Cambridge Secondary 1 Progression Test

Question paper

Cambridge Secondary 1

55 minutes

Mathematics Paper 1

Stage 8

6766365181

Name .....

Additional materials: Ruler
Tracing paper
Geometrical instruments

READ THESE INSTRUCTIONS FIRST

Answer **all** questions in the spaces provided on the question paper.

Calculators are **not** allowed.

You should show all your working on the question paper.

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 45.

For Teacher's Use	
Page	**Mark**
1	
2	
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11	
12	
13	
14	
Total	

DC (CW/SW) 90758/9RP

CAMBRIDGE
International Examinations

1 Write ten million as a power of 10

..... [1]

2 Find the lowest common multiple of 24 and 15

..... [1]

3 Maya wants to paint two doors.
She can paint each door red or blue or green.

List **all** the possible ways she could paint the two doors.

The first four are done for you.

Door 1	Door 2
Red	Red
Red	Blue
Red	Green
Blue	Red

You may not need to use all the lines in the table. [1]

For Teacher's Use

4 Complete these calculations.

(a) $\square^2 = 64$ [1]

(b) $640 \times \square = 64$ [1]

5 Simplify this expression.

$11c - 6d - 2c + 10d$

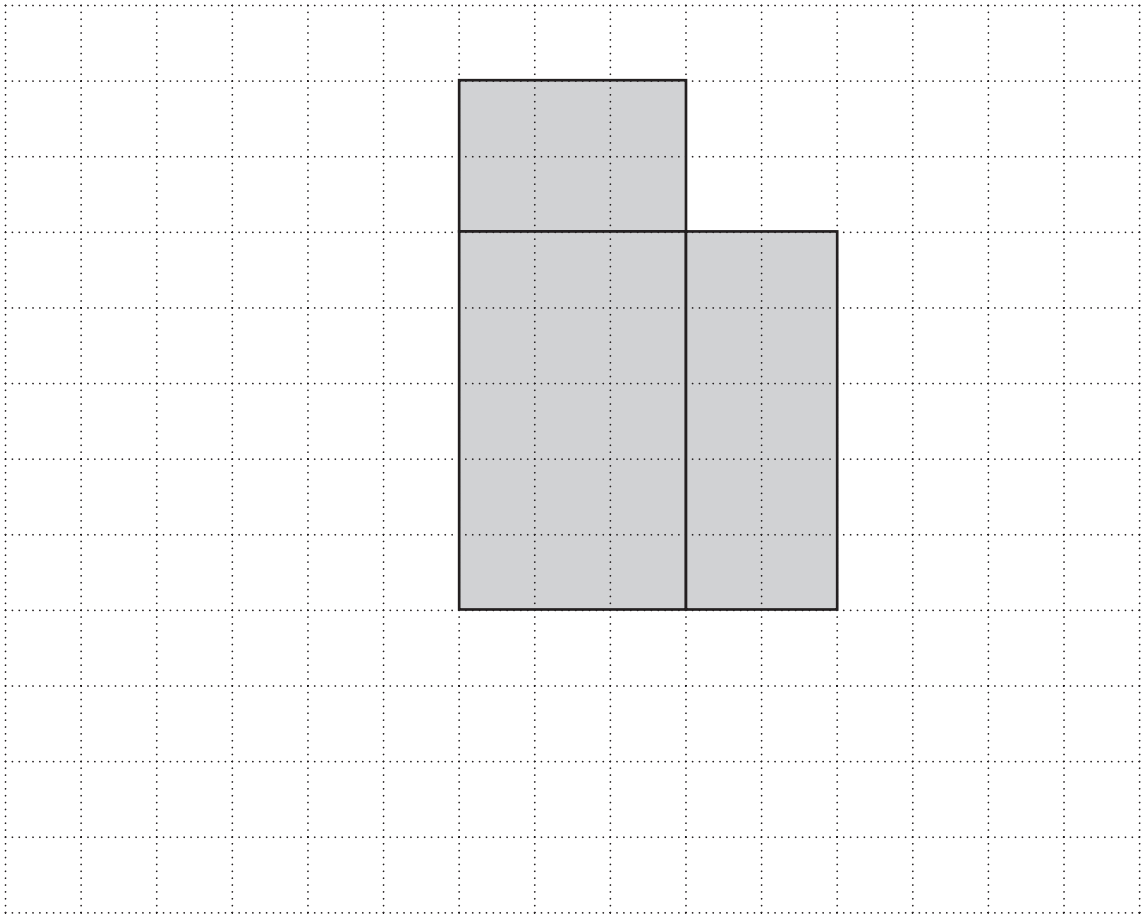
..... [1]

6 Divide 81 by 6

..... [1]

7 A cuboid measures 5 cm by 3 cm by 2 cm.

(a) Complete the net of the cuboid.
Three faces have been drawn for you. [1]



(b) Work out the volume of the cuboid.
Give units with your answer.

.... [2]

For Teacher's Use

8 Work out these calculations.
Give your answers as mixed numbers.

(a) $2\frac{1}{4} - \frac{1}{2}$

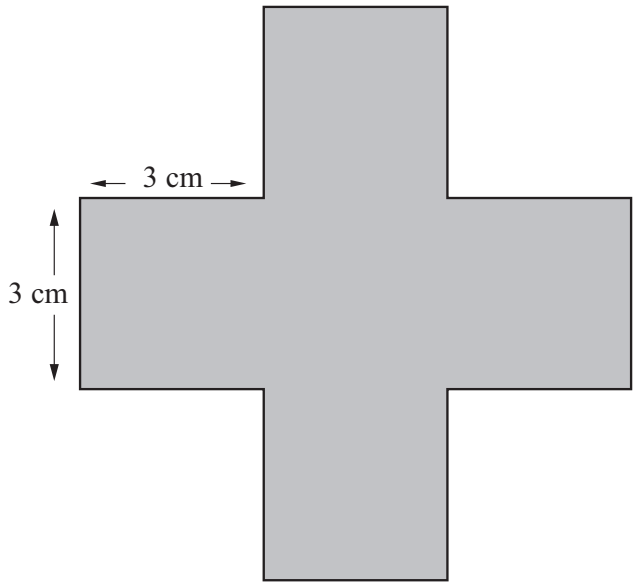
..... [1]

(b) $9 \times \frac{2}{5}$

..... [1]

9 This shape is made of five identical squares with side length 3 cm.

NOT TO SCALE



Work out

(a) the perimeter of the shape,

..... cm [1]

(b) the area of the shape.

..... cm^2 [2]

For Teacher's Use

10 Put **one** set of brackets in this calculation so that it is correct.

$$10 - 3 \times 4 - 2 + 1 = 5$$

[1]

11 Tick (✓) a box for each statement.

	True	False
$\frac{2}{3}$ can be written as a recurring decimal.	☐	☐
The decimal equivalent of $\frac{2}{3}$ is 0.666	☐	☐

[1]

12 **(a)** Here are the test scores for 8 students.

29, 27, 47, 43, 50, 31, 50, 48

Draw an ordered stem-and-leaf diagram to show the data.
The diagram has been started for you.

2	7 9
3	
4	
5	

Key 2 | 7 means a score of 27

[1]

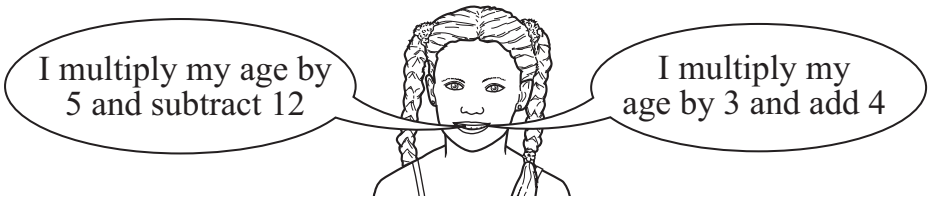
(b) To pass the test a student needs a score of 47 or more.

How many students pass the test?

..... [1]

13 Blessy does two calculations.

For Teacher's Use



She gets the same answer to both calculations.

(a) Blessy's age is b years.

Write down an equation in b.

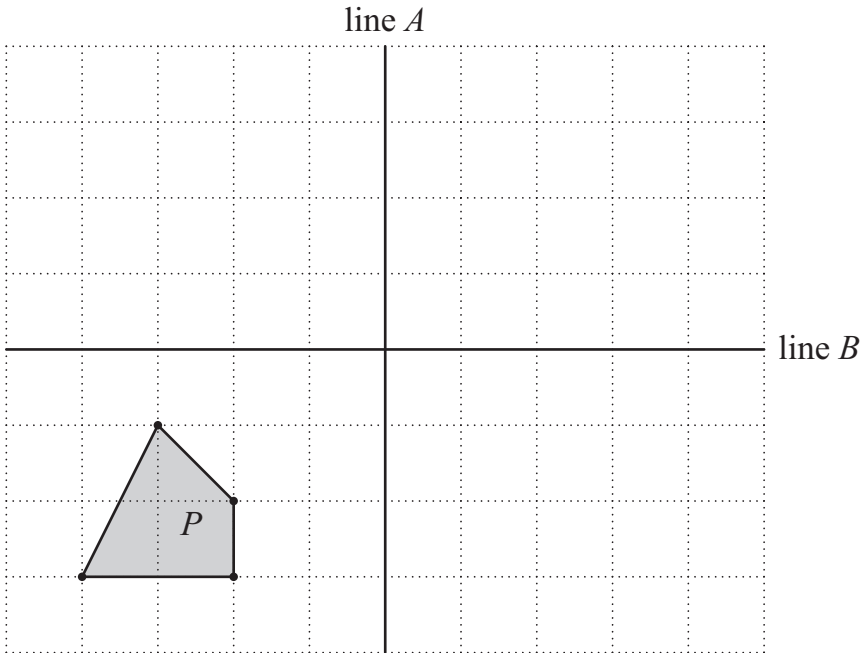
..... [1]

(b) How old is Blessy?

..... [1]

For Teacher's Use

14 Shape P is shown on the grid.



(a) Reflect Shape P in line A.
Label the shape Q. [1]

(b) Reflect **Shape *Q*** in line B.
Label this shape R. [1]

(c) Put a ring around the **single** transformation that maps P onto R directly.

reflection rotation translation enlargement

[1]

15 Here are four cards.

1	2	3	4

Use two of these cards to make this calculation correct.

$$\square\square^{2} - \square\square^{2} = 5^{2}$$

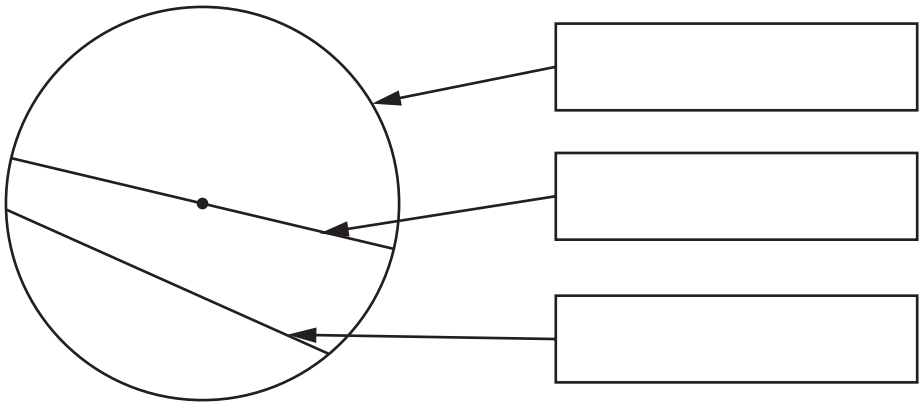
[1]

16 (a) Here is a list of parts of a circle.

For Teacher's Use

Circumference Chord Diameter

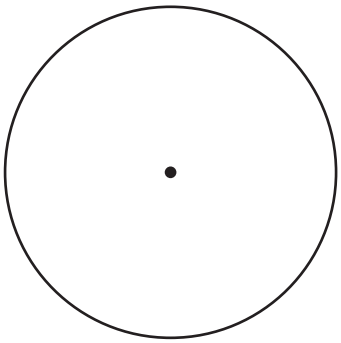
Use these words to label the diagram.
Each word should be used only once.



[1]

(b) In the circle below, draw a sector that is 25% of the total area of the circle.

Label this sector *S*.



[1]

For Teacher's Use

17 Jani has a metal pipe 90 cm in length.
She wants to cut the pipe into three pieces in the ratio 1 : 2 : 3

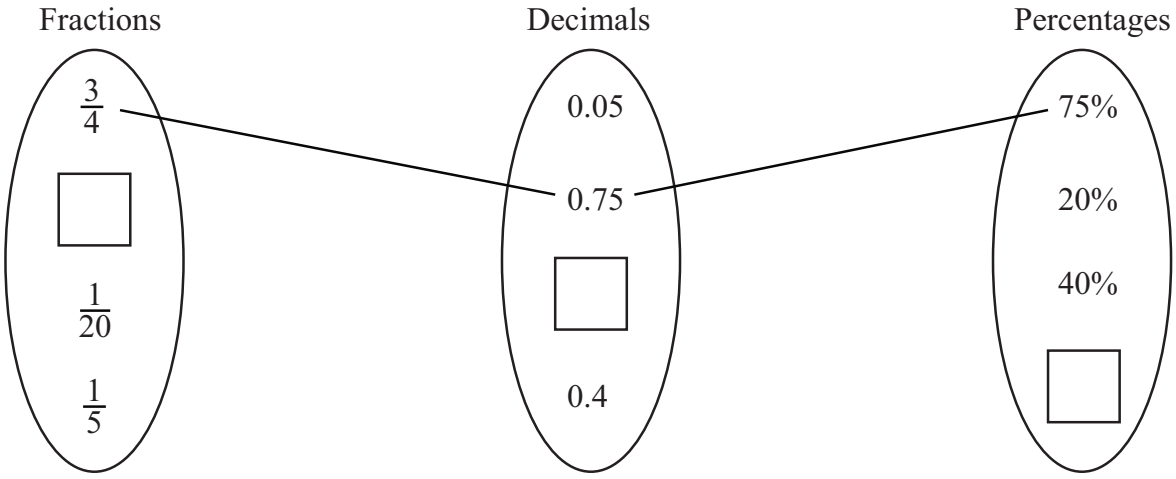
Work out the length of each piece of pipe.

.....cm .....cm .....cm [2]

18 Draw lines to connect the four sets of equivalent fractions, decimals and percentages.

One set has been done for you.

Write the missing values in the boxes.



[2]

19 Evaluate the following expression using $a = 4$, $b = 3$ and $c = 2$

$$a^3 - bc^3$$

..... [2]

20 Simplify the ratio.

$$250\,\text{g} : 3.5\,\text{kg}$$

..... : .....[2]

21 Here are some symbols.

$$= \quad > \quad <$$

Choose a symbol to complete each statement.

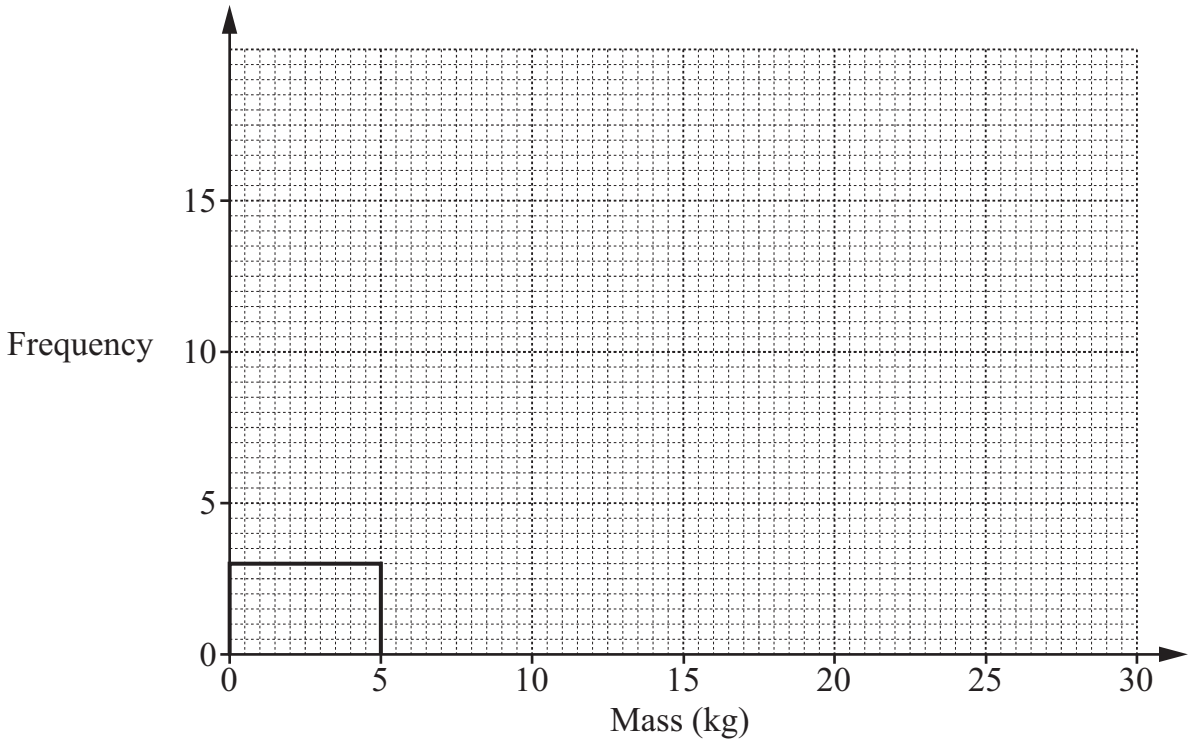
Symbols can be used more than once.

$0.345\,\text{m}$ ☐ $3.45\,\text{mm}$ $0.075\,\text{kg}$ ☐ $750\,\text{g}$ [1]

22 The frequency table shows the masses, in kilograms, of some bags.

Mass (kg)	Frequency
0 up to 5	3
5 up to 10	5
10 up to 15	9
15 up to 20	15
20 up to 25	8
25 up to 30	2

Complete the frequency diagram to show the data.



[2]

For Teacher's Use

23 All students in a class study either History or Geography, but not both.

There are
- 17 students who study History
- 15 students who study Geography
- 7 boys who study History
- 18 boys in the class.

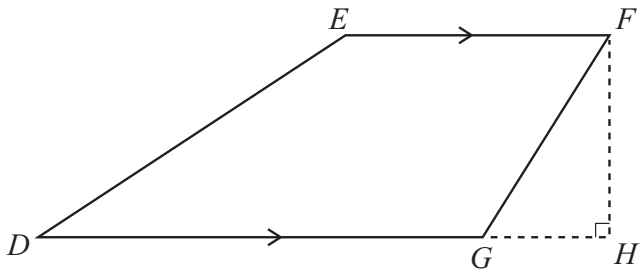
Complete the two-way table to show this information.

	History	**Geography**	**Total**
Boys			
Girls			
Total			

[2]

24 In the diagram, $EF = p$ cm and $FH = 8$ cm.

DG is twice the length of EF.



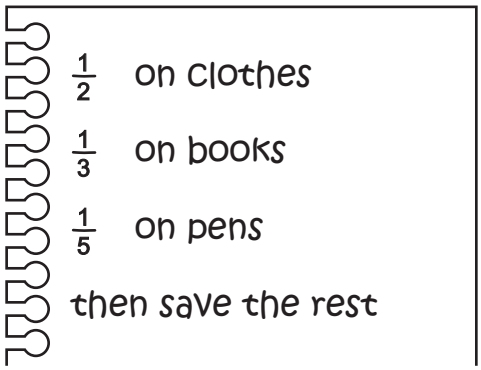
NOT TO SCALE

Write, as simply as possible, an expression for the area of shape $DEFG$ in terms of p.

..... cm^2 [2]

For Teacher's Use

25 Rida plans to spend her money like this.



Explain why she cannot do this.

Show your working.

[2]

26 Alex knows that $374 \times 3 = 1122$

He thinks that $1122 \div 0.3$ equals 37.4

Is Alex correct?

Tick (✓) a box. Yes ☐ No ☐

Explain your answer.

.....

..... [1]