National curriculum tests

Key stage 2

Mathematics

Paper 3: reasoning

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

SAMPLE BOOKLET

Published July 2015

This sample test indicates how the national curriculum will be assessed from 2016. Further information is available on GOV.UK at **www.gov.uk/sta**.

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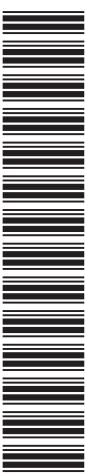
Instructions

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

Questions and answers

You have **40 minutes** to complete this test.

Follow the instructions for each question.

Work as quickly and as carefully as you can.

If you need to do working out, you can use the space around the question.
Do not write over any barcodes.

Some questions have a method box like this:
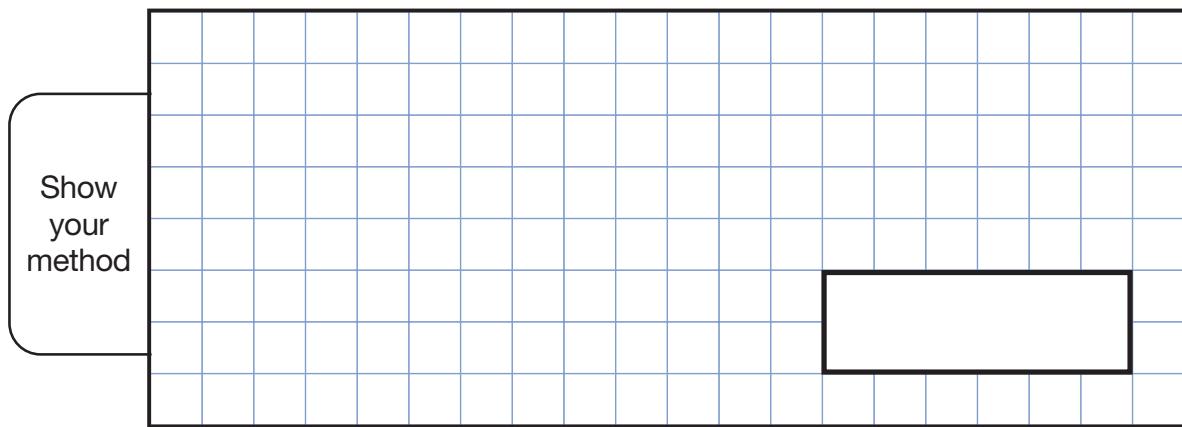
Show
your
method

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

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**.

Marks

The number under each line at the side of the page tells you the maximum number of marks for each question.

1   Here is a diagram for sorting numbers.

Write **one number** in each box.

One is done for you.

	multiple of 5	**not** a multiple of 5
multiple of 3	30	
not a multiple of 3		

2 marks

2   Here is part of a number line.

Write the missing numbers in the boxes.

+7   +7

	−5	
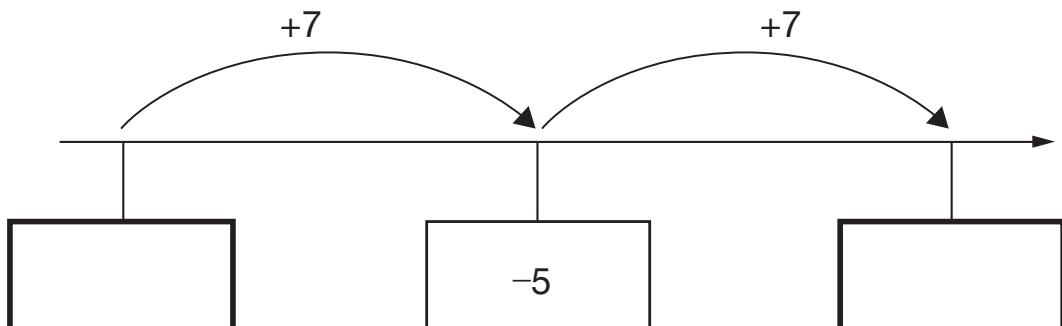
2 marks

3 Look at this number.

$$23,451.96$$

Write the **digit** that is in the hundreds place.

1 mark

Write the **digit** that is in the hundredths place.

1 mark

4 A school plans to collect £200 between January and May.

This chart shows how much they collected by the end of April.

Jan   Feb   Mar   Apr

0   20   40   60   80   100   120   140   160   180   200

Target £200

Amount of money collected in £
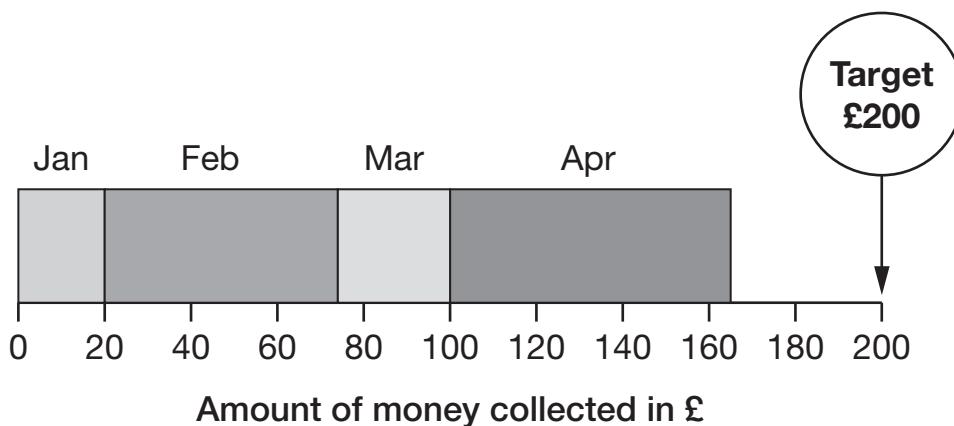
Write the name of **each** month where they collected more than £50

1 mark

How much money did they collect in February and March **altogether**?

£

1 mark

5 Chen pours 165 millilitres of milk into a measuring jug.

Draw an arrow on the jug to show the level of the milk.

ml
200
180
160
140
120
100
80
60
40
20
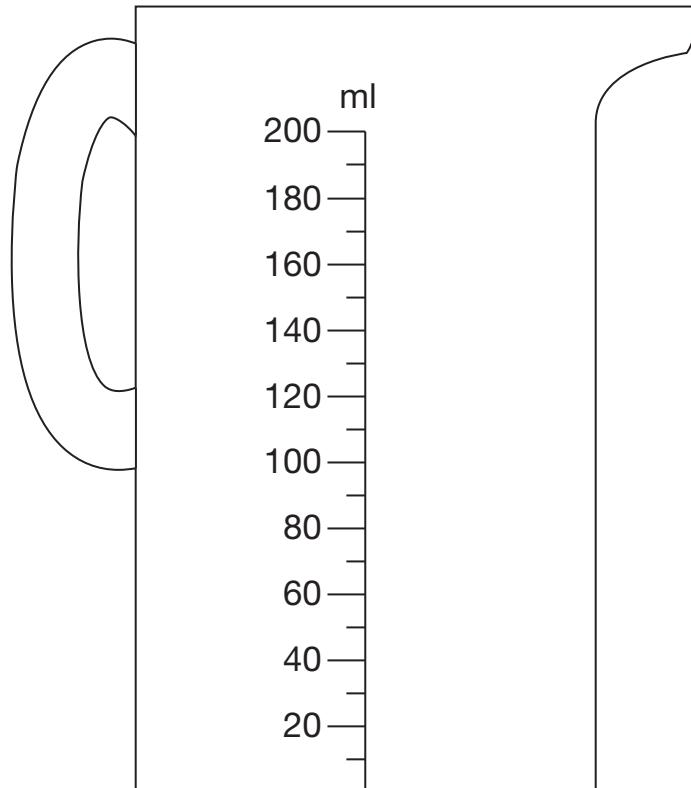
1 mark

6   Here are six cards.

× 10	× 100	× 1000
÷ 10	÷ 100	÷ 1000

Use a card to complete each calculation.

5.3 ☐ = 0.53

5.3 ☐ = 5300

5.3 ☐ = 0.053

2 marks

**7** Write the number 53,148 in **words**.

_____

1 mark

8 Here is a shaded shape on a grid.

The shape is translated so that point **A** moves to point **B**.

Draw the shape in its new position.

Use a ruler.
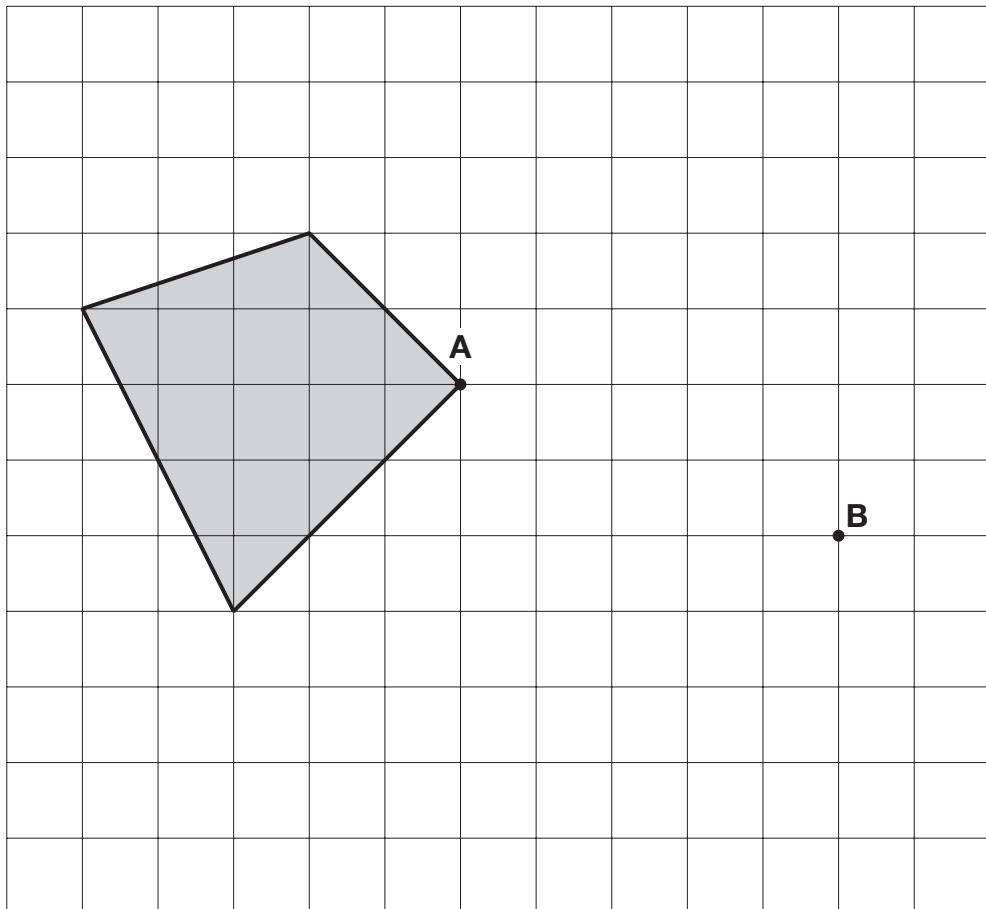
2 marks

9 The mass of a 10p coin is 6.5g.

The mass of a 5p coin is half the mass of a 10p coin.

What is the mass of these six coins **altogether**?
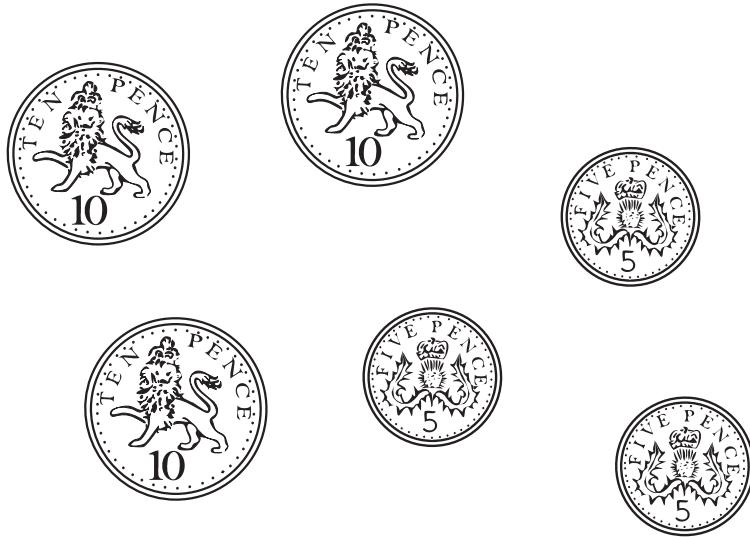
Show your method

g

2 marks

10 A bag of 5 lemons costs £1

A bag of 4 oranges costs £1.80

£1

£1.80
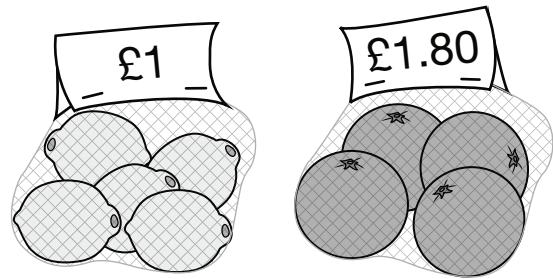
How much **more** does one orange cost than one lemon?

Show your method

2 marks

11 Write the four missing digits to make this **addition** correct.

$$\begin{array}{cccc}
\boxed{} & \boxed{6} & \boxed{} & \boxed{8} \\
+ \quad \boxed{3} & \boxed{} & \boxed{9} & \boxed{} \\
\hline
\boxed{9} & \boxed{0} & \boxed{1} & \boxed{9}
\end{array}$$

2 marks

12 Two decimal numbers add together to equal 1

One of the numbers is 0.007

What is the other number?

1 mark

13 Here are four fraction cards.

$$\frac{3}{4} \qquad \frac{5}{8} \qquad \frac{6}{12} \qquad \frac{7}{16}$$

Use any **three** of the cards to make this correct.

☐ < ☐ < ☐

1 mark

14 Here is a number pyramid.

The number in a box is the **product** of the two numbers below it.

Write the missing numbers.
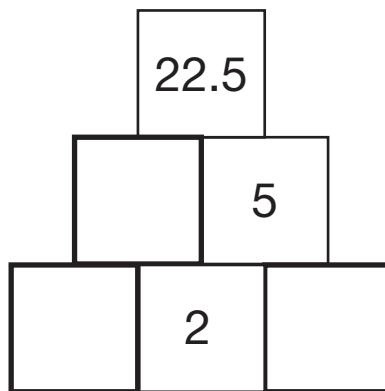
2 marks

15 Join dots on the grid to make a quadrilateral that has **3 acute** angles.

1 mark

16 Lara chooses a number less than 100

She divides it by 3 and then subtracts 11

She then divides this result by 2

Her answer is 10.5

What was the number she started with?

Show your method

2 marks

S 0 0 0 7 0 A 1 6 2 4

17   This model is made with 20 cubes.
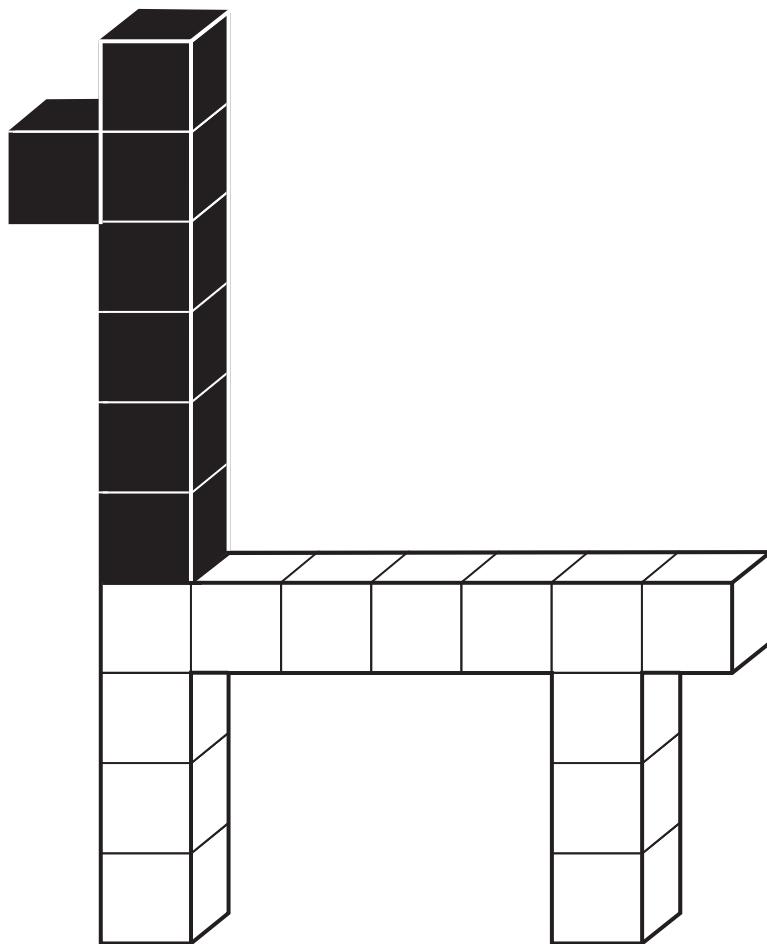
What **percentage** of the cubes in the model is black?

%

1 mark

18 Here are the ingredients for chocolate ice cream.

cream	400 ml
milk	500 ml
egg yolks	4
chocolate	120 g
sugar	100 g

Stefan has only 300ml of cream to make chocolate ice cream.

How much **chocolate** should he use?

Show your method

g

2 marks

19   The area of a rugby pitch is 6,108 square metres.

A football pitch measures 112 metres long and 82 metres wide.

How much larger is the area of the football pitch than the area of the rugby pitch?

Show your method

square metres

3 marks

20 Here are two **identical** shaded triangles on coordinate axes.
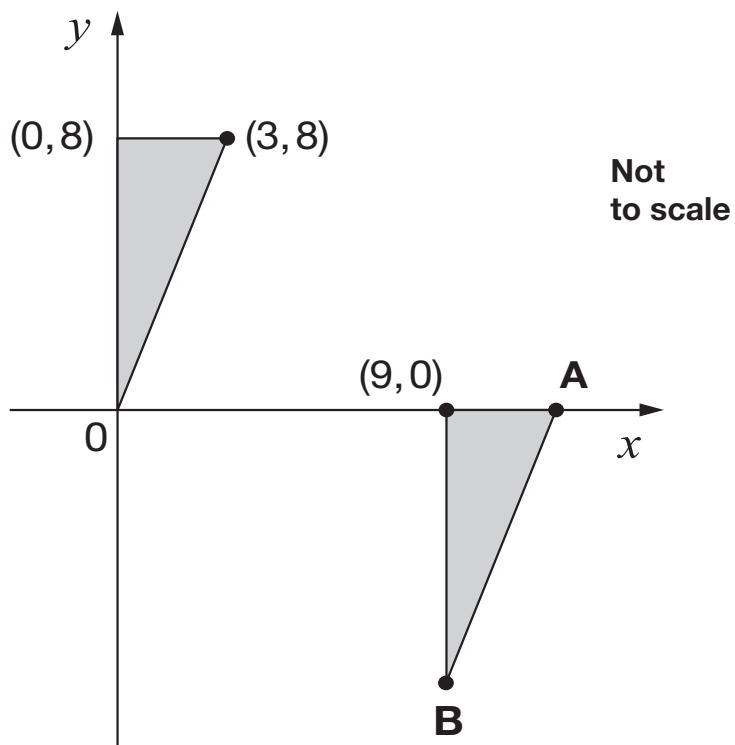
Write the coordinates of points A and B.

$$A = (\qquad , \qquad)$$

$$B = (\qquad , \qquad)$$

2 marks

S 0 0 0 7 0 A 2 0 2 4

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