



Cambridge Lower Secondary Checkpoint

CANDIDATE
NAME

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CENTRE
NUMBER

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CANDIDATE
NUMBER

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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.

- 1 Use a whole number to complete the statement.

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

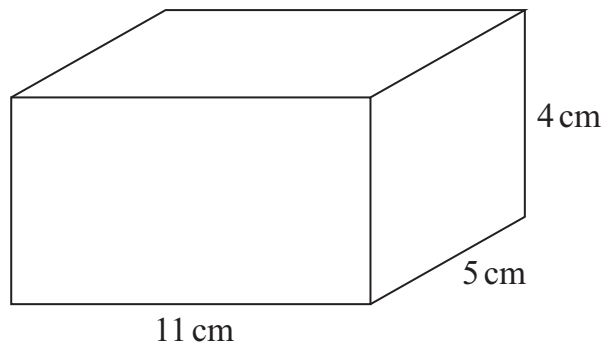
[1]

- 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.

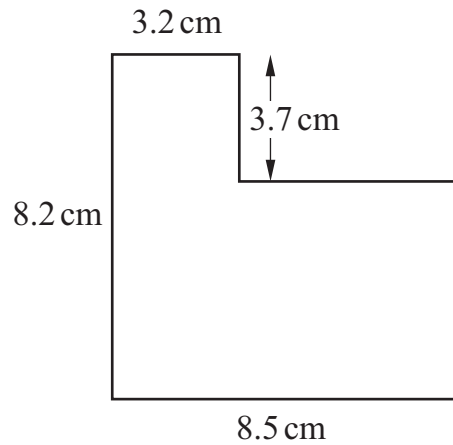
(a) Write down a formula for the cost $\$C$ to hire the hall for h hours.

$C =$ [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.

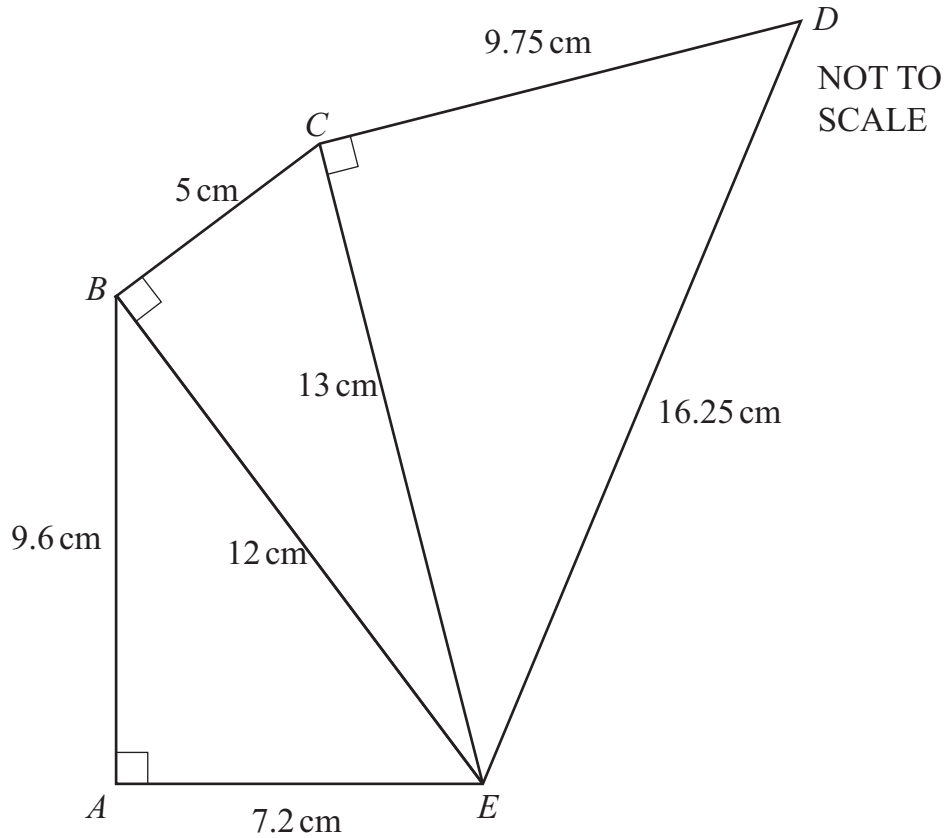
..... % [2]

- 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.

$$87 \div 14 = 6 \text{ remainder } 3$$

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.

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

[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

4 : 3

3 : 2

6 : 8

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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

.....

..... [1]

- 14 Here is a scale drawing showing three cities.

A
×

B
×

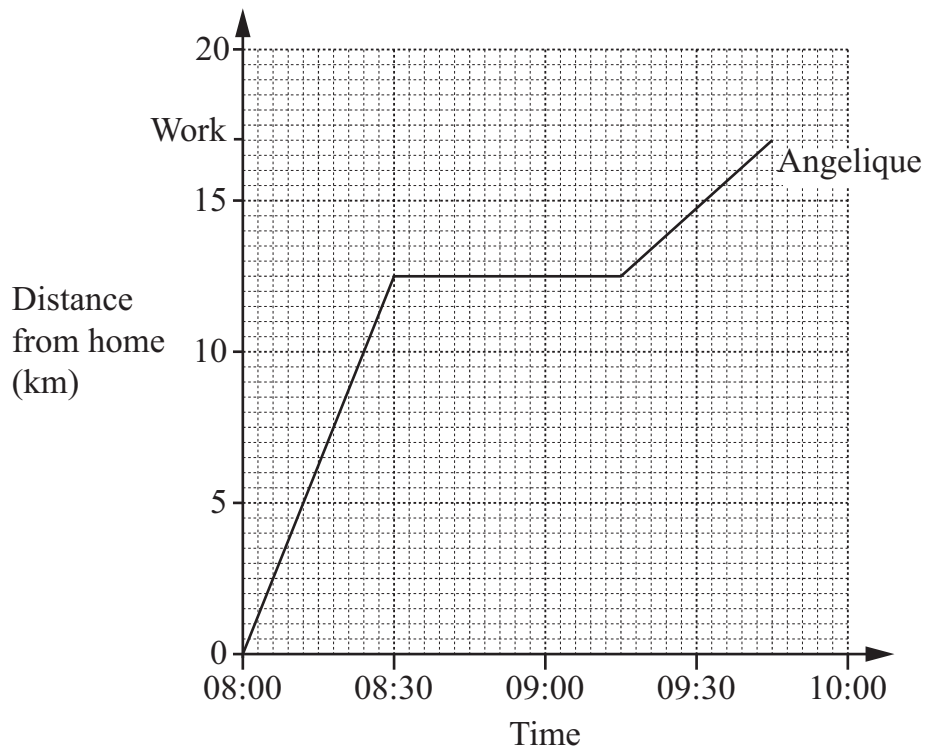
×
 C

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 ml.

Each label is either green or yellow or red.

Colour of label	Amount of sugar per 100 ml 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 ml.
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.

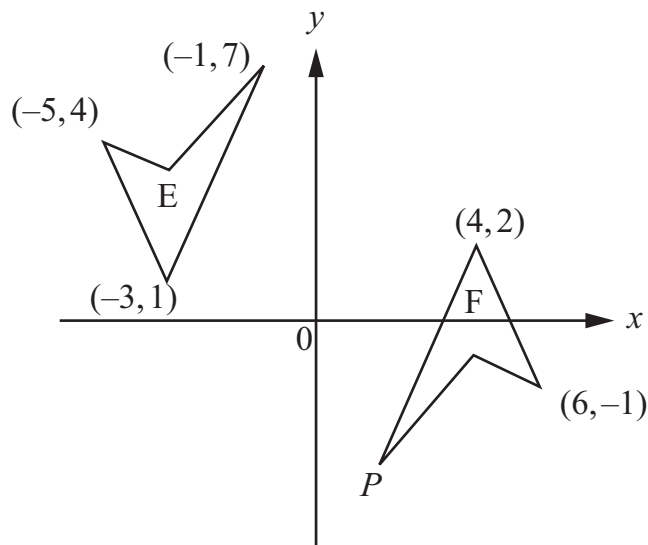
Tick (✓) to show if each pair of shapes are congruent or not congruent.

	Congruent	Not congruent
A and B	<input type="checkbox"/>	<input type="checkbox"/>
A and C	<input type="checkbox"/>	<input type="checkbox"/>
B and D	<input type="checkbox"/>	<input type="checkbox"/>

[1]

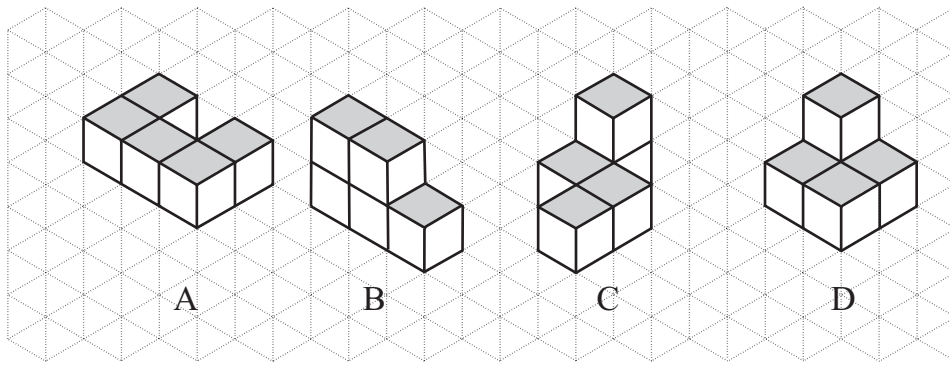
27 Shapes E and F are congruent.

Write down the coordinates of point P .



(..... ,) [1]

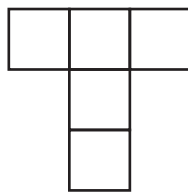
28 (a) The diagram shows shapes A, B, C and D each made using 5 identical cubes.



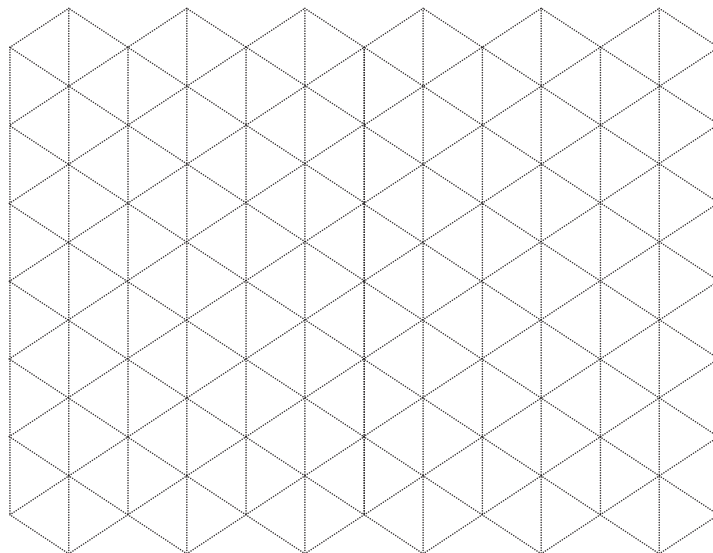
Write down the shape that **does not** have reflection symmetry.

..... [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]

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