

2018 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						

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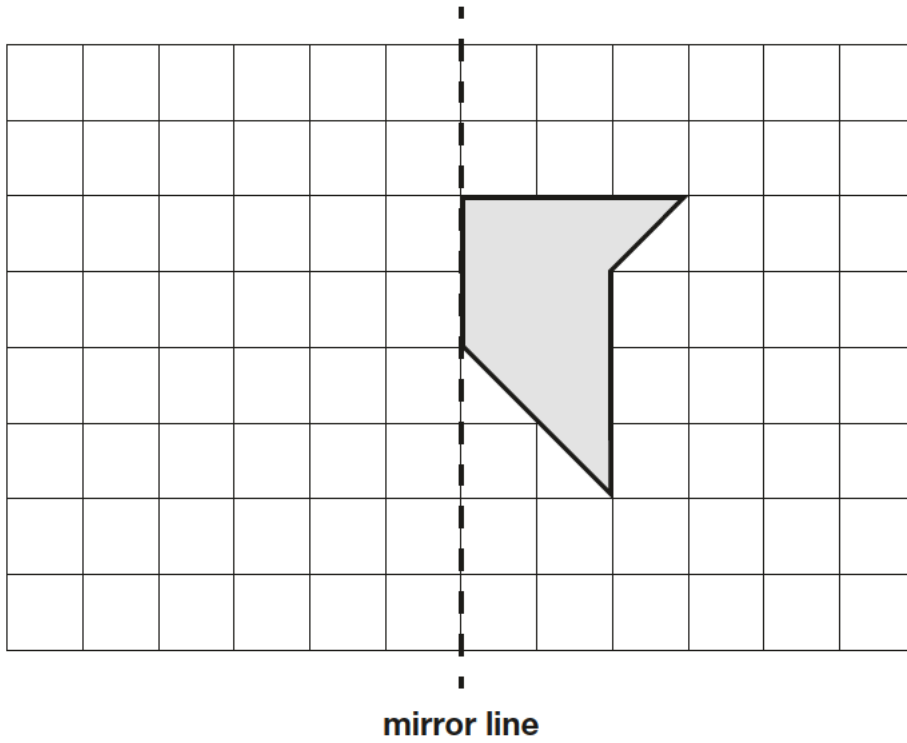
Please do not write on this page.

1

Here is a shape on a grid.

Complete the design so that it is symmetrical about the mirror line.

Use a ruler.



1 mark



2

Stefan completes this calculation.

$$\begin{array}{r} \boxed{9} \boxed{5} \\ - \boxed{6} \boxed{7} \\ \hline \boxed{2} \boxed{8} \end{array}$$

Write an **addition** calculation he could use to check his answer.

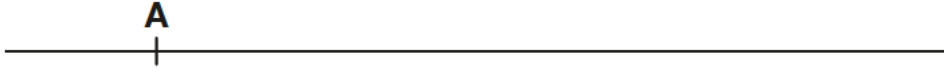
$$\begin{array}{r} \boxed{} \boxed{} \\ + \boxed{} \boxed{} \\ \hline \boxed{} \boxed{} \end{array}$$

1 mark



3

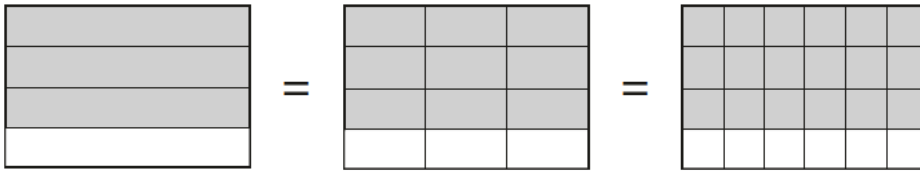
On the line below, mark the point that is 6.7 centimetres from A.



1 mark

4

These diagrams show three equivalent fractions.



Write the missing values.

$$\frac{3}{4} = \frac{9}{\square} = \frac{\square}{24}$$

1 mark

5

Here are the temperatures in four cities at midnight and at midday.

Temperature		
City	At midnight	At midday
Paris	-4°C	-2°C
Oslo	-13°C	-7°C
Rome	3°C	10°C
Warsaw	-6°C	2°C

At **midnight**, how many degrees colder was Paris than Rome?

degrees

1 mark

Which city was 6 degrees colder at midnight than at midday?

1 mark



6

The numbers in this sequence **decrease** by the same amount each time.

303,604 302,604 301,604 300,604 ...

What is the next number in the sequence?

1 mark

7

Tick the **two** numbers that are equivalent to $\frac{1}{4}$

Tick **two**.

0.25

0.75

$\frac{25}{100}$

0.5

$\frac{2}{5}$

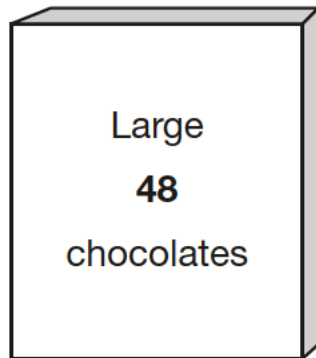
1 mark



8

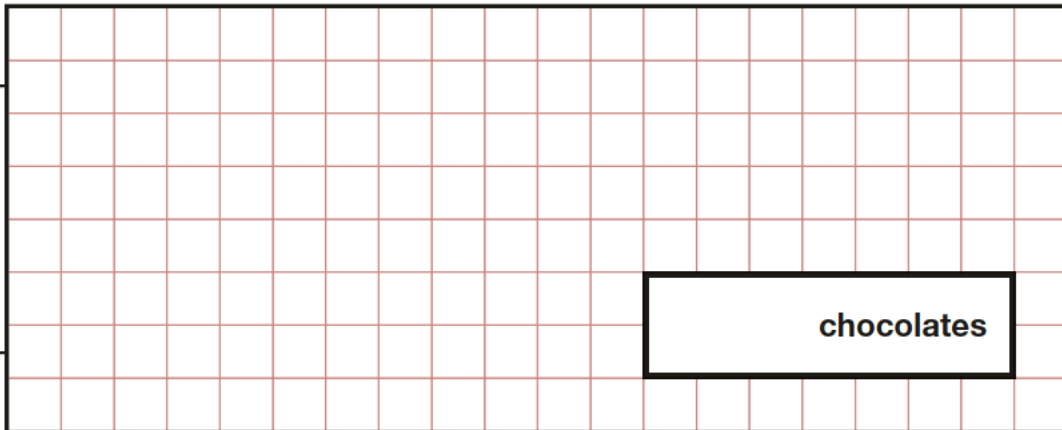
Ken buys 3 large boxes and 2 small boxes of chocolates.

Each large box has 48 chocolates. Each small box has 24 chocolates.



How many **chocolates** did Ken buy altogether?

Show
your
method



chocolates

2 marks



9

The list below shows the years in which the Cricket World Cup was held since 1992:

1992, 1996, 1999, 2003, 2007, 2011, 2015

Adam says,

The Cricket World Cup has been held every four years since 1992.



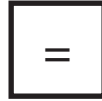
Adam is **not** correct.

Explain how you know.

A large, empty, cloud-shaped box with a scalloped border, intended for the student to write their explanation.

1 mark

10



Write the correct symbol in each box to make the statements correct.

11×12 15×10

$90 \div 30$ $60 \div 20$

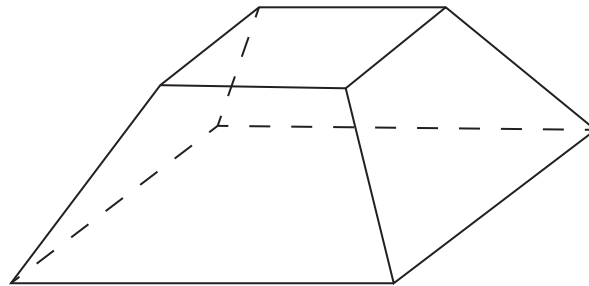
$120 \div 4$ $160 \div 8$

30×8 100×10

2 marks

11

Here is a drawing of a 3-D shape.



Complete the table.

Number of faces	Number of vertices	Number of edges

2 marks

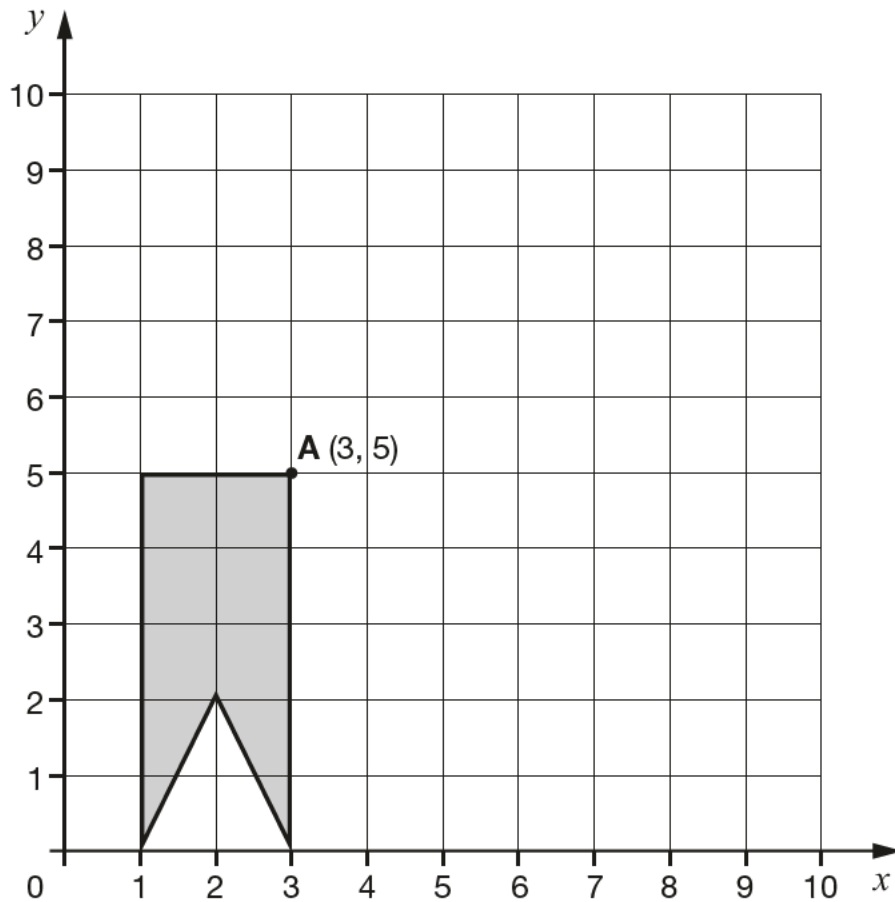
12

Here is a shape on a grid.

The shape is translated so that point **A** moves to (7, 8).

Draw the shape in its new position.

Use a ruler.



1 mark

13

Circle the improper fraction that is equivalent to $6\frac{7}{8}$

$$\frac{67}{8}$$

$$\frac{48}{8}$$

$$\frac{62}{8}$$

$$\frac{55}{8}$$

$$\frac{76}{8}$$

1 mark

14

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

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

$$\frac{3}{4}$$

Write these fractions in order, starting with the **smallest**.

smallest

1 mark

16

Adam wants to use a mental method to calculate $182 - 97$

He starts from 182

Here are some methods that Adam could use.

Tick the methods that are **correct**.

add 3 then subtract 90

subtract 100 then add 3

subtract 7 then subtract 90

subtract 3 then subtract 100

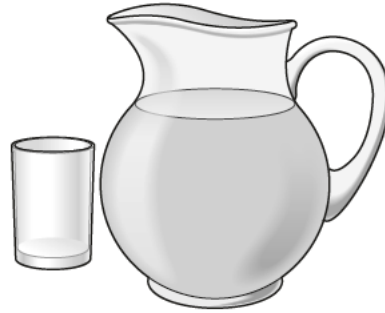
2 marks

17

There are 28 pupils in a class.

The teacher has 8 litres of orange juice.

She pours 225 millilitres of orange juice for every pupil.



How much orange juice is left over?

Show
your
method

A large rectangular grid with a red border and red grid lines. The grid is 20 squares wide and 15 squares high. A small rectangular box is drawn in the bottom right corner of the grid, spanning 4 squares wide and 2 squares high.

3 marks

19

Layla wants to estimate the answer to this calculation.

$$3\frac{9}{10} - 2\frac{1}{8} + 1\frac{4}{5}$$

Tick the calculation below that is the best estimate.

Tick **one**.

$3 - 2 + 2$

$4 - 2 + 1$

$4 - 2 + 2$

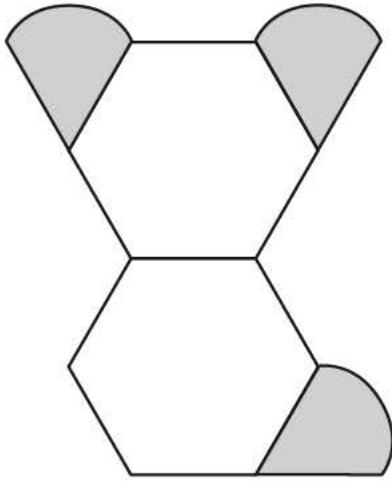
$3 - 2 + 1$

1 mark

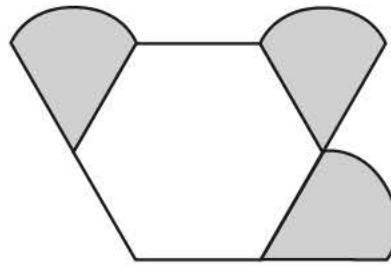
21

Amina is making designs with two different shapes.

She gives each shape a value.

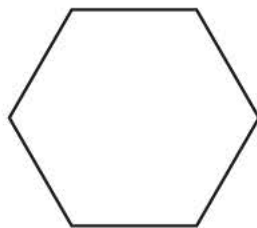


Total value is 147



Total value is 111

Calculate the value of each shape.



=

1 mark



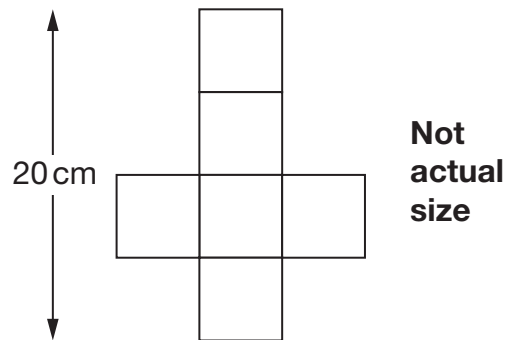
=

1 mark



22

This is the net of a cube.



What is the **volume** of the cube?

cm³

1 mark

23

The length of a day on Earth is 24 hours.

The length of a day on Mercury is $58\frac{2}{3}$ times the length of a day on Earth.

What is the length of a day on Mercury, in **hours**?

Show
your
method

A large grid for showing the method to solve the problem. A small box labeled "hours" is placed on the grid.

2 marks



2018 key stage 2 mathematics

Paper 2: reasoning

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