# Mathematics tests

**Paper 2**  
Calculator *not* allowed

<table>
<thead>
<tr>
<th>First name</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Middle name</td>
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<tr>
<td>Last name</td>
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<tr>
<td>Date of birth</td>
<td>Day</td>
<td>Month</td>
<td>Year</td>
<td></td>
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<tr>
<td>School name</td>
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<tr>
<td>DfE number</td>
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</tbody>
</table>

For marker's use only

<table>
<thead>
<tr>
<th>Page</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
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<tr>
<td>7</td>
<td></td>
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<td>9</td>
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<td>11</td>
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<td>21</td>
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<tr>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Total marks</td>
<td></td>
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</tbody>
</table>

Sourced from SATs-Papers.co.uk  
https://www.SATs-Papers.co.uk
Instructions

You **may not** use a calculator to answer any questions in this test.

Work as quickly and as carefully as you can.

You have **45 minutes** for this test.

If you cannot do one of the questions, **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**.

---

**Follow the instructions for each question carefully.**

- This shows where you need to put the answer.

If you need to do working out, you can use any space on a page.

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**Some questions have an answer box like this:**

Show your working

For these questions you may get a mark for showing your working.
This scale shows how much Chen weighs.

How much does Chen weigh?
Alfie collected information about the pets owned by children in his class. Here are his results.

<table>
<thead>
<tr>
<th>Pet</th>
<th>Number of pets</th>
</tr>
</thead>
<tbody>
<tr>
<td>dog</td>
<td>9</td>
</tr>
<tr>
<td>cat</td>
<td>12</td>
</tr>
<tr>
<td>rabbit</td>
<td>5</td>
</tr>
<tr>
<td>fish</td>
<td>15</td>
</tr>
</tbody>
</table>

This bar chart shows the information from the table. Fill in all the missing labels.
3 Complete this shape so that it is symmetrical about the mirror line.

Use a ruler.

4 Circle three numbers that add to make 750

450  350  250  150  50

1 mark
Seb has a box of **120** cubes.

He uses some of the cubes to build a tower.

**77** cubes are left over.

**How many cubes has he used?**

Seb has **77** cubes left over.

He builds two more towers.

One tower uses **18** cubes and the other uses **35** cubes.

**How many of his **77** cubes has he got left now?**

Show your working
6. In these calculations, each missing sign is a + or a −

Write the missing signs in the circles.

\[ 8 \bigcirc 7 \bigcirc 6 \bigcirc 5 = 2 \]

\[ 8 \bigcirc 7 \bigcirc 6 \bigcirc 5 = 4 \]

7. Megan has 7 coins that make one pound.

The coins are of only two different kinds.

What are the 7 coins?
The numbers in this sequence increase by 10 each time.

3  13  23  ...

The sequence continues in the same way.

Write two numbers from the sequence that add to make a total of 96

Explain why it is not possible to find three numbers from the sequence that add to make a total of 96

Total out of 5
Join each fraction to the correct decimal card.

The first one has been done for you.

\[
\begin{array}{c}
\frac{3}{10} & 0.03 \\
\frac{3}{5} & 0.06 \\
\frac{3}{100} & 0.3 \\
\frac{3}{50} & 0.6 \\
\end{array}
\]
Here are four shapes on a square grid.

Write the letters of all the shapes that have exactly two sides which are equal in length.

A
B
C
D

Total out of 3 _____
11 Calculate $32.18 - 7.62$

1 mark

12 Circle the approximate measurement.

The length of a banana is about...

- 2 cm
- 20 cm
- 2 mm
- 2 m
- 20 m

The mass of an apple is about...

- 2 g
- 20 kg
- 200 kg
- 200 g
- 2 kg

A glass of fruit juice is about...

- 2 ml
- 2 l
- 20 ml
- 200 ml
- 20 l

2 marks
Here is a design of dots and triangles on a square tile.

The tile is turned clockwise to the position below.

Shade the missing shapes in their new positions.

Total out of 5  

2 marks
14  The number in A is **twice** the number in D.

The number in B is **5 less** than the number in C.

The number in D is **10 more** than the number in B.

Write the missing numbers in this diagram.

![Diagram](image)

Now use the same rule for this diagram.

![Diagram](image)
200 children went on holiday.

10% of the children went to Wales.

25% of the children went to Scotland.

How many more children went to Scotland than went to Wales?
Amy did a survey of what time people get up on a Sunday morning. This table shows her results for 150 people.

<table>
<thead>
<tr>
<th>Time</th>
<th>number of people</th>
</tr>
</thead>
<tbody>
<tr>
<td>before 7:00 am</td>
<td>13</td>
</tr>
<tr>
<td>7:00 am to 7:59 am</td>
<td>28</td>
</tr>
<tr>
<td>8:00 am to 8:59 am</td>
<td>59</td>
</tr>
<tr>
<td>9:00 am to 9:59 am</td>
<td>36</td>
</tr>
<tr>
<td>10 am and after</td>
<td>14</td>
</tr>
</tbody>
</table>

Look at the table.

How many people get up at **8am or later**?

Amy says,

*‘Two-thirds of the 150 people in the survey get up before 9am.’*

Amy is correct.

Explain how you know.
Write numbers in the boxes to make this calculation correct.

\[
50 - \boxed{} = \boxed{} + 10
\]

Total out of 3 _____
This graph shows how the temperature changed in Liam’s room one afternoon.

Estimate the temperature at 3:15 pm.

Estimate the time when the temperature was highest.

How much did the temperature change from 2 pm to 2:30 pm? Give your answer to the nearest degree.
Alfie has two sticks.

He puts them end to end.

One stick is 10 cm longer than the other stick.

How long are the two sticks?

Show your working

\[
\begin{align*}
\text{cm} & \quad \text{and} \quad \text{cm} \\
\end{align*}
\]
This diagram shows two *identical* rectangles on coordinate axes.

Write the coordinates of point A and point B.

A is \((_______, ______)\)  

B is \((_______, ______)\)
Amy thought of a number.

She added 0.5 to her number and then doubled the result.

Then she subtracted 0.5 and doubled the new result.

Her final answer was 61

What number did Amy start with?

Show your working
Here is a sketch of a triangle.

It is not drawn to scale.

Draw the full-size triangle accurately below.

Use a protractor (angle measurer) and a ruler.

One line has been drawn for you.
Fill in the three missing whole numbers in this calculation.

Each number is less than 10

\[ \square \times \square \times \square = 105 \]