

National curriculum tests

# Key Stage 2

## Mathematics

### Practice Paper 3-2: reasoning

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

Time: 40 minutes.

No calculators allowed.

35 marks



## 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:

The diagram shows a method box. On the left is an orange button with the text "Show your Method". To the right of the button is a large grid of 20 columns and 10 rows, intended for showing working out.

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

If you cannot do a question, **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 box at the side of the page tells you the maximum number of marks for each question.

**1** Look at the table showing factors.

Write one number in each box

One is done for you.

	factor of 36	<b>not</b> a factor of 36
factor of 24	12	
<b>not</b> a factor of 24		

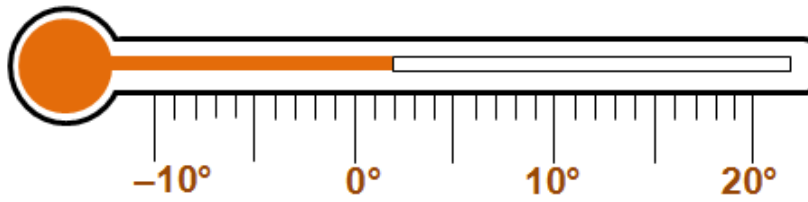


2 marks

Ref: 5C5a

2

The thermometer shows the temperature on Tuesday.



The temperature on Monday is 5°C **colder** than Tuesday.

The temperature on Friday is 5°C **hotter** than Tuesday.

Write the temperature for Monday and Friday

Monday is  °C

☐  
1 mark

Friday is  °C

☐  
1 mark

Ref: 5N5

3

Look at this number :

21,304

Draw beads on the abacus to make the number



1 mark

Look at this number :

1.02345

Write the digit that is in the one thousandth place



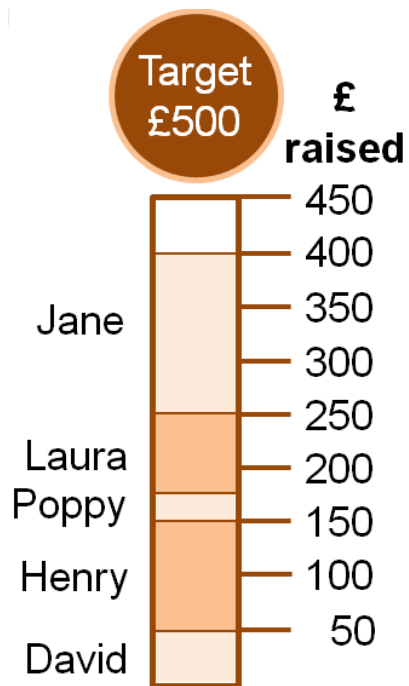
1 mark

Ref: 5N3a, 5F6b

4

Some people raised money for Children in Need.

This chart shows how much each person raised.



Write the names of the people who raised more than £60

---



1 mark

How much did Poppy and Laura raise **altogether**

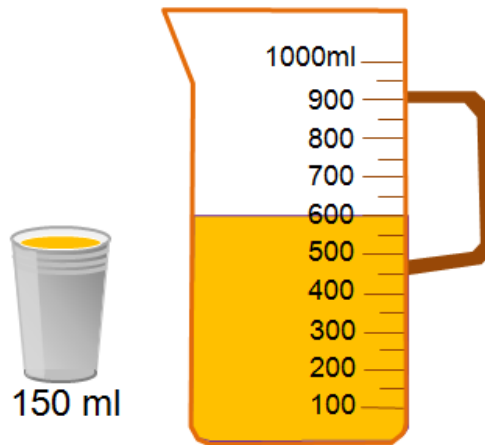
£



1 mark

Ref: 4S1

- 5 Henry added the cup of juice to the jug.



What is the new level of juice in the jug

ml



1 mark

Ref: 3M9

**6** Here are six cards

$\times 10$

$\times 100$

$\times 1000$

$\div 10$

$\div 100$


$\div 1000$

Use a card to complete each calculation

$$123.4 \quad \boxed{\phantom{000}} = 123400$$

$$123.4 \quad \boxed{\phantom{000}} = 0.1234$$

$$123.4 \quad \boxed{\phantom{000}} = 12.34$$


  
2 marks

Ref: 5C6b

**7**

Write the number 98, 754 in words

\_\_\_\_\_

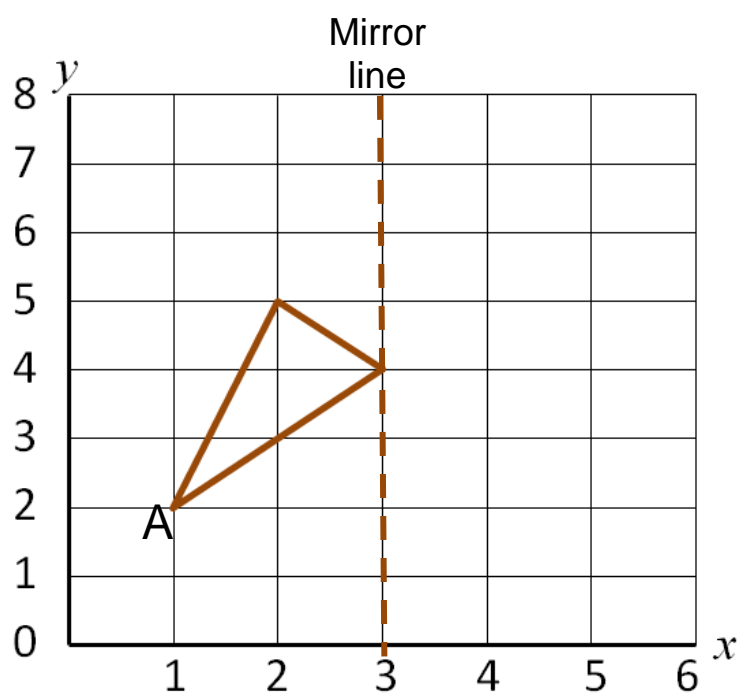
  
1 mark

Ref: 5M2



8

Draw a reflection of this shape in the mirror line.

What are the co-ordinates of A *after* the reflection?

(      ,      )



2 mark

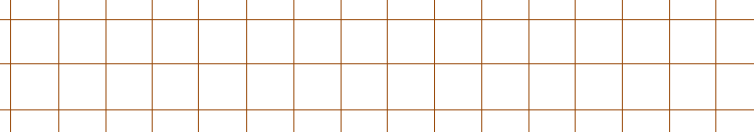
Ref: 6P2

The banana balances with three weights



How much would **15** bananas weigh in kilograms

Show  
your  
Method



kg

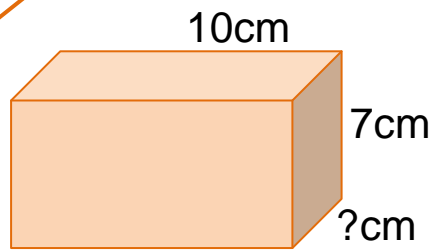
kg

2 marks

Ref: 5M9c

10

The volume of this cuboid is  $350 \text{ cm}^3$



What is the length of the missing side?

**Show your Method**

A blank grid paper with a 20x15 grid. A vertical orange bar is on the left edge. A scale bar in the bottom right corner shows a length of 1 cm.

2 marks

Ref: 5M9d

11

A bag of 5 oranges costs £1.75



How much more does one orange cost than one lemon?

Show  
your  
Method

A diagram showing a 2D grid of 20 columns and 10 rows. A small orange rectangle is located on the left side, spanning the first two columns and the first two rows. A larger brown rectangle is located on the right side, spanning the last four columns and the last two rows. The brown rectangle is labeled with the letter 'p' in the bottom right corner.

p

2 marks

Ref: 4F10b

12

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

$$\begin{array}{r} \boxed{1} \boxed{2} \boxed{3} \boxed{\phantom{0}} \\ + \phantom{1} \boxed{8} \boxed{\phantom{0}} \boxed{5} \\ \hline \boxed{2} \boxed{\phantom{0}} \boxed{0} \boxed{9} \end{array}$$

☐ 1 mark

Write the missing digits to make this **subtraction** correct.

$$\begin{array}{r} \boxed{1} \boxed{\phantom{0}} \boxed{6} \boxed{7} \\ - \phantom{1} \boxed{9} \boxed{\phantom{0}} \boxed{\phantom{0}} \\ \hline \boxed{4} \boxed{9} \boxed{2} \end{array}$$

☐ 1 mark

Ref: 4C2

13

Coventry is 7.86 km west of Poppy's house.  
Nuneaton is 5.69 km east of Poppy's house.

C ← P → N

How far apart are Coventry and Nuneaton?

km



1 mark

Ref: 5F10

**14** Look at the fraction cards.

$$\frac{2}{3}$$

$$\frac{5}{6}$$

$$\frac{7}{9}$$

$$\frac{9}{12}$$

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

$$\boxed{\phantom{0}} < \boxed{\phantom{0}} < \boxed{\phantom{0}}$$



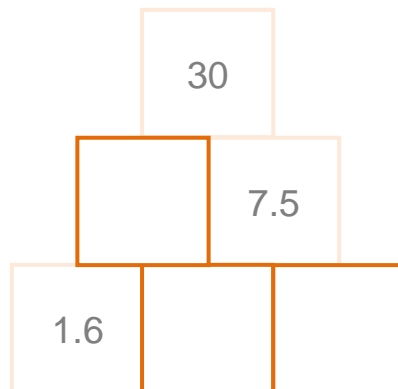
1 mark

Ref: 5F3

**15** Look at the number pyramid

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

Write the missing numbers

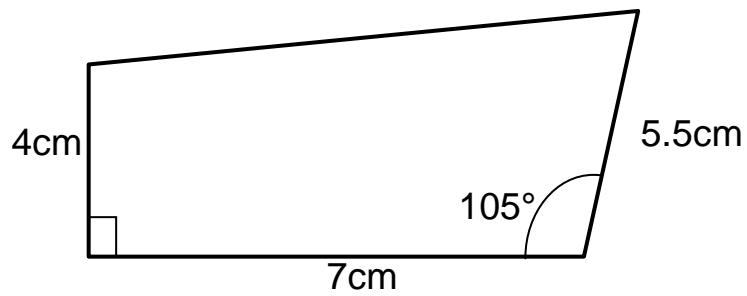


2 marks

Ref: 6F9



**16** Here is quadrilateral, not drawn to scale.



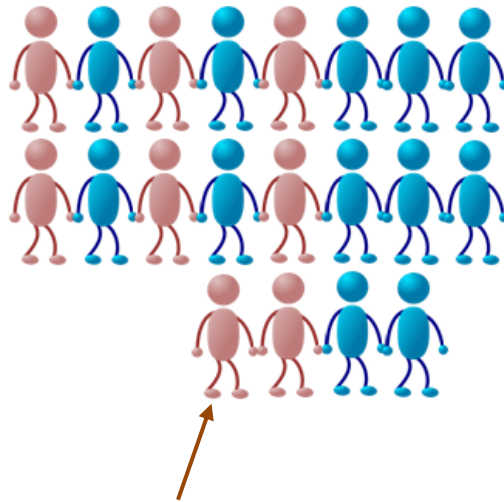
Draw the quadrilateral accurately below. Use a protractor and ruler.



1 mark

Ref: 6G3a

17 There are 20 children in a class.



Girls are shown in pink.

What percentage of girls are there in the class

%



1 mark

Ref: 5F12

18

He divides it by 6 and then adds 11

He then multiplies this result by 2.5

His answer is 50

What was the number he started with?

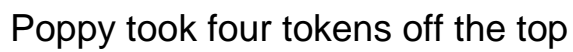
**Show  
your  
Method**

[illegible]

2 marks

Ref: 6C8

A stack of 15 tokens is 45 cm tall.



**Show  
your  
Method**

cm

2 marks

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20



One box of grass seed covers  $17\text{m}^2$

How many boxes will be needed to seed the pitch.

**Show  
your  
Method**

A diagram showing a large grid of boxes. A small box in the bottom right corner is labeled "boxes".

boxes

3 marks

3 marks

Ref: 6C7a/6C7c