1]

15 Work out.




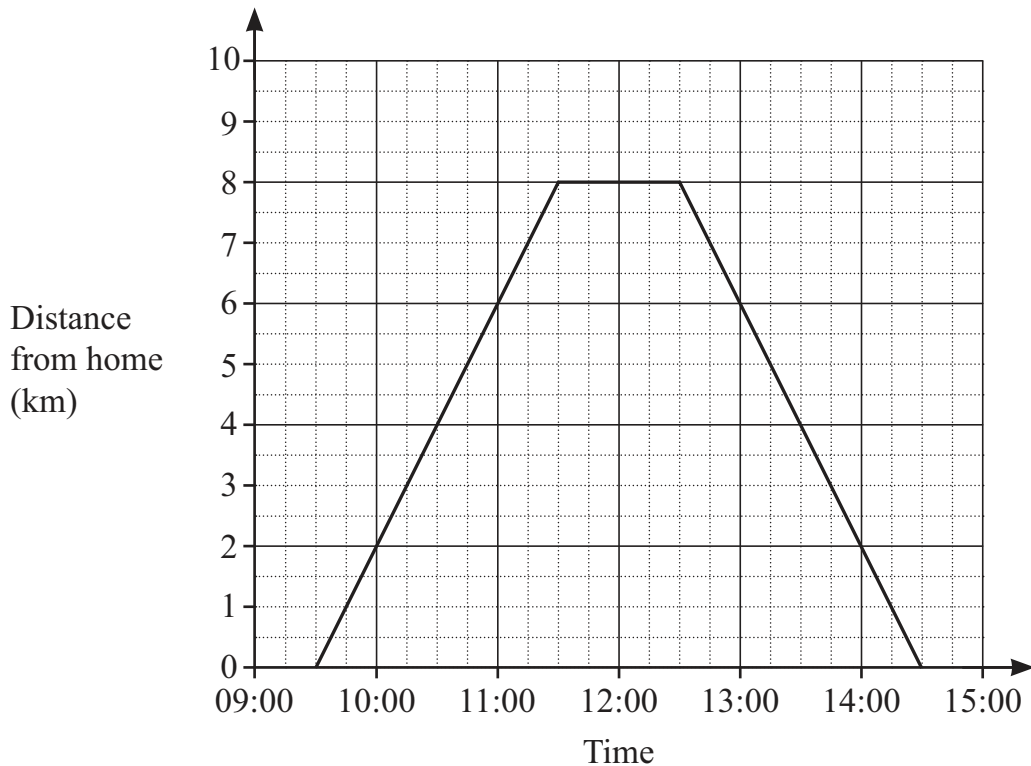
$$\frac{7}{12} \times \frac{9}{14}$$

Give your answer as a fraction in its simplest form.

..... [2]

16 Angelique leaves home at 09:30 to go for a walk.

 The graph shows information about her walk.



She walks 8 km, stops for a rest and then returns home the same way.

(a) Work out her speed on the return part of her journey.

..... km/h [1]

(b) Carlos is Angelique's brother.

He leaves home at 10:00

He walks at 6 km/h in the same direction as Angelique.

He walks for 90 minutes.

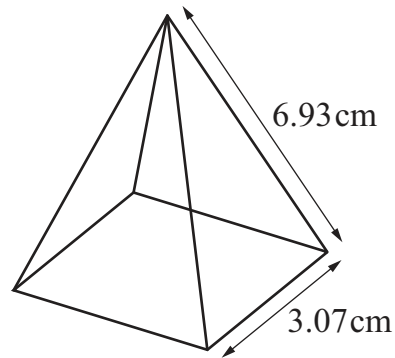
Draw a line on the graph to show his walk.

[1]

(c) Estimate the time when Angelique and Carlos meet.

..... [1]

- 17** This square-based pyramid is made of wire.
 The edges of the base all have length 3.07 cm.
 The other edges all have length 6.93 cm.



NOT TO
SCALE

Find the total length of wire.

..... cm [2]

- 18** Here is a number fact.



$$13\,442 \div 47 = 286$$

Use this fact to work out

(a) $13.442 \div 4.7$

..... [1]

(b) 2.86×94

..... [1]

- 19 A rectangle has sides of length 1200 m and 700 m.



Draw the rectangle to scale.

Use a scale of 1 cm represents 200 m.

Scale 1 cm = 200 m
[2]

- 20 Complete these calculations.



$$7.4 + \boxed{} = 3.1$$

$$9.4 - -5.7 = \boxed{}$$

[2]

21 Safia wants to find out whether people like a new airport.



She surveys 20 people who work at the airport one morning in March to find their opinion of the airport.

Write down two ways Safia could improve her data collection method.

1

.....

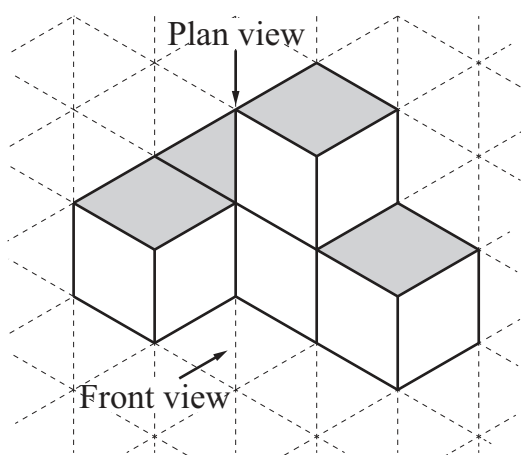
2

..... [2]

22 The diagram shows an object made from 5 cubes.

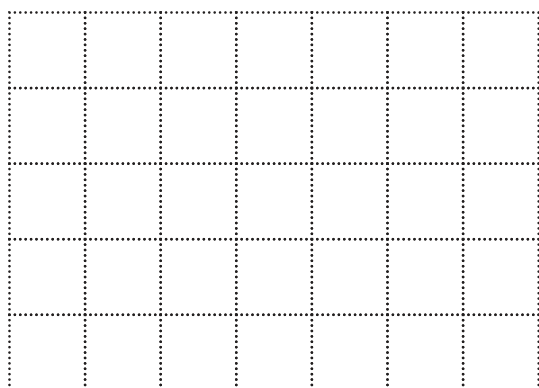


It has been drawn on isometric paper.

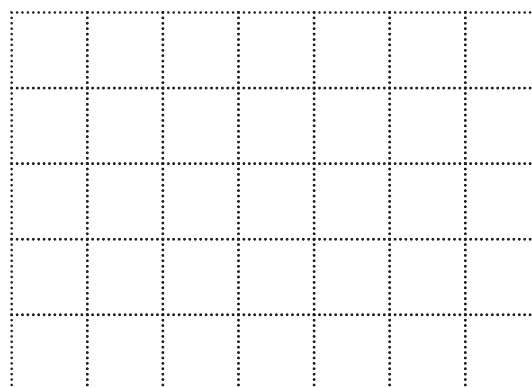


Draw the plan and the front elevation of the object on the grids below.

Plan



Front elevation



[2]

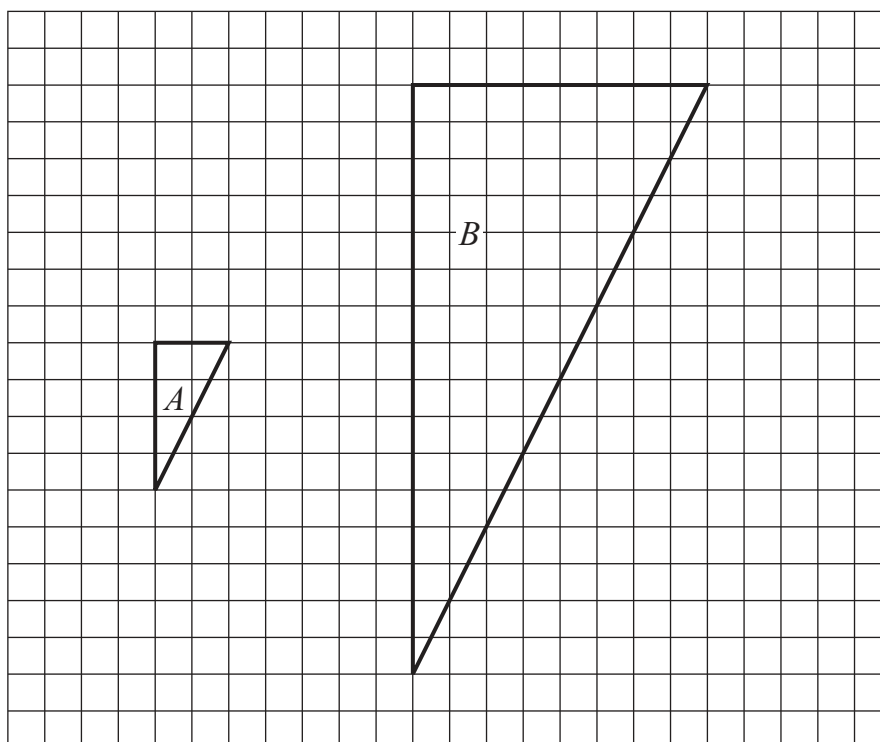
23 Change the 12-hour clock times into 24-hour clock times.



12-hour clock	24-hour clock
6.15 pm	
9.59 am	
12.01 am	

[2]

24 Triangle B is an enlargement of triangle A .



Work out the scale factor of the enlargement.

..... [1]

25 The table shows the ages of a group of boys and girls.



Age (in years)	Number of boys	Number of girls
10	8	8
11	7	10
12	8	14
13	12	6
14	0	2
15	0	2
16	10	0
17	6	0

Tick (✓) to show if these statements are true or false.

True

False

There are more girls aged 12 years than boys aged 12 years.

☐
☐

The range of ages for the boys is higher than the range of ages for the girls.

☐
☐

[1]

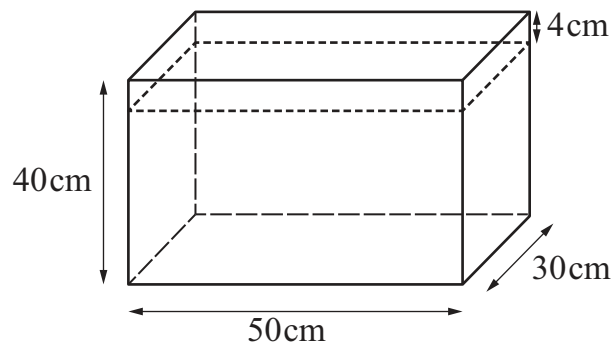
26 Find the fraction half-way between $\frac{2}{3}$ and $\frac{5}{6}$



Write your answer as a fraction in its simplest form.

..... [2]

27 The diagram shows a fish tank.



NOT TO
SCALE

The fish tank has a capacity of 60 litres.

Lily uses a 2000 ml jug to put water in the fish tank.

She stops when the water is 4 cm from the top.

Work out the number of jugs of water that Lily uses.

..... [3]

28 Put these calculations in order of size from smallest to largest.

K You do **not** need to work out each value.

9×0.85

$9 \div 0.18$

$9 \div 0.5$

9×0.1

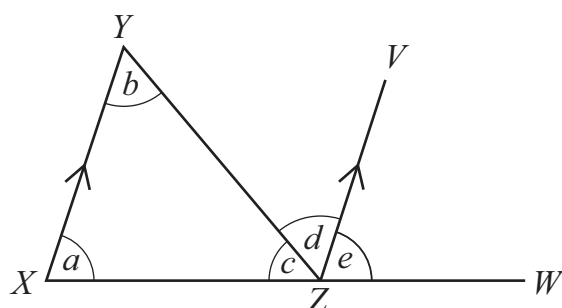
.....
smallest

.....
largest

[1]

29 The diagram shows triangle XYZ .

K XY is parallel to ZV .
 XZW is a straight line.



NOT TO
SCALE

Jamila proves that the angles of triangle XYZ add up to 180° .

Complete her proof.

Angles a and e are equal because they are angles.

Angles b and are equal because they are alternate angles.

Angles c , d and e add up to 180° because

.....

So the angles in triangle XYZ add up to 180° .

[2]