

2016 national curriculum tests

# Key stage 2

## Mathematics

### Paper 2: reasoning

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



**[BLANK PAGE]**

Please do not write on this page.



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



1

Ali puts these five numbers in their correct places on a number line.

511

499

502

555

455

Write the number **closest** to 500

1 mark


Write the number **furthest** from 500

1 mark




2

**A**




£135,300

**B**




£119,125

**C**



£130,500

**D**



£131,500

**E**



£91,500

Put these houses in order of price starting with the **lowest price**.

One has been done for you.

\_\_\_\_\_ **B** \_\_\_\_\_

lowest \_\_\_\_\_

\_\_\_\_\_ 1 mark



3

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

$$\begin{array}{r} 15\boxed{\phantom{0}} \\ + 4\boxed{\phantom{0}}4 \\ \hline \boxed{\phantom{0}}15 \end{array}$$

          
2 marks



4

This table shows the number of people living in various towns in England.

Town	Population
Bedford	82,448
Carlton	48,493
Dover	34,087
Formby	24,478
Telford	166,640

What is the **total** of the numbers of people living in Formby and in Telford?

1 mark

What is the **difference** between the numbers of people living in Bedford and in Dover?

1 mark



5

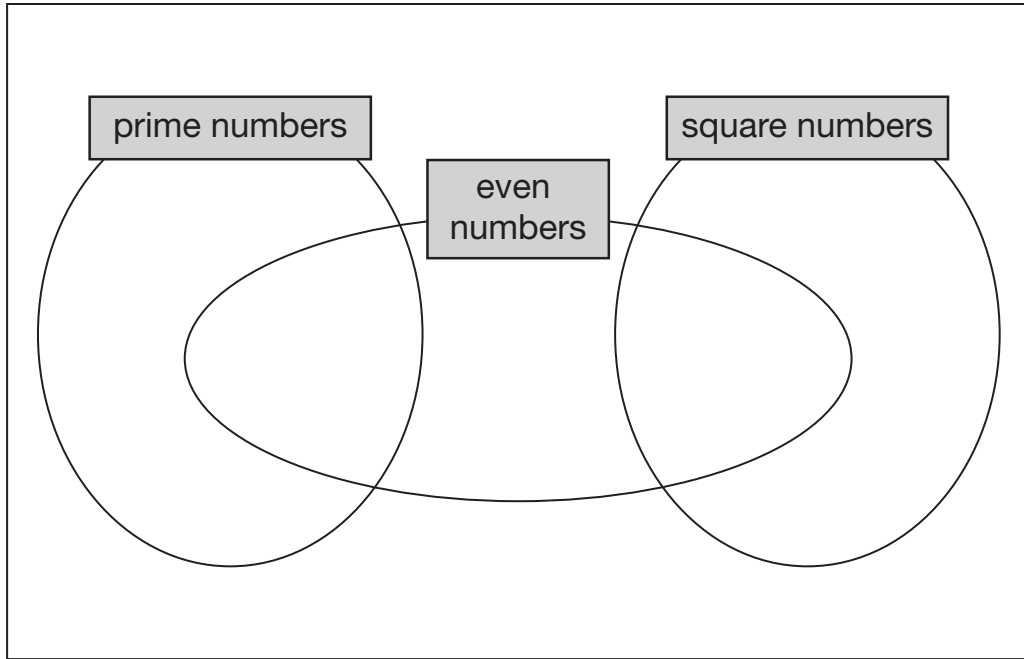
Write each number in its correct place on the diagram.

16

17

18

19



2 marks



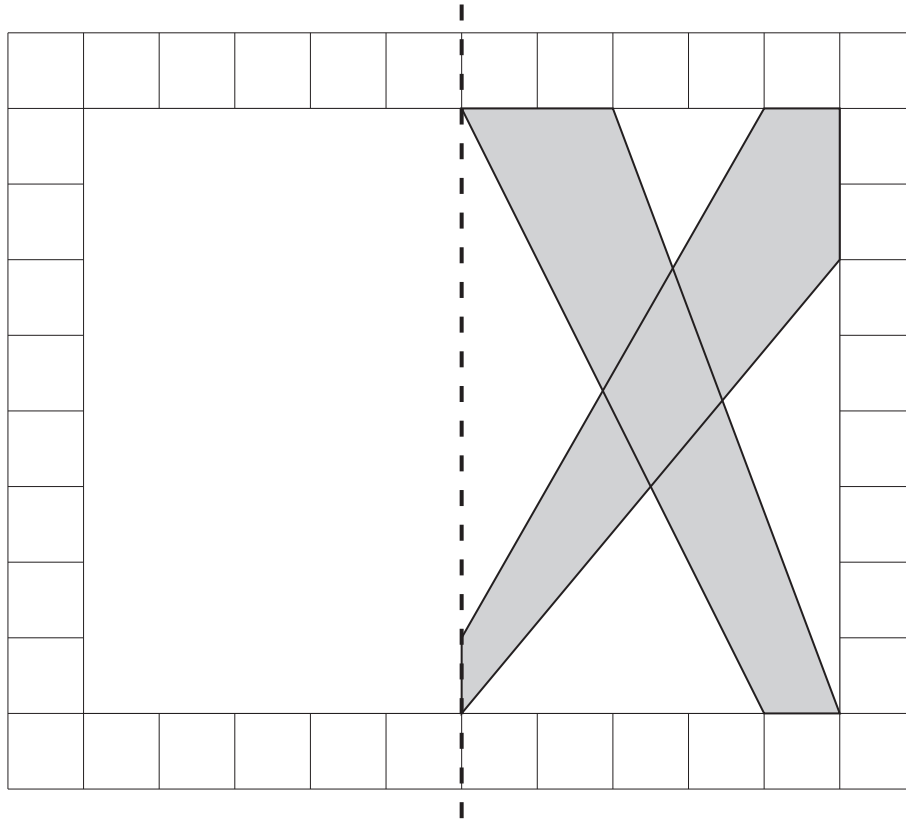


6

This diagram shows a shaded shape inside a border of squares.

Draw the reflection of the shape in the mirror line.

Use a ruler.



mirror line

1 mark



E 0 0 0 7 0 A 0 9 2 4

7

Write the two missing values to make these equivalent fractions correct.

$$\frac{\square}{3} = \frac{8}{12} = \frac{4}{\square}$$

\_\_\_\_\_   
 1 mark

\_\_\_\_\_   
 1 mark

8

Circle two numbers that add together to equal **0.25**

0.05

0.23

0.2

0.5

\_\_\_\_\_   
 1 mark

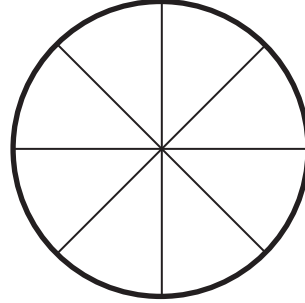
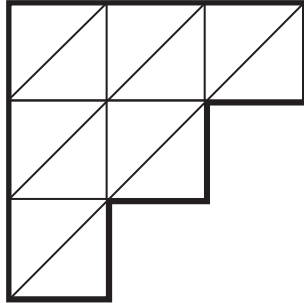
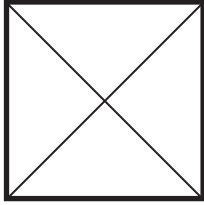




10

Each diagram below is divided into equal sections.

Shade three-quarters of each diagram.



2 marks





**12**

$n = 22$

What is  $2n + 9$ ?

1 mark

$2q + 4 = 100$

Work out the value of  $q$ .

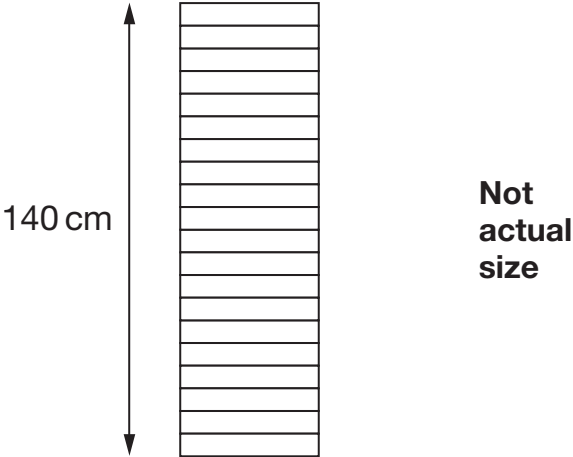
 $q =$ 

1 mark



13

A stack of 20 identical boxes is 140 cm tall.



Stefan takes **three** boxes off the top.

How tall is the stack now?

Show your method

cm

2 marks



14

Write **all** the common multiples of 3 and 8 that are **less than 50**

---

1 mark







16

Write the number that is five less than **ten million**.

1 mark

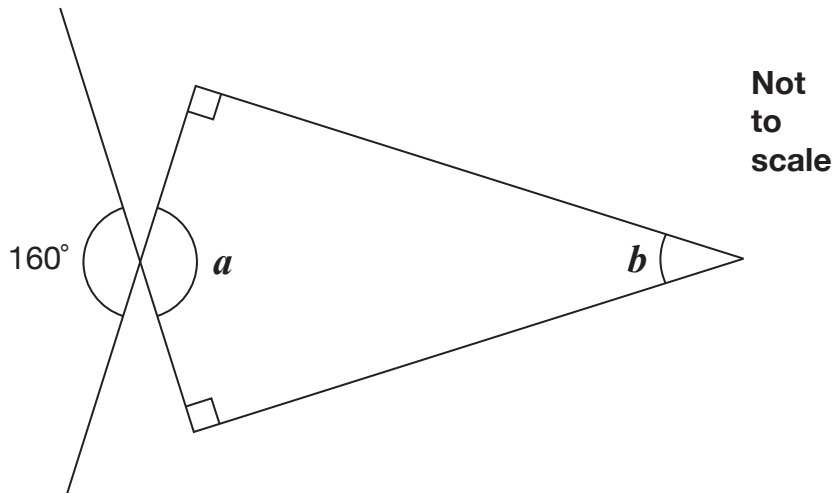
Write the number that is one hundred thousand less than **six million**.

1 mark



17

Calculate the size of angles  $a$  and  $b$  in this diagram.



$$a = \boxed{\phantom{000}^\circ}$$

1 mark

$$b = \boxed{\phantom{000}^\circ}$$

1 mark

18

Write the missing number.

$$70 \div \boxed{\phantom{000}} = 3.5$$

1 mark



19

Miss Mills is making jam to sell at the school fair.

Strawberries cost £7.50 per kg.

Sugar costs 79p per kg.

10 glass jars cost £6.90

She uses 12 kg of strawberries and 10 kg of sugar to make 20 jars full of jam.

Calculate the total cost to make 20 jars full of jam.

Show  
your  
method

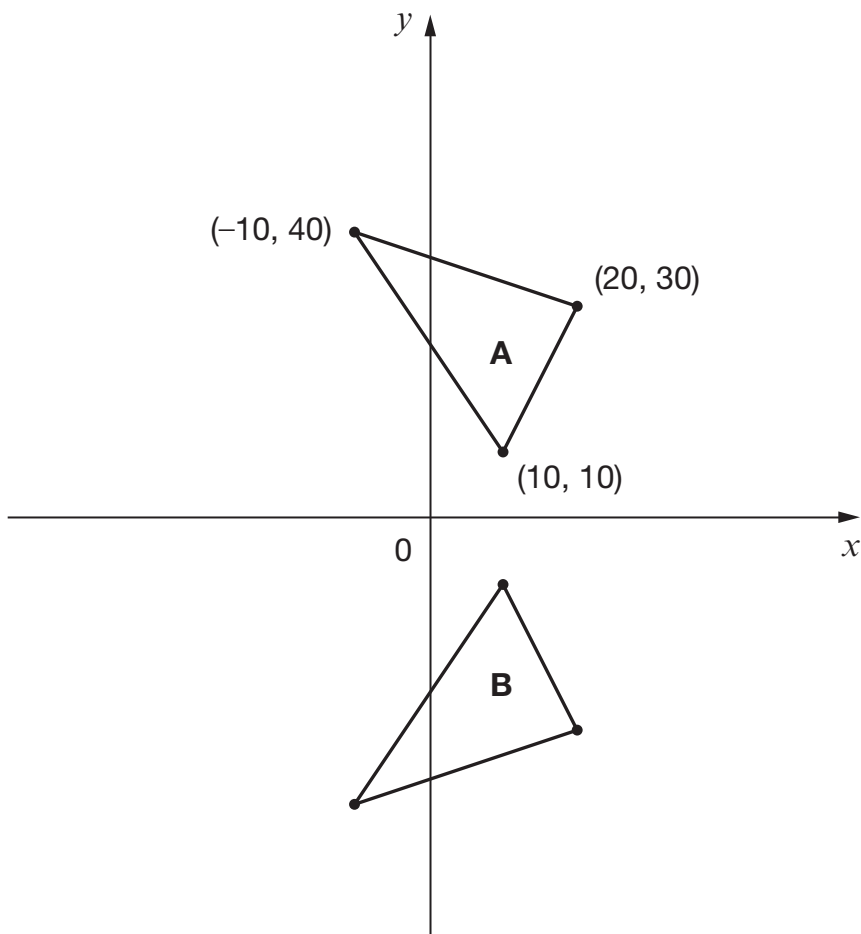
£

3 marks



20

Here are two triangles drawn on coordinate axes.



Triangle B is a reflection of triangle A in the  $x$ -axis.

Two of the new vertices of triangle B are  $(10, -10)$  and  $(20, -30)$ .

What are the coordinates of the **third** vertex of triangle B?

1 mark



**[END OF TEST]**

Please do not write on this page.



**[BLANK PAGE]**

Please do not write on this page.





Standards  
& Testing  
Agency

2016 key stage 2 mathematics

Paper 2: reasoning

Print version product code: STA/16/7376/p ISBN: 978-1-78315-933-8

Electronic PDF version product code: STA/16/7376/e ISBN: 978-1-78315-934-5

### For more copies

Additional printed copies of this booklet are not available. It can be downloaded from [www.gov.uk/government/publications](http://www.gov.uk/government/publications).

© Crown copyright and Crown information 2016

### Re-use of Crown copyright and Crown information in test materials

Subject to the exceptions listed below, the test materials on this website are Crown copyright or Crown information and you may re-use them (not including logos) free of charge in any format or medium in accordance with the terms of the Open Government Licence v3.0 which can be found on the National Archives website and accessed via the following link: [www.nationalarchives.gov.uk/doc/open-government-licence](http://www.nationalarchives.gov.uk/doc/open-government-licence).

When you use this information under the Open Government Licence v3.0, you should include the following attribution: 'Contains public sector information licensed under the Open Government Licence v3.0' and where possible provide a link to the licence.



### Exceptions – third-party copyright content in test materials

You must obtain permission from the relevant copyright owners, as listed in the '2016 key stage 2 tests copyright report', for re-use of any third-party copyright content which we have identified in the test materials, as listed below. Alternatively you should remove the unlicensed third-party copyright content and/or replace it with appropriately licensed material.

### Third-party content

These materials contain no third-party copyright content.

If you have any queries regarding these test materials contact the national curriculum assessments helpline on 0300 303 3013 or email [assessments@education.gov.uk](mailto:assessments@education.gov.uk).

