

2022 national curriculum tests

# Key stage 2

## Mathematics

### Paper 3: reasoning

First name	May					
Middle name						
Last name	Benose					
Date of birth	Day	01	Month	01	Year	12
School name	St Hubert's					
DfE number	000/0000					



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## Instructions

You **must 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 large grid area with a rounded rectangular box on the left side containing the text "Show your method". To the right of the main grid is a smaller, empty rectangular box, representing a method box for a question.

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**.

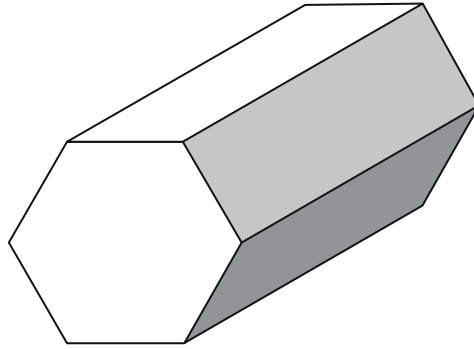
### Marks

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



1

Here is a drawing of a hexagonal prism.



How many **faces** does the prism have?

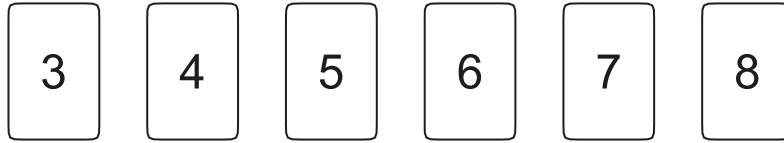
6

1 mark



2

Here are six number cards.



Use **all six** cards to complete the three multiplications below.

$$24 = \boxed{3} \times \boxed{6}$$

$$28 = \boxed{4} \times \boxed{7}$$

$$30 = \boxed{5} \times \boxed{6}$$

1 mark



3

Olivia buys a banana, an apple and a bag of nuts.



30p



45p



60p

She pays with three 50p coins.

What is her change?

Show  
your  
method

$$\begin{array}{r} 30 + 45 + 60 \\ = 135 \end{array}$$

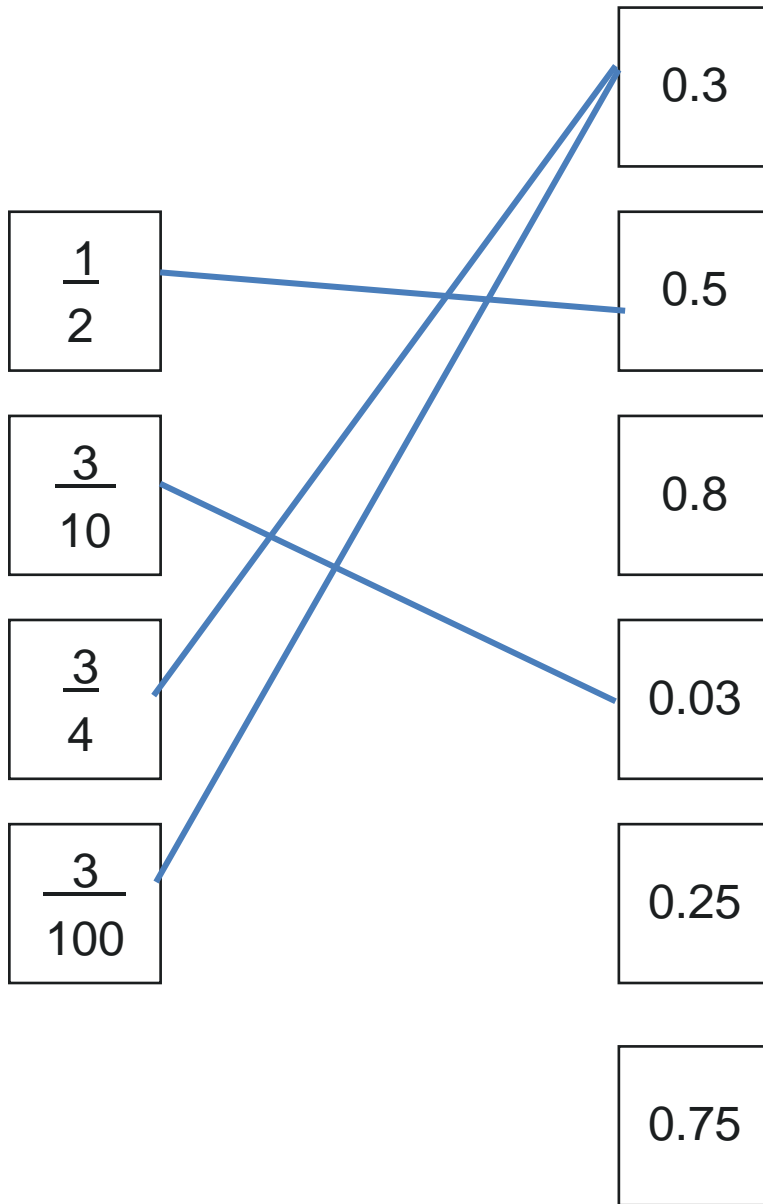
25p

2 marks



4

Draw **four** lines to match each fraction to its equivalent decimal.



2 marks



5

Some children vote for their favourite ice-cream flavour.

Ice-cream flavour	Number of children
vanilla	87
chocolate	154
strawberry	?
mint	38
Total	402

How many children vote for **strawberry**?

Show your method

$$\begin{array}{r} 402 \\ - 154 \\ \hline 248 \end{array}$$

681 children

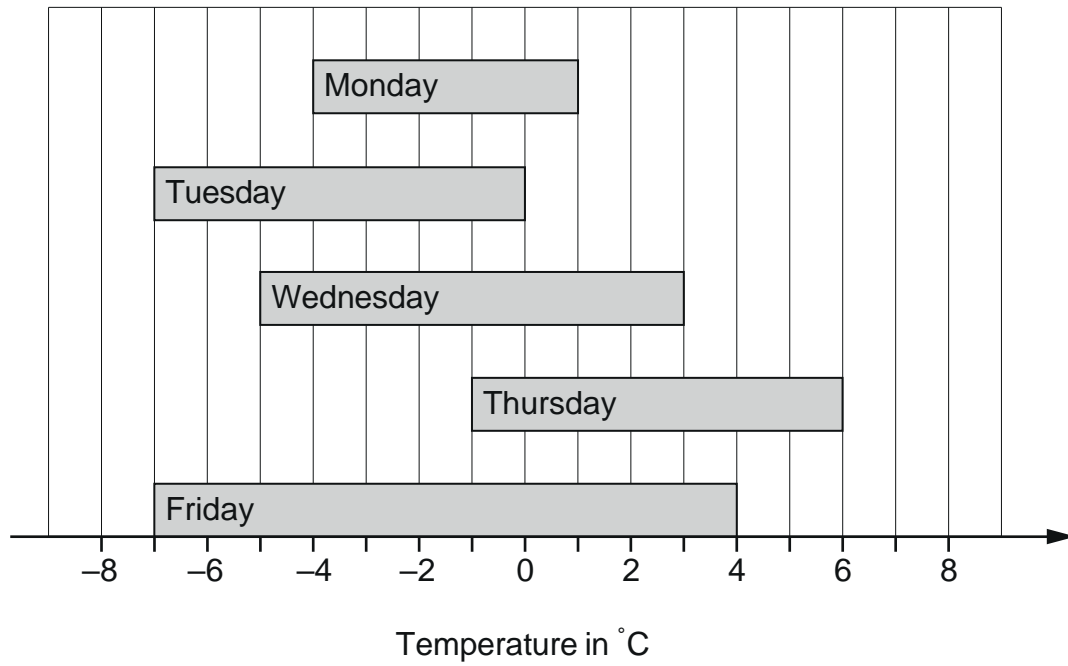
2 marks





6

This chart shows the range of temperatures each day during one week from Monday to Friday.



What was the **lowest** temperature?

-8

1 mark

What was the difference between the highest and lowest temperatures on **Wednesday**?

-8

1 mark



7

One Saturday afternoon, a total of 234,869 people attended three rugby matches.

- 80,978 people attended match 1
- 72,319 people attended match 2

How many people attended match 3?

Show  
your  
method

81,752

2 marks



8

7,546

Round this number:

to the nearest 1,000

7000

to the nearest 100

500

to the nearest 10

50

2 marks

9

Complete the calculation.

$$1,000 \times 416 = 10 \times$$

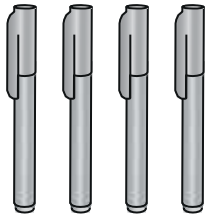
4160

1 mark

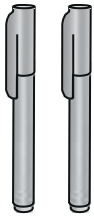


10

Adam buys 4 pens and a ruler and pays £4.75 altogether.



Jack buys 2 pens and pays £1.98 altogether.



How much does a **ruler** cost?

Show  
your  
method

4 . 7 5  
1 . 9 8  
3    2 3

£3.23

2 marks



11

Ally chooses a whole number.

When she multiplies her number by **4**, the answer is **less than 100**

When she multiplies her number by **5**, the answer is **greater than 100**

Write a number that Ally could have started with.

70

1 mark

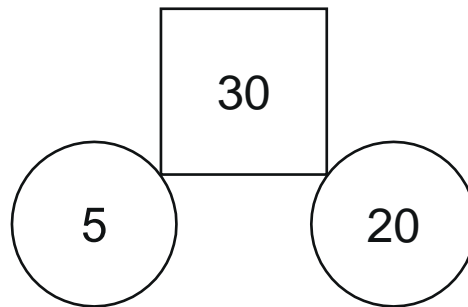
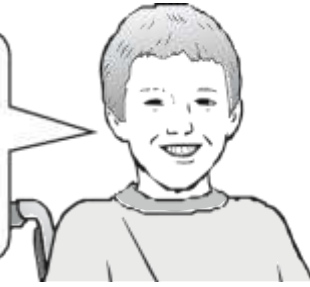


12

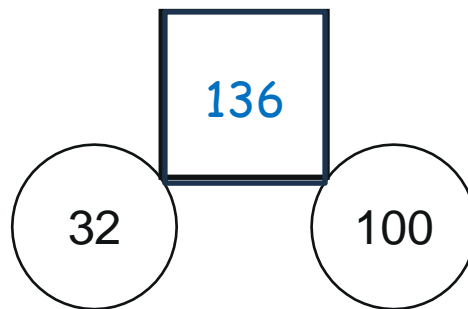
William says the rule for this diagram.

Find the difference between the numbers in the circles.

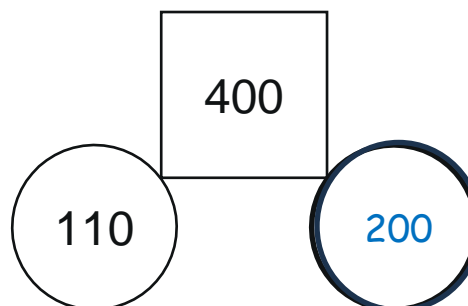
Double this to make the number in the square.



Use the same rule to write the missing numbers below.



1 mark



1 mark



**13**Write the missing fraction to make this **addition** correct.

$$\frac{2}{3} + \boxed{\frac{3}{3}} = \frac{5}{6}$$

1 mark

**14**

Jack hires a hall for a party.

This formula is used to work out the total cost.

**Total cost = £15 booking fee + £12.50 per hour**

What is the total cost of hiring the hall from 6pm until 11pm?

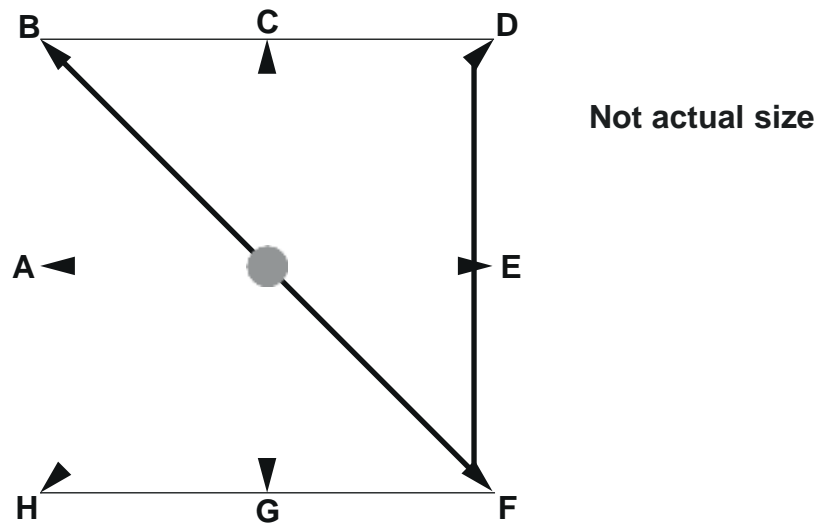
**£ 87.50**

1 mark



15

Stefan stands in the centre of this square.



Stefan is facing towards **F**.

He turns **anti-clockwise** to face **D**.

What **angle** does Stefan turn through?

270degrees

1 mark

Stefan is now facing towards **D**.

He turns **3 right angles clockwise**.

Write the **letter** he faces after the turn.

G

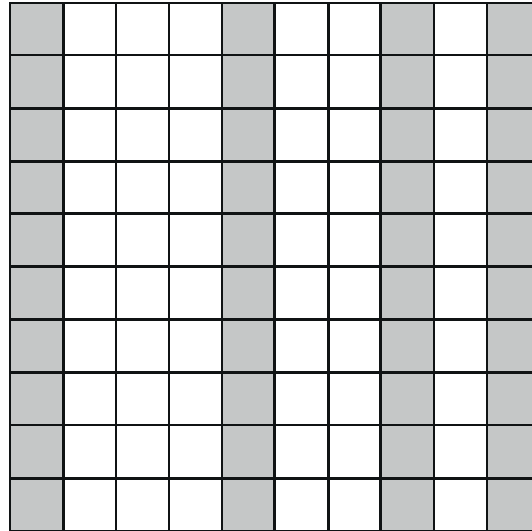
1 mark





16

Part of this 10 × 10 grid is shaded.



Tick the fractions that represent the shaded part of the grid.

$\frac{1}{4}$

$\frac{2}{5}$

$\frac{4}{10}$

$\frac{6}{10}$

$\frac{40}{100}$

2 marks







19

Jack says,

When you square a prime number, the answer has only two factors.



Explain why Jack is **not** correct.

Jack is wrong.  
You can't make a square out of numbers or factors,  
whatever they are.  
He's just wrong.

1 mark

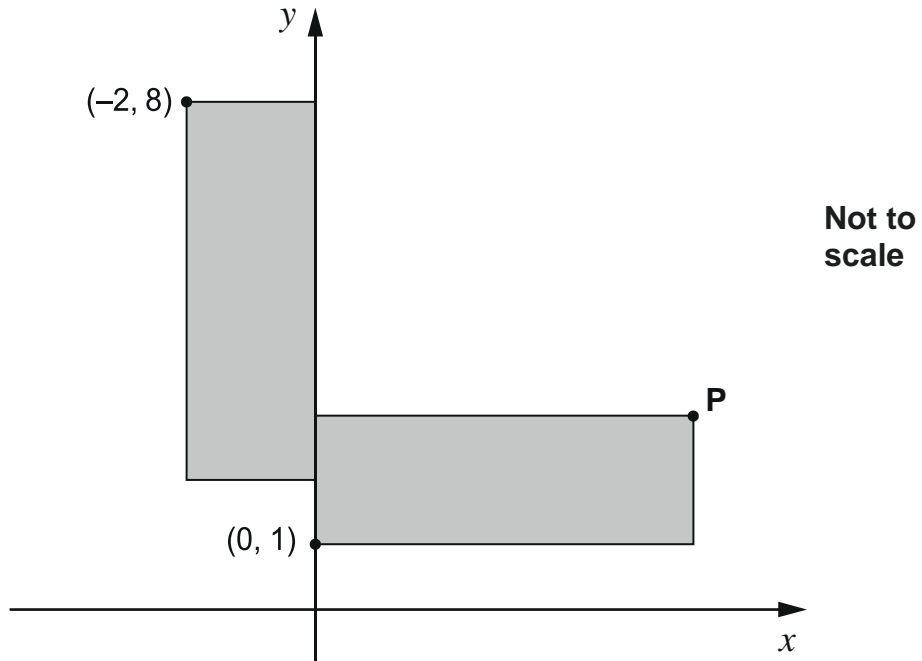




21

These two rectangles are identical.

The length of each rectangle is **three times** its width.



What are the coordinates of point **P**?

( 8, 3 )

1 mark



**[END OF TEST]**

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2022 key stage 2 mathematics

Paper 3: reasoning

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