Ma

KEY STAGE 2

LEVEL 6

2012

Mathematics tests

Paper 1

Calculator **not** allowed

First name						
Middle name						
Last name						
Date of birth	Day		Month		Year	
School name						
DfE number						

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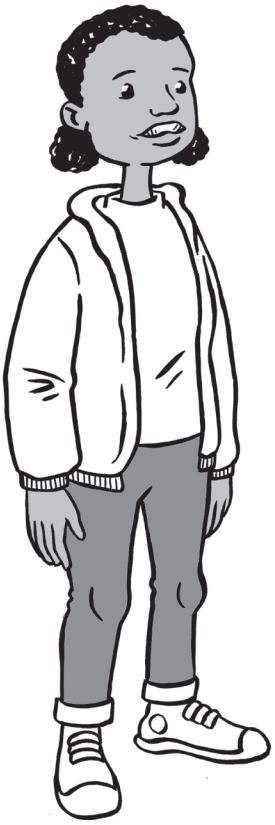
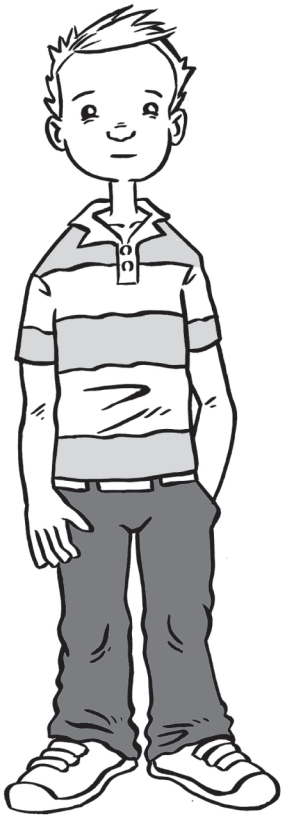


Cleo



Jon

Runa

Instructions

You **may not** use a calculator to answer any questions in this test paper.

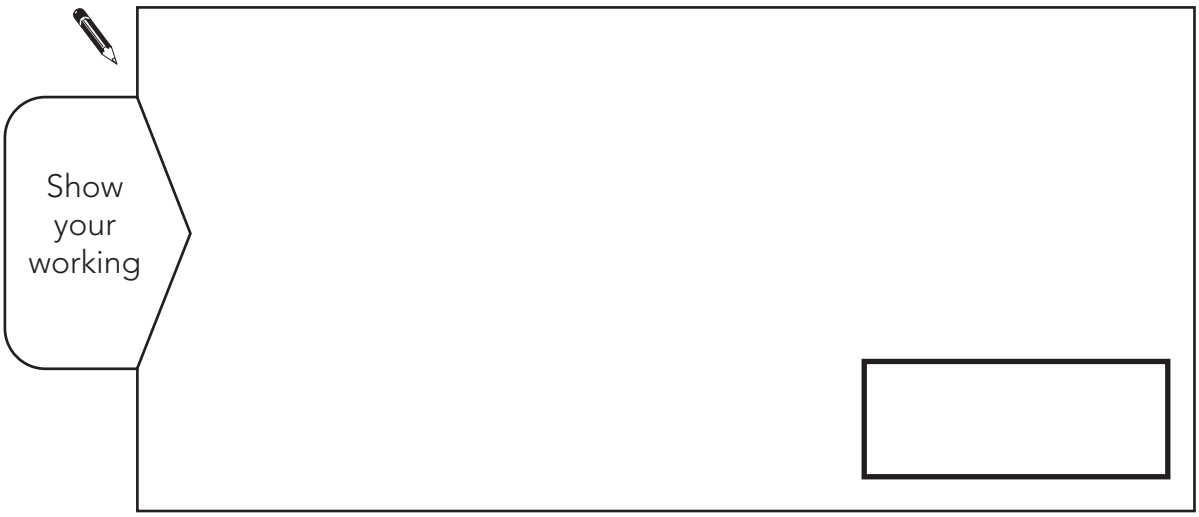
- Work as quickly and as carefully as you can.
- You have 30 minutes for this test paper.
- If you cannot do one of the questions, **go on to the next one**.
  You can come back to it later, if you have time.
- If you finish before the end, **go back and check your work**.

Follow the instructions for each question carefully.

This shows where you need to put the answer.

If you need to do working out, you can use any space on a page.

Some questions have an answer box like this:



For these questions you may get a mark for showing your working.

1 Jon makes a sequence of numbers.

His rule is to add the **same amount** each time.

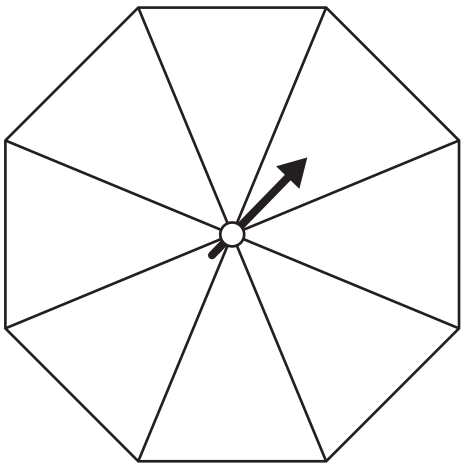
Write in the missing numbers.

–1				19	

(1 mark)

2 Here is a spinner.

It is a regular octagon.



Write a number in each section of the spinner so that all of the following statements are true:

It is impossible that you will get a **1**

There is an even chance that you will get a **2**

It is more likely that you will get a **3** than a **4**

It is equally likely that you will get a **4** or a **5**

(2 marks)

3 Write the missing number.

Original price **£60**

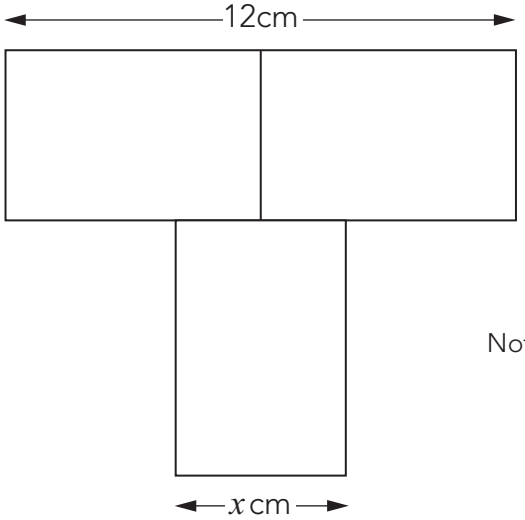
Reduced by ☐ %

Now only **£45**

(1 mark)

4 Here is a T-shape made from 3 identical rectangles.

The area of the T-shape is **90cm^2**



Not to scale

Work out the value of x.

Show your working

cm

(2 marks)

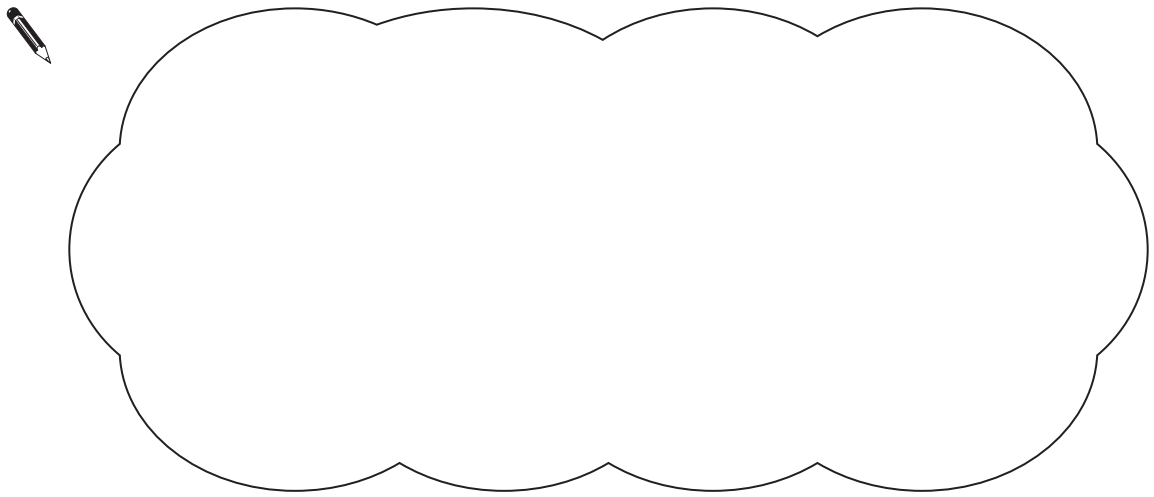
5 Runa and Jon each start with the same number.

Runa rounds the number to the nearest hundred.

Jon rounds the number to the nearest ten.

Runa's answer is double Jon's answer.

Explain how this can be.



(1 mark)

6 People in a village were asked if they shop in the village, or in the town, or in both.

The bar chart shows the results.

Altogether **246** people took part in the survey.

How many people shop in **both** the village and the town?

Show your working

people

(2 marks)

7 Is $\frac{4}{9}$ greater than $\frac{1}{3}$?

Circle Yes or No.

Yes / No

Show how you know.

(1 mark)

Is $\frac{4}{9}$ half of $\frac{8}{18}$?

Circle Yes or No.

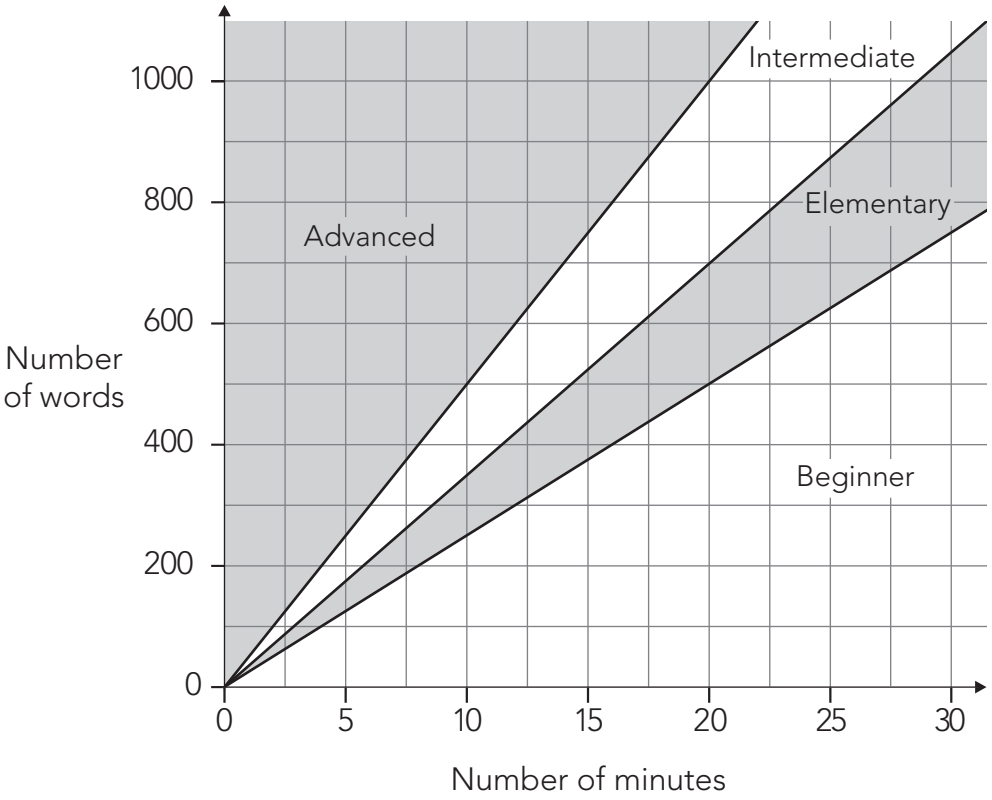
Yes / No

Show how you know.

(1 mark)

8 How fast you can type accurately is called your typing speed.

The regions of the graph show information about different typing speeds.



Darren's level of typing is **elementary**.

In **20 minutes** he should be able to type between 500 and 700 words.

Jo's level of typing is **intermediate**.

How many words should she be able to type in **20 minutes**?

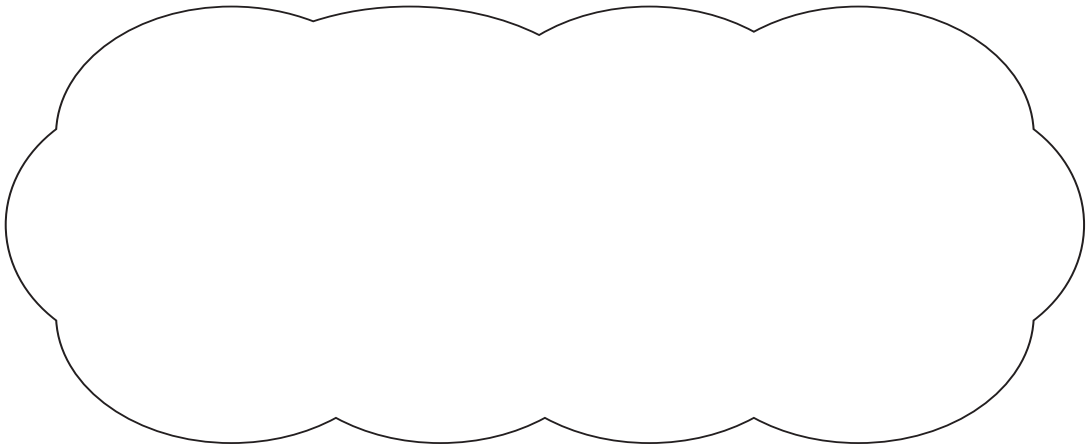
Between _____ and _____ *(1 mark)*

Kath's typing speed is **30 words per minute**.

What level is Kath's typing?

☐ Advanced ☐ Intermediate ☐ Elementary ☐ Beginner

Explain how you know.



(1 mark)

9 Look at this expression.

$$10y + 2$$

When $y = 0.4$, the value of $10y + 2$ is an **even** number because $10 \times 0.4 + 2 = 6$

Write a value for y so that $10y + 2$ is a **prime** number.

$y =$ _____

(1 mark)

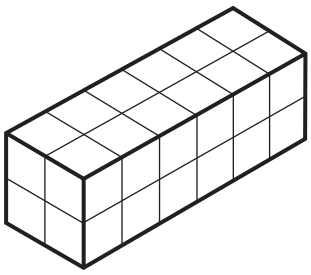
Now write a value for y so that $10y + 2$ is a **square** number.

$y =$ _____

(1 mark)

10 Cleo has **24** centimetre cubes.

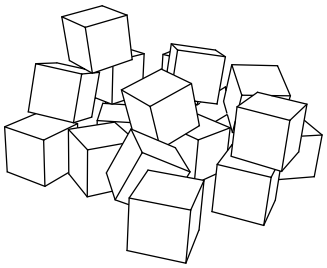
She uses all 24 cubes to make a cuboid with dimensions **6**cm, **2**cm and **2**cm.



Write the dimensions of a **different** cuboid she can make using all 24 cubes.

_____ cm, _____ cm and _____ cm *(1 mark)*

Jon has **20** centimetre cubes.



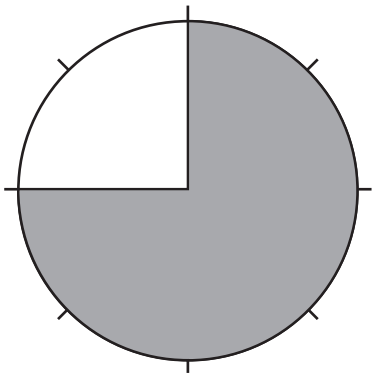
He wants to make a **cube** with edges that are **3**cm long.

How many **more** centimetre cubes does he need?

more *(1 mark)*

11 Look at the information in these two pie charts.

Pupils in class 6K

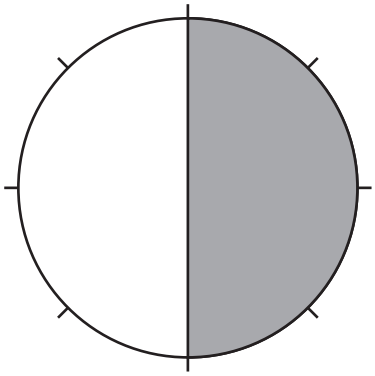


Key:

Girls

Boys

Girls in class 6K



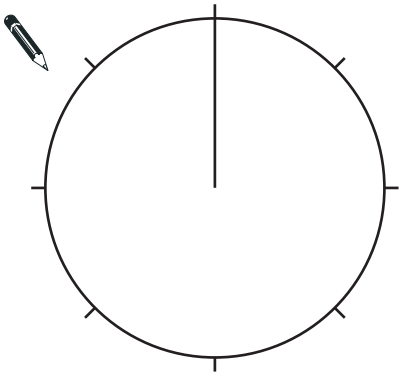
Key:

11 years old

Not 11 years old

Use the information in the two pie charts to complete the pie chart below.

Pupils in class 6K



Key:

11 year-old girls

All other pupils in the class

(1 mark)

12 Look at this information.

Tom was born in **1988**
Ben was born in **2000**

Tom and Ben have the **same birthday**.

The ratio of Tom's age to Ben's age on their birthday in **2001** was **13 : 1**

What was the ratio of Tom's age to Ben's age on their birthday in **2003**?

Write the ratio in its **simplest form**.

:

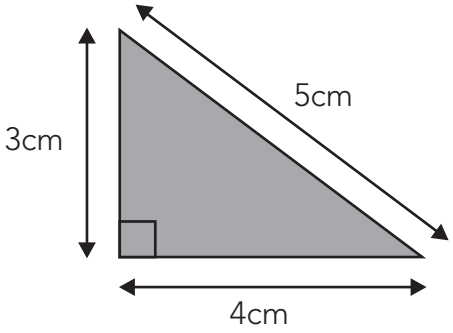
(1 mark)

In what year was the ratio of Tom's age to Ben's age **3 : 1**?

Show your working

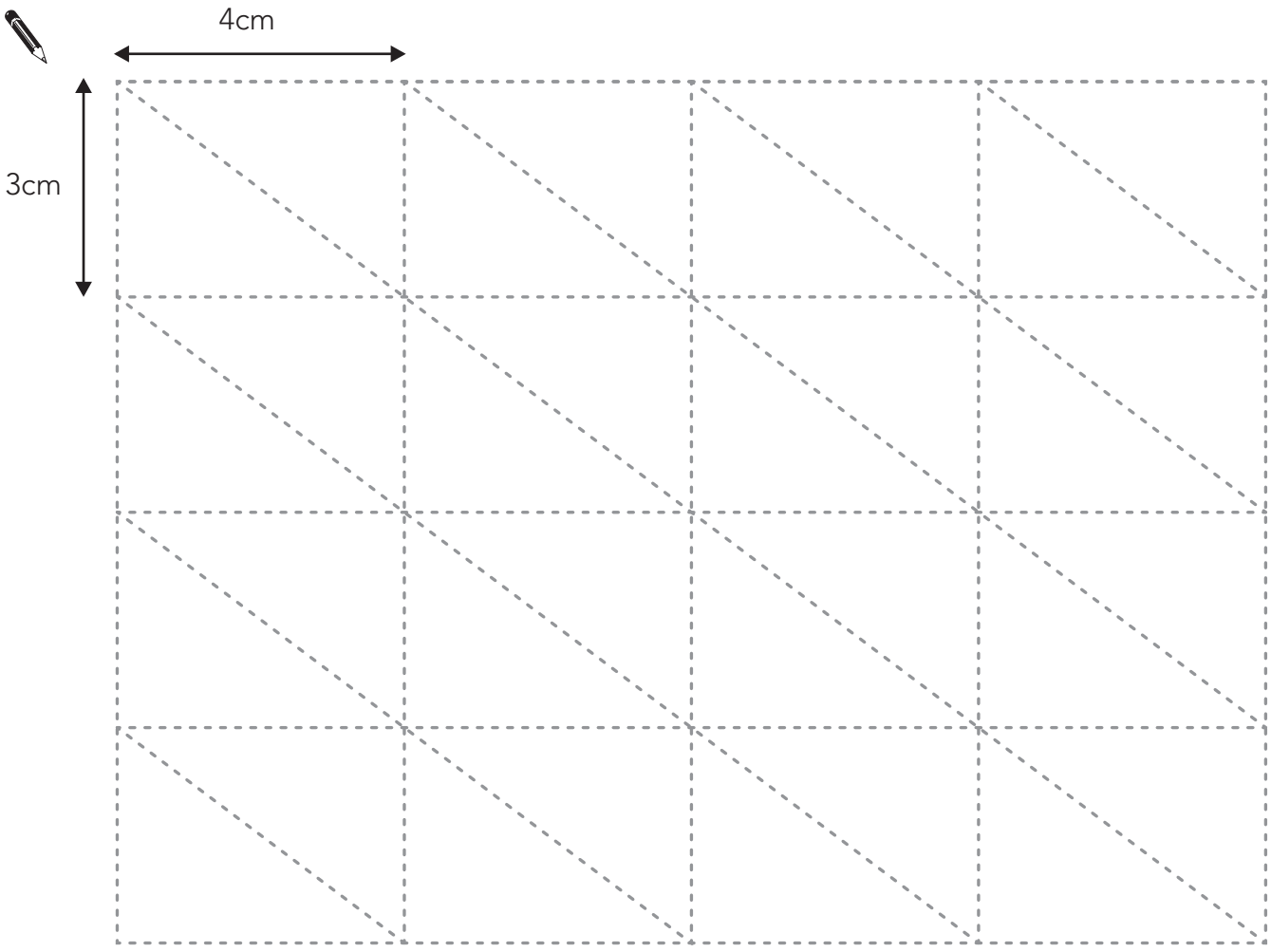
(2 marks)

13 The grid below is made of right-angled triangles like this:



Shade triangles on the grid to make a **quadrilateral**.

Your quadrilateral must have an area of **24cm²** and a perimeter of **26cm**.

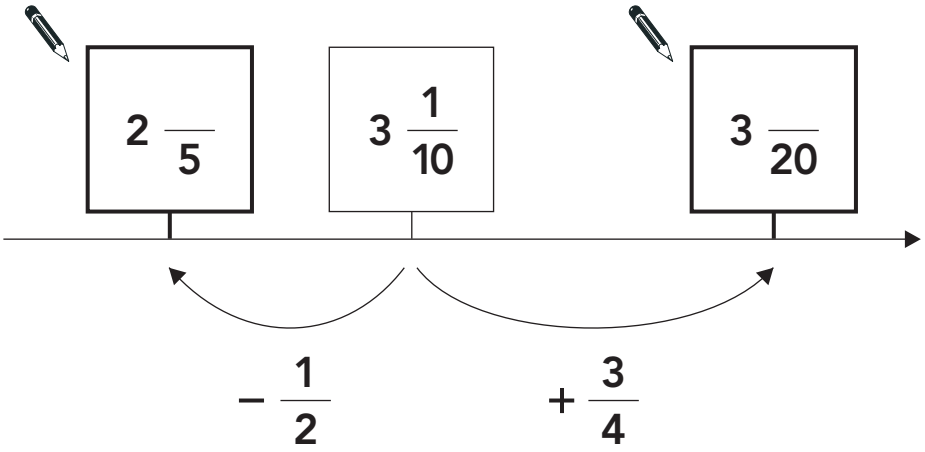


(2 marks)

14 The diagram shows part of a number line.

Two of the fractions are not complete.

Write the missing numerator in each box.



(2 marks)

END OF TEST

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