

National curriculum tests

Key stage 2

Mathematics

Paper 2: reasoning



This link shows video solutions for the whole paper.

For solutions to individual questions, click on the link below the question number.

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.



1

Write the missing number.



One is done for you.

180 $\xrightarrow{\text{is 20 more than}}$ 160

$\xrightarrow{\text{is 20 more than}}$ 237

1 mark



2

A pack of paper has 150 sheets.



4 children each take 7 sheets.

How many sheets of paper are left in the packet?

Show
your
method

A large rectangular grid with 20 columns and 10 rows. A smaller rectangle is drawn on the right side of the grid, spanning 5 columns and 3 rows, starting from the 15th column and the 7th row.

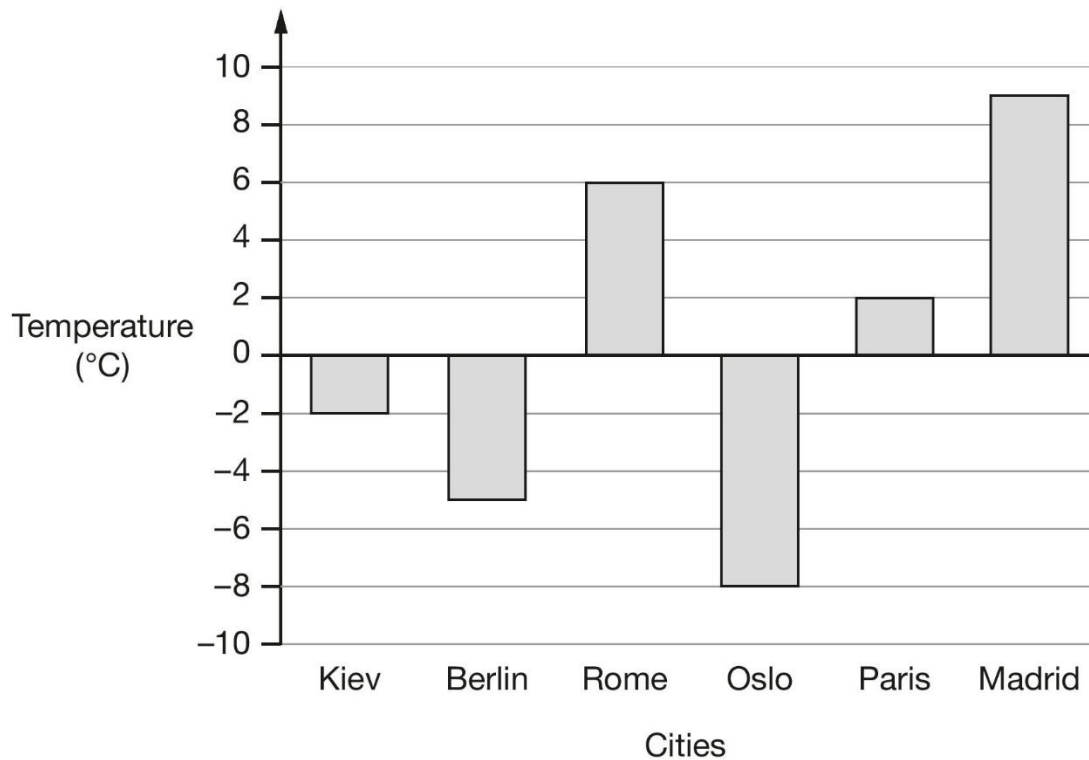
2 marks



3



This graph shows the temperature in six cities on one day in January.



Which city was 4 degrees **warmer** than Kiev?

1 mark

What was the **difference** between the temperature in Oslo and the temperature in Berlin?

°C

1 mark



4

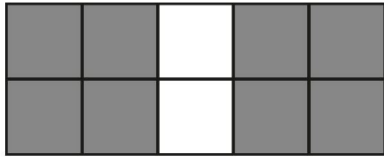
Here are some shapes made of squares.



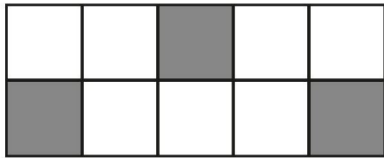
A fraction of each shape is shaded.

Match each shape to its equivalent fraction.

One has been done for you.



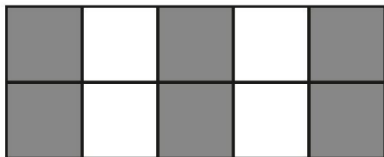
$$\frac{7}{10}$$



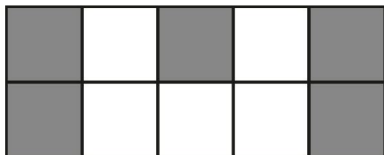
$$\frac{3}{5}$$



$$\frac{1}{2}$$



$$\frac{4}{5}$$



$$\frac{3}{10}$$

2 marks



5

What is 444 minutes in hours and minutes?



hours

minutes

1 mark

6

Stefan's watch shows five minutes past nine.

The watch is twelve minutes fast.



What is the correct time?

1 mark



7



In the circles, write a multiple that belongs to each set.

One has been done for you.

numbers from 1 to 99

multiple of **10**

50

numbers from 101 to 199

multiple of **20**

numbers from 201 to 299

multiple of **30**

numbers from 301 to 399

multiple of **40**

2 marks





A simple line drawing of a shopping bag with two handles and a cupcake with sprinkles next to it.

Cost = number of cakes \times 20p + 15p for the bag

£

Olivia buys a bag of cakes for £5.15

Show
your
method

cakes

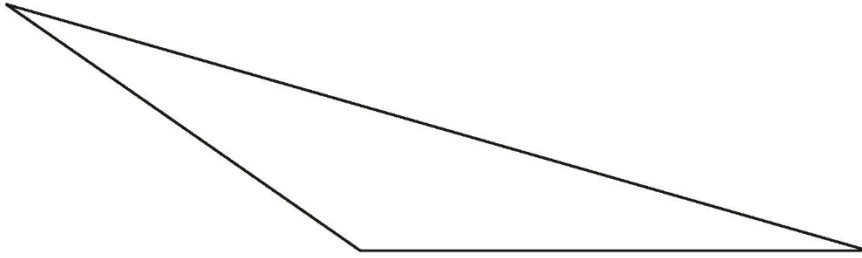
2 marks



9



Here is a triangle.



Measure the shortest side accurately, in centimetres.

1 mark

Measure the largest angle.

1 mark



10



Write the two missing digits to make this **long multiplication** correct.

$$\begin{array}{r}
 \begin{array}{r}
 \times \quad \begin{array}{c} 4 \quad \square \\ \square \quad 6 \end{array} \\
 \hline
 \begin{array}{r}
 2 \quad 4 \quad 6 \\
 8 \quad 2 \quad 0 \\
 \hline
 1 \quad 0 \quad 6 \quad 6
 \end{array}
 \end{array}$$

2 marks



11



Here is a number written in Roman numerals.

CXV

Write the number in figures.

1 mark

12



What number is halfway between 1.4 and 2.1?

1 mark



13

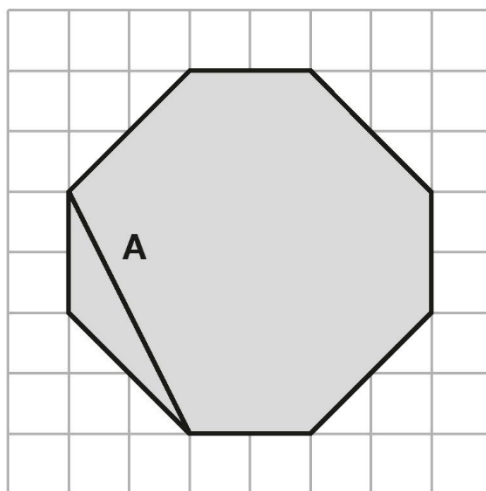


The diagram shows a shaded octagon on a square grid.

Line **A** joins two vertices of the octagon.

Join two other vertices to draw a line **parallel** to line **A**.

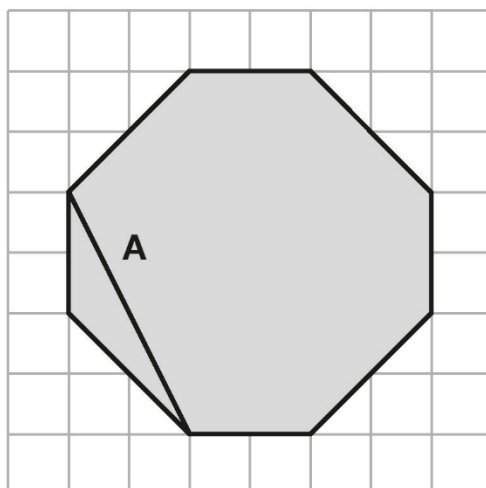
Use a ruler.



1 mark

Join two vertices to draw a line **perpendicular** to line **A**.

Use a ruler.



1 mark



14

Round **124,531**



to the nearest 10,000

to the nearest 1,000

to the nearest 100

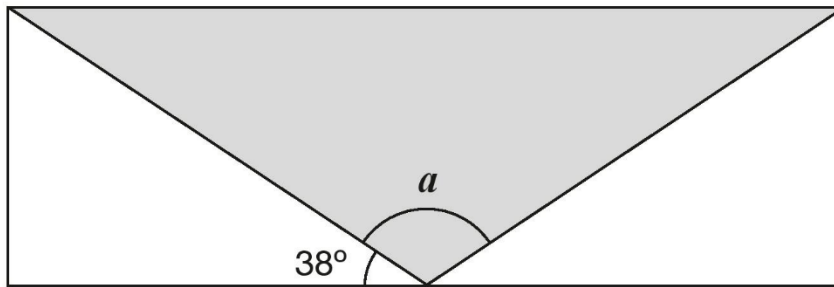
2 marks



15



A shaded **isosceles** triangle is drawn inside a rectangle.



Not
to
scale

Calculate the size of angle a .

Show
your
method

a is	°
--------	---

2 marks



16

VIDEO

Small pizzas cost £6.75 each.

They share the cost equally.

How much does each child pay?

Show
your
method

£

2 marks



17



Seven children measured their heights.

Children	Height (cm)
Stefan	144
Lara	136
Olivia	142
Chen	143
Maria	152
Dev	148
Sarah	150

What is the mean height of the children?

Show
your
method

2 marks

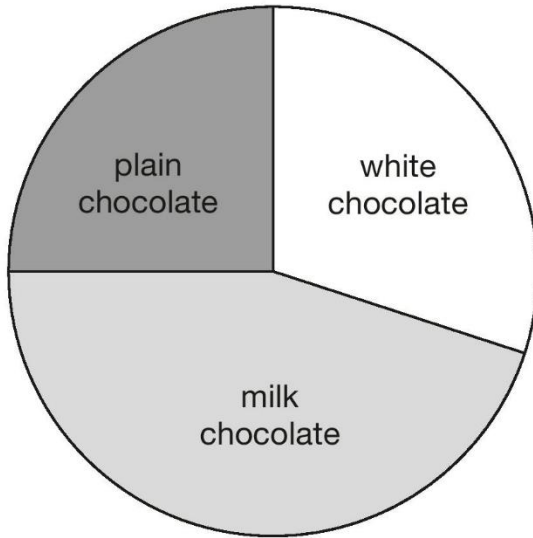


18

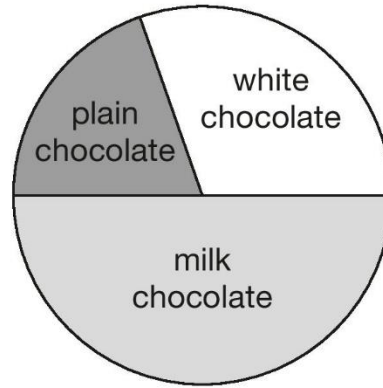


100 girls and 50 boys were asked which kind of chocolate they like best.

These two pie charts show the results.



100 girls



50 boys

Dev says,

"The pie charts show that more girls than boys liked milk chocolate best."

Dev is correct.

Explain how you know.

1 mark



19

One gram of gold costs £32.94




What is the cost of **half a kilogram** of gold?

Show
your
method

A blank sheet of blue graph paper with a thick black border. In the bottom right corner, there is a small white rectangular box with a black outline. Inside this box is the pound sterling symbol (£).

2 marks





How many pages are there in Lara's book?

Show your method

pages

2 marks

