Cambridge Secondary 1 Checkpoint

Cambridge International Examinations
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CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER			

0480206125

MATHEMATICS **1112/01**

Paper 1 **October 2018**

1 hour

Candidates answer on the Question Paper.

Additional Materials: Geometrical instruments
Tracing paper (optional)

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, glue or correction fluid.

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.
NO CALCULATOR ALLOWED.

You should show all your working in the booklet.
The number of marks is given in brackets [ ] at the end of each question or part question.
The total number of marks for this paper is 50.

This document consists of **16** printed pages.

CAMBRIDGE International Examinations

1 Work out $53 \div 7$

Give your answer correct to two decimal places.

..... [2]

2 Tick (✓) a box to show whether the answer to each of these calculations is less than 30, equal to 30 or more than 30

	Less than 30	Equal to 30	More than 30
10% of 280	☐	☐	☐
25% of 140	☐	☐	☐
$\frac{1}{5}$ of 150	☐	☐	☐
80% of 40	☐	☐	☐

[2]

3 Write a number in each box to make a true statement.

$6 \quad - \quad (-2) \quad = \quad \square$

$32 \quad \div \quad (-8) \quad = \quad \square$

$\square \quad \times \quad (-4) \quad \times \quad 3 \quad = \quad 24$

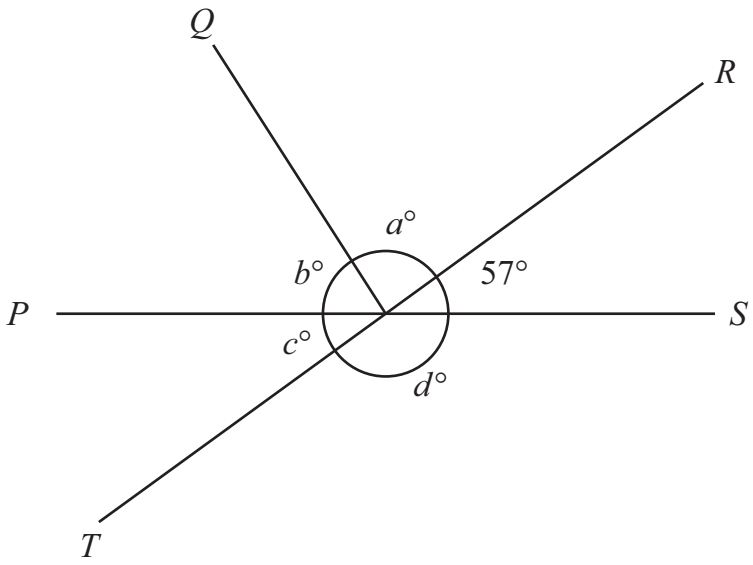
[2]

4 Yuri is 1.6 m tall and Lily is 140 cm tall.

Write down the ratio of Yuri's height to Lily's height.
Give your answer in its simplest form.

..... [2]

5 The diagram shows 5 angles.



PS and *RT* are straight lines.

Draw a ring around an angle that must be equal to 123°.

a *b* *c* *d*

Tick (✓) the reason that **best** explains your answer.

Vertically opposite angles are equal	☐
Angles on a straight line add up to 180°	☐
Angles around a point add up to 360°	☐

[1]

6 **(a)** Draw a ring around the best estimate of $\sqrt{83}$

8.7 9.1 9.5 41.5

[1]

(b) Draw a ring around the value of 7^0

$\frac{1}{7}$ 0 1 7

[1]

7 Work out.

(a) $3.8 + 4 \times 2.5$

..... [1]

(b) $37 \times 45 + 63 \times 45$

..... [1]

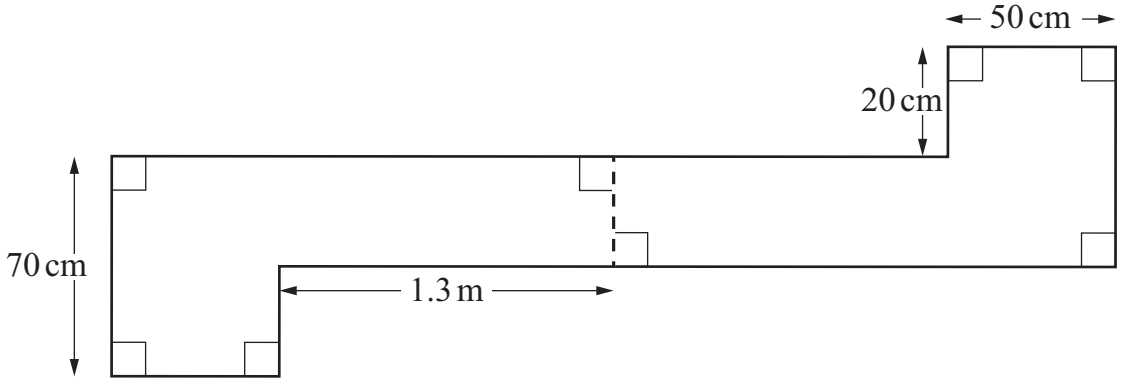
8 Here is a number statement.

$$\frac{3}{4} \times 28 = \frac{1}{3} \text{ of } y$$

Find the value of y.

$y =$ ..... [2]

9 The diagram shows a shape with rotational symmetry of order 2

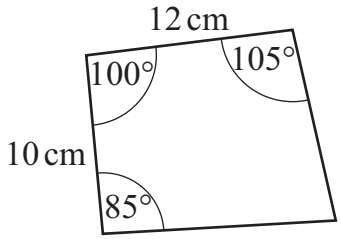


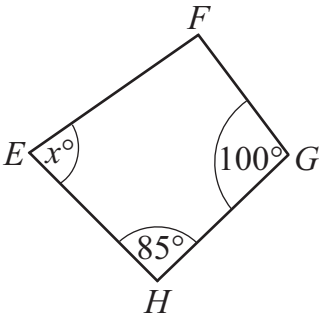
NOT TO SCALE

Work out the perimeter of the shape.
Give your answer in centimetres.

..... cm [3]

10 These quadrilaterals are congruent.





NOT TO SCALE

(a) Write down the side of quadrilateral *EFGH* that must be 10 cm long.

..... [1]

(b) Work out the value of x.

$x =$ ..... ° [2]

11 The students in Class 9L have a test.
The table shows some information about their marks.

Mark	Frequency
0 – 9	
10 – 19	11
20 – 29	
30 – 39	4

There are 28 students in the class.
The modal class interval is 20 – 29
The lowest mark is 7 marks.

Complete the frequency column. [2]

12 Two fractions are $\frac{5}{4}$ and $\frac{4}{5}$

Write down which fraction is closer to 1
Explain your answer.

..... is closer to 1 because .....

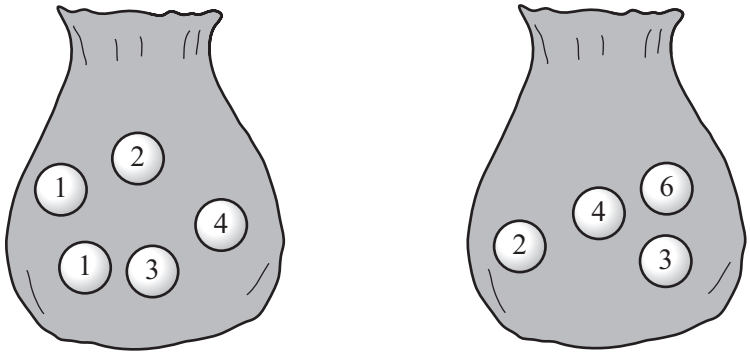
..... [1]

13 Tick (✓) to show whether each of these facts about the line $y = 3x - 2$ is true or false.

	True	False
The line passes through the point (7, 19)	☐	☐
When x goes up by 1, y increases by 3	☐	☐
The line is parallel to the line $y = 4x - 2$	☐	☐
The line is steeper than the line $y = 2x + 1$	☐	☐

[2]

14 Blessy has two bags containing numbered counters.



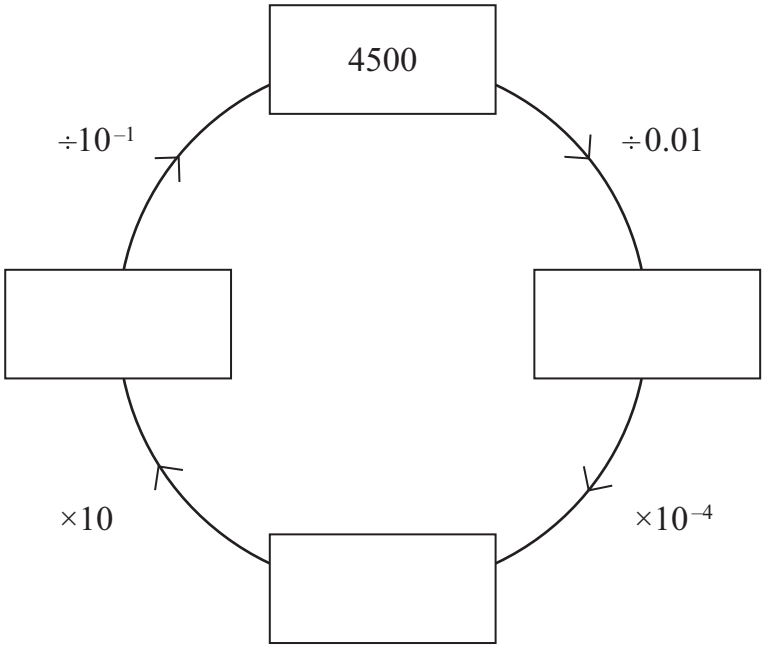
Bag A Bag B

She takes one counter at random from Bag A and another counter at random from Bag B. She **adds** the numbers on her two counters.

Find the probability that Blessy's answer is more than 6

..... [3]

15 Complete the boxes in this diagram.



[2]

16 Complete the multiplication grid.

×	8	0.2
……..…	6.4	……..…
0.3	……..…	……..…

[3]

17 Rajiv is investigating the use of a leisure centre.

(a) Tick (✓) to show if these are **primary** or **secondary** sources of information.

	Primary	Secondary
Rajiv gives questionnaires to people who use the leisure centre.	☐	☐
Rajiv reads a local newspaper article.	☐	☐
Rajiv looks at the leisure centre website.	☐	☐

[1]

(b) Here is one question from Rajiv's questionnaire.

How many times did you use the leisure centre last month?

- Once ☐
- 2 or 3 times ☐
- 4 or 5 times ☐
- More than 6 times ☐

Tick one box.

Describe **one** error in this question.

.....

..... [1]

18 A dentist is investigating this question.

"Do people who use an electric toothbrush have healthier teeth than those who use a normal toothbrush?"

She examines each patient's teeth and gives the teeth a score.
Patients with **lower** scores have healthier teeth.
Her results are shown in the diagram.

Use a normal toothbrush								Use an electric toothbrush									
				7	7	5	**0**	5	6	7	8	8	9				
9	9	8	5	4	2	0	**1**	0	0	1	3	4	5	5	6	7	9
	8	5	5	4	3	0	**2**	0	0	2	3	4	5	5			
	6	6	5	3	2	0	**3**	1	2	6	8						
						0	**4**										

sample size = 23 sample size = 27

Key: 0 | 3 | 1 represents a score of 30 for a patient using a normal toothbrush and a score of 31 for a patient using an electric toothbrush

Work out an appropriate **average** for both groups.

Name of average used .....

Average score for patients who use a **normal** toothbrush .....

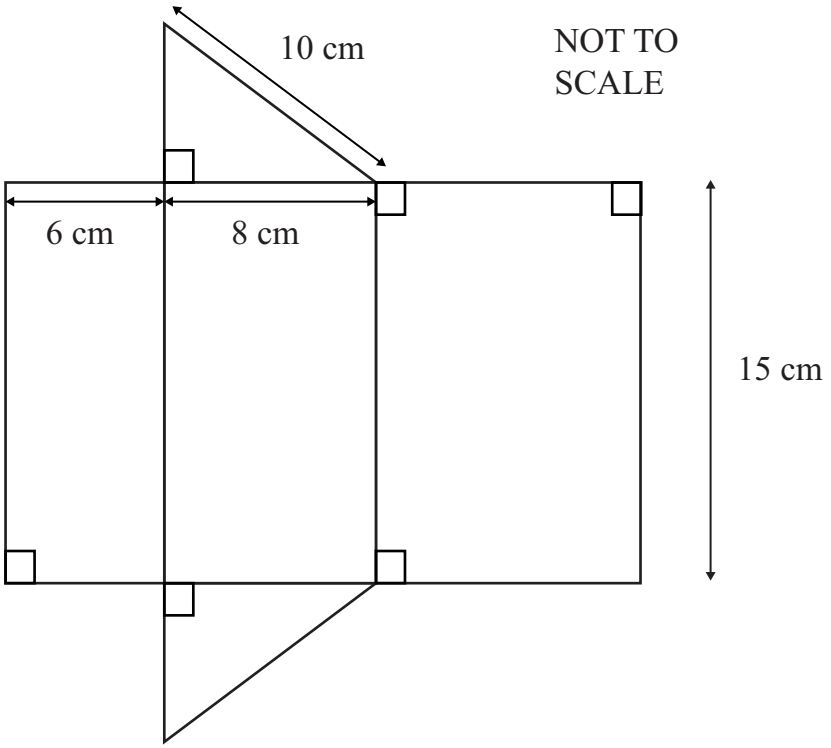
Average score for patients who use an **electric** toothbrush .....

Write a conclusion to the dentist's question using this information.

.....

..... [3]

19 The diagram shows the sketch of a net of a triangular prism.



Work out the total surface area of the prism.

..... cm^2 [3]

20 A tap fills a container with water at a rate of 0.25 litres per second.
It takes $7\frac{1}{2}$ minutes to fill the container from empty.

Work out the amount of water in the full container.

..... litres [2]

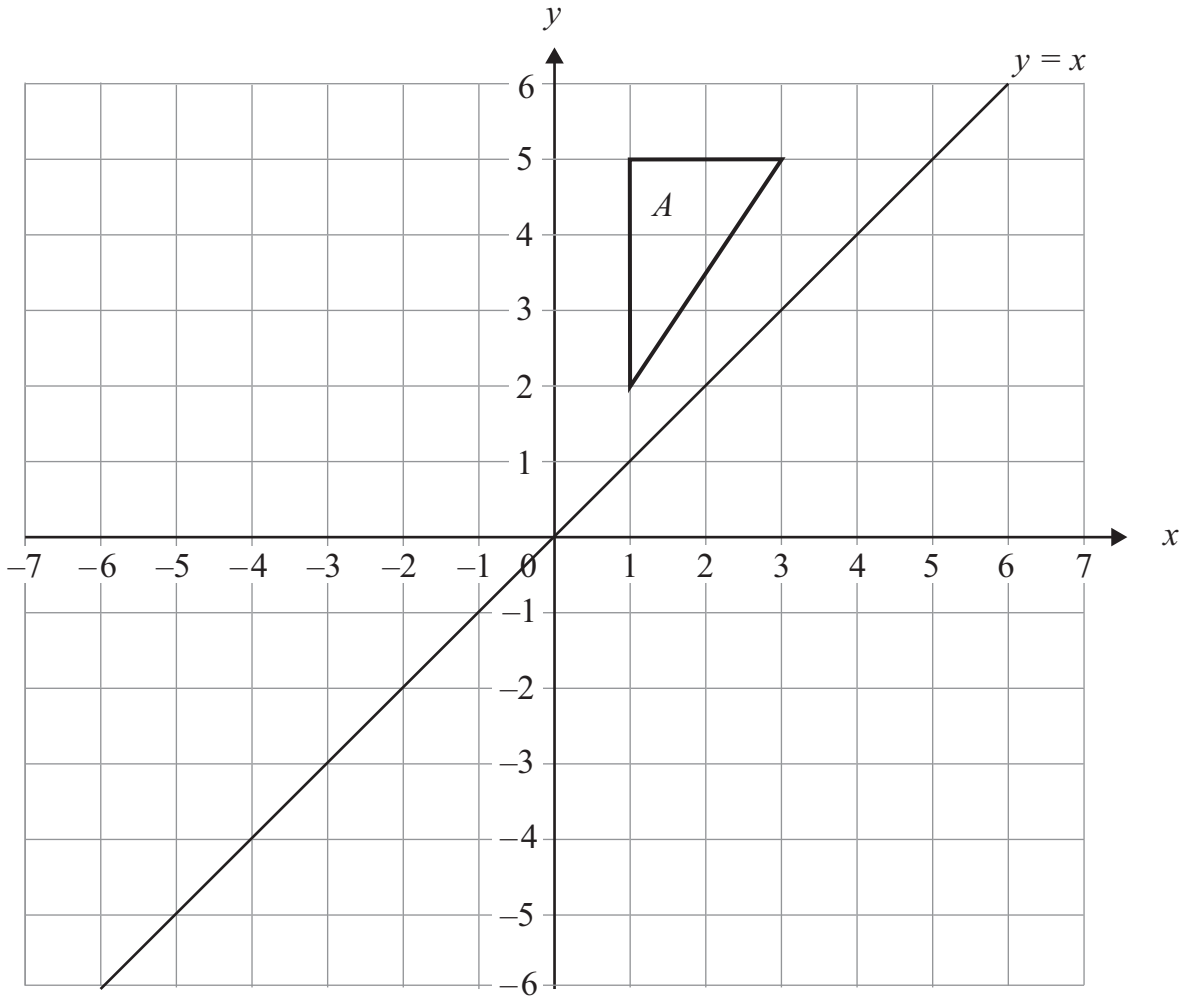
21 **(a)** Write down the order of rotational symmetry of a parallelogram.

..... [1]

(b) Write down the number of lines of symmetry of a parallelogram.

..... [1]

22 The diagram shows a triangle, A, and the line, $y = x$, drawn on a grid.



Triangle A is reflected in the line $y = x$.
The **new** triangle is then reflected in the y-axis.

Describe fully the **single** transformation which maps triangle A to its final position.

.....

..... [3]

23 The graph of $2x + 4y = 15$ is a straight line.

Work out the gradient of the line.

..... [1]