Cambridge Assessment International Education

Cambridge Lower Secondary Checkpoint

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

7180639301

MATHEMATICS **1112/02**

Paper 2 **October 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 may 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.

IB20 10_1112_02/7RP

1 Use a whole number to complete the statement.

$$3.15 \times 0.04 = (3.15 \times \text{.....}) \div 100$$

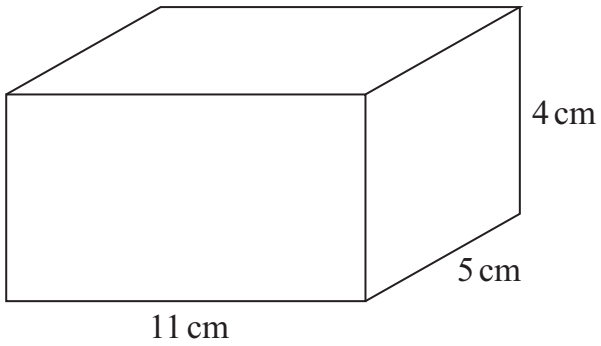
[1]

2 Lily wants to count the number of cars of different colours that drive past her school.

Design a data collection sheet that Lily could use.

[2]

3 The diagram shows a cuboid.



NOT TO SCALE

Calculate the volume of the cuboid.

..... cm^3 [1]

4 The cost to hire a hall is \$20 plus \$15 per hour.

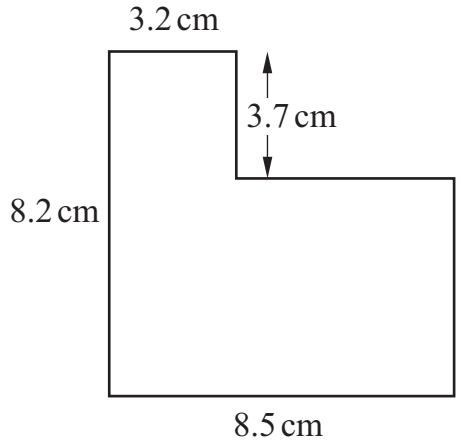
(a) Write down a formula for the cost \$$C$ to hire the hall for h hours.

$C =$ ..... [1]

(b) Use the formula to work out the cost to hire the hall for 6 hours.

\$ ..... [1]

5 This shape is made from two rectangles.



NOT TO SCALE

Calculate the area of the shape.

..... cm^2 [2]

6 Rajiv puts $2400 in a savings account.
One year later it is worth $2580

Work out the annual rate of interest.

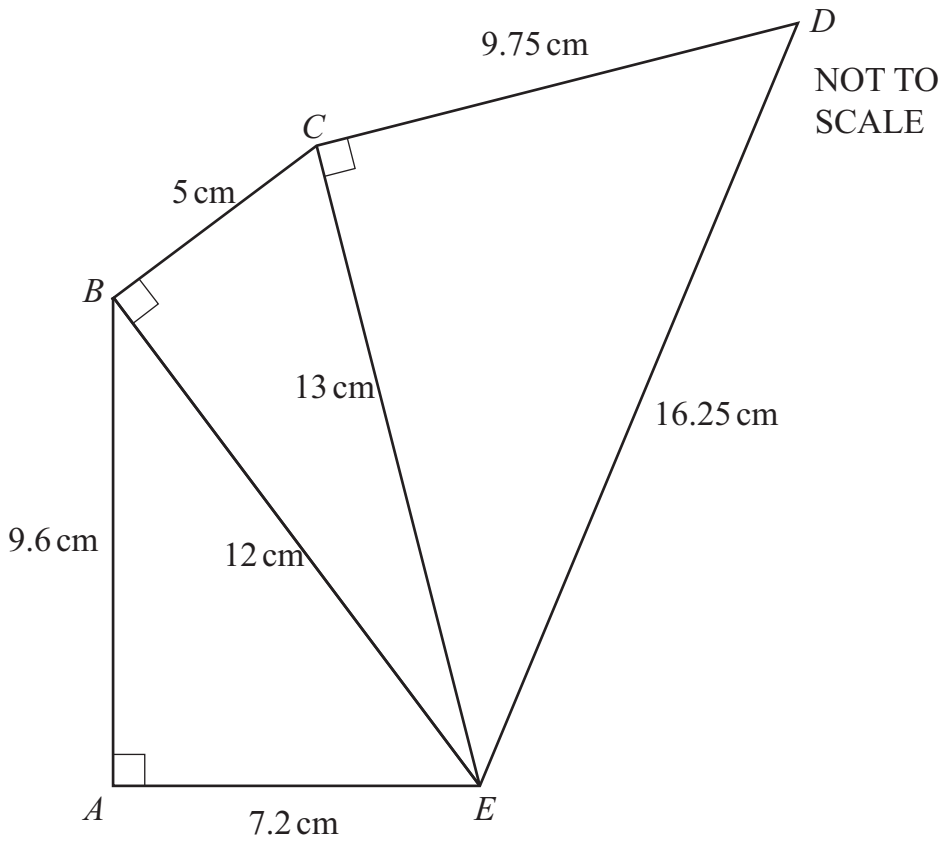
..... % [2]

7 Draw a ring around the point which does **not** lie on the line $y = 3x + 2$

(2, 8) (0, 4) (100, 302) (9, 29)

[1]

8



Write down the length of the hypotenuse of triangle *BCE*.

..... cm [1]

9 Pink paint is made by mixing 9 parts of white paint with 5 parts of red paint.

Find the number of parts of red paint needed to mix with 54 parts of white paint.

..... [1]

10 **(a)** Here is a calculation.

$87 \div 14 = 6$ remainder 3

Draw a ring around the correct fraction for the answer to this calculation.

$\frac{6}{3}$ $\quad 6\frac{3}{87}$ $\quad 14\frac{3}{6}$ $\quad 6\frac{3}{14}$ $\quad 3\frac{6}{14}$

[1]

(b) Use two whole numbers to complete this calculation.

$\square \div \square = 9\frac{2}{13}$

[1]

11 A set of data has fewer than 6 values.
The median of the set of data is 5 but none of the values is 5

Write down a set of possible values for this data.

..... [1]

12 Draw a ring around each of the **two** ratios that are equivalent.

2 : 3 $\quad$ 4 : 3 $\quad$ 3 : 2 $\quad$ 6 : 8 $\quad$ 15 : 10

[1]

13 Carlos carries out a survey on clubs at school.
This is one of the questions in his survey.

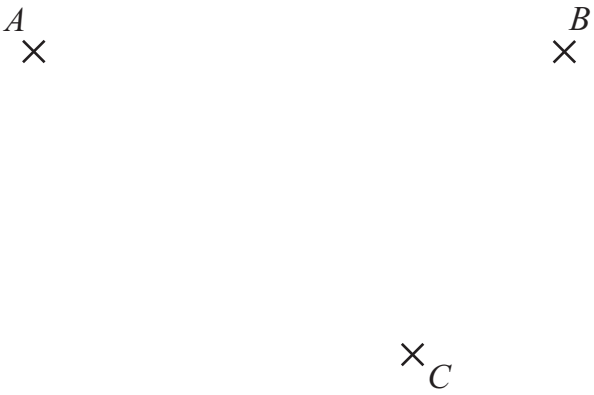
Do you agree that there should be more clubs to go to at school?					
Yes	☐	No	☐	Don't mind	☐

Write down one reason why this is **not** a good question.

.....

..... [1]

14 Here is a scale drawing showing three cities.

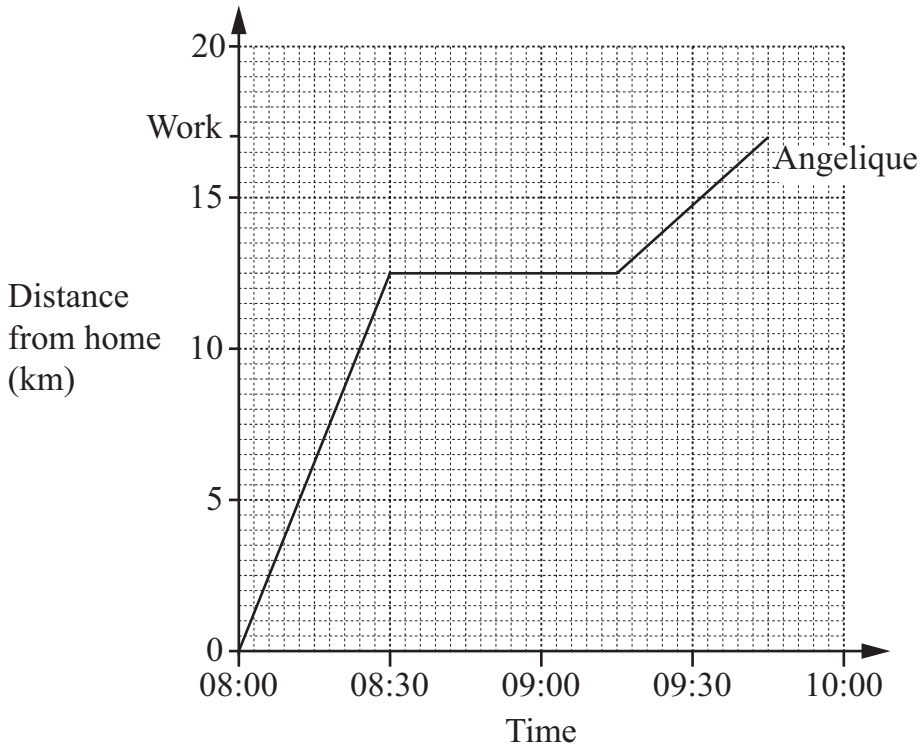


The real-life distance from city A to city B is 140 km.

Find the real-life distance from city B to city C.

..... km [2]

15 The graph shows Angelique's journey to work.



(a) Write down the number of minutes Angelique stops for during her journey.

..... minutes [1]

(b) Safia takes exactly the same route to work.
She leaves at 08:30
It takes her 45 minutes to get to work.
She travels at a constant speed.

Draw Safia's journey on the grid.

[1]

(c) Safia passes Angelique on her way to work.

Write down the time when she passes Angelique.

..... [1]

16 **(a)** Chen throws a coin 120 times.
He gets 54 heads.

Write down the relative frequency that Chen gets a head.

..... [1]

(b) Jamila also throws a coin 120 times.
The relative frequency that she gets a head is 0.575

Work out how many **more** heads Jamila gets than Chen gets.

..... [2]

17 Write 252 as a product of its prime factors.

..... [2]

18 A supermarket puts coloured labels on bottles of drinks to show how much sugar each contains per 100 m*l*.

Each label is either green or yellow or red.

Colour of label	**Amount of sugar per 100 m*l* of drink**
Green	Less than 2.4 g
Yellow	Between 2.4 g and 6.2 g
Red	More than 6.2 g

The supermarket sells lemonade in bottles containing 250 m*l*.
Each bottle contains 14.5 g of sugar.

Work out which colour label should be put on these bottles of lemonade.
Draw a ring around your answer.

Green Yellow Red

Show how you worked out your answer.

[2]

19 Calculate.

$$\frac{\sqrt{7}+4.1^3}{3.1\times 0.2}$$

..... [1]

20 40% of a number is 80

Find 55% of this number.

..... [2]

21 Use a trial and improvement method to find an approximate positive solution to this equation.

$$x^2 - 3x = 50$$

Give your answer correct to one decimal place.
You may not need all the rows.
One value has been done for you.

x	$x^2 - 3x$	Too big or too small?
10	70	too big

$x =$ ..... [3]

22 Mike has 450 dollars and spends 360 dollars.
Gabriella has 3600 dollars and spends 2700 dollars.

Tick (✓) to show who spends a greater proportion of their money.

Mike ☐ Gabriella ☐

Show how you worked out your answer.

[2]

23 Convert 15 miles into kilometres.

..... km [1]

24 A car travels at 72 km/h.

Work out the number of **metres** the car travels in one **second**.

..... m [2]

25 Round each number to 3 significant figures.

0.0045146

.....

778 893.2

.....

[2]

26 Shape A is enlarged by a scale factor of 2 to make shape B.
Shape B is then rotated to make shape C.
Shape C is then translated to make shape D.

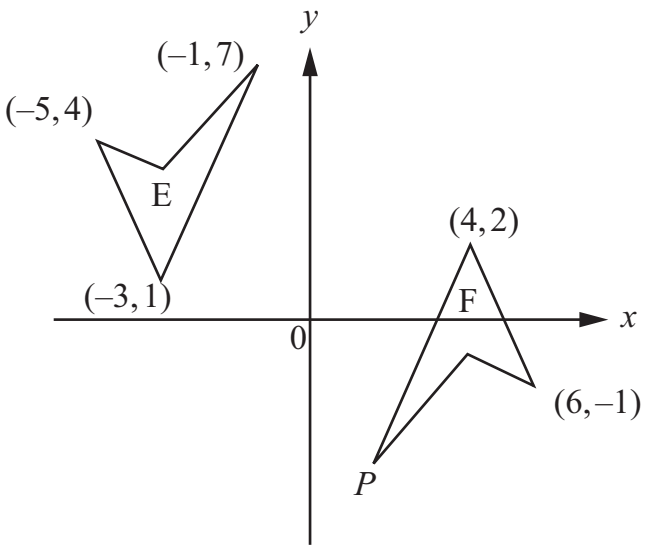
Tick (✓) to show if each pair of shapes are congruent or not congruent.

	Congruent	**Not congruent**
A and B	☐	☐
A and C	☐	☐
B and D	☐	☐

[1]

27 Shapes E and F are congruent.

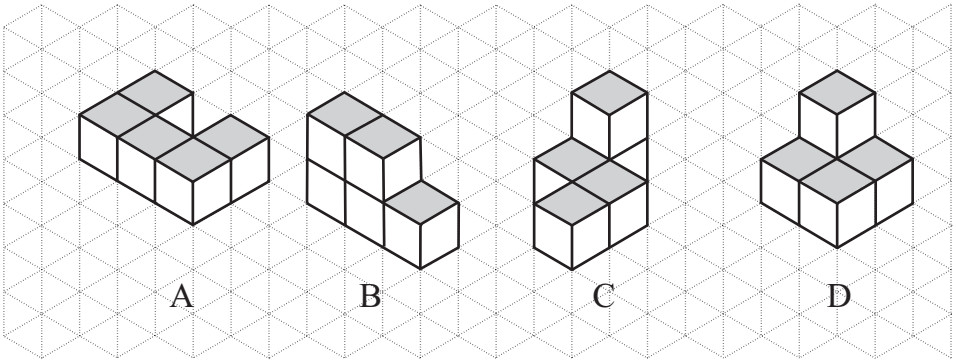
Write down the coordinates of point P.



NOT TO SCALE

(..... , ...) [1]

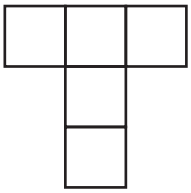
28 **(a)** The diagram shows shapes A, B, C and D each made using 5 identical cubes.



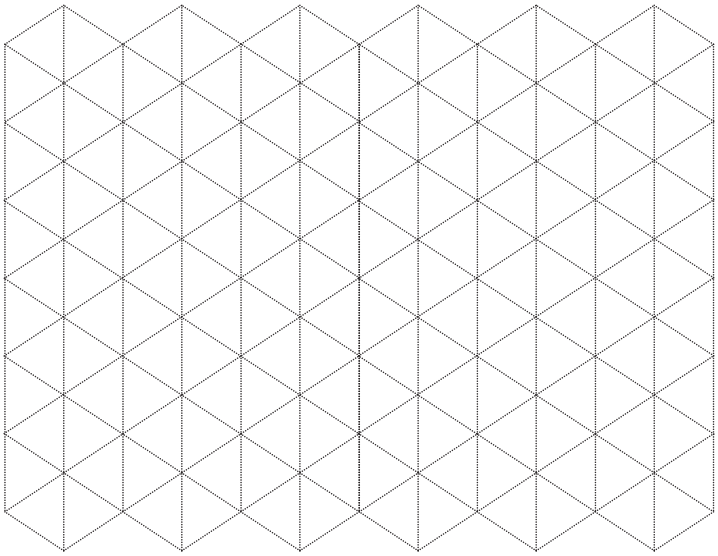
Write down the shape that **does not** have reflection symmetry.

..... [1]

(b) The diagram shows the **front view** of another shape made using 5 cubes.



Draw this shape on the isometric grid.



[2]

29 The table shows data about the life of two types of battery.

	Median (hours)	**Range (hours)**
Battery A	1.8	0.4
Battery B	1.3	0.6

Use the median and the range to compare the two types of battery.

median .....

.....

range .....

..... [2]