Mathematics test

Test B
Calculator allowed

First name

Last name

School

DCSF no.

For marker’s use only

<table>
<thead>
<tr>
<th>Page</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
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<tr>
<td>9</td>
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<td>11</td>
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<td>21</td>
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<td>23</td>
<td></td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
</tr>
</tbody>
</table>
These three children appear in some of the questions in this test.

Sarah  Amy  Liam
Instructions

You may 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.

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

Show your **method**. You may get a mark.

For these questions you may get a mark for showing your method.
Join each of these calculations to the number that is nearest to the correct answer.

One has been done for you.

\[
\begin{align*}
110 + 230 & \quad \rightarrow \quad 100 \\
357 - 149 & \quad \rightarrow \quad 200 \\
62 \times 8 & \quad \rightarrow \quad 300 \\
777 - 679 & \quad \rightarrow \quad 400 \\
801 - 444 & \quad \rightarrow \quad 500
\end{align*}
\]
There are five entry gates at an open air concert.

This bar chart shows how many people went through each gate.

How many more people went through gate C than gate D?

How many gates had fewer than 150 people go through?
What’s my number?

It is a three-digit number.
All the digits are odd.
The digits add up to 7

What could my number be?

Draw the reflection of the shaded shape in the mirror line.
This table shows the opening times of a pet clinic.

<table>
<thead>
<tr>
<th>Day</th>
<th>Opening Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>10am to 4:30pm</td>
</tr>
<tr>
<td>Tuesday</td>
<td>10am to 4:30pm</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Closed all day</td>
</tr>
<tr>
<td>Thursday</td>
<td>10:30am to 2:30pm</td>
</tr>
<tr>
<td>Friday</td>
<td>1pm to 6:30pm</td>
</tr>
<tr>
<td>Saturday</td>
<td>10am to 5:30pm</td>
</tr>
<tr>
<td>Sunday</td>
<td>Closed all day</td>
</tr>
</tbody>
</table>

How many hours is the clinic open on Thursday?

On which day is the clinic open for the longest time?

Liam takes his dog to the clinic on Saturday.
He arrives at 9:25 am.

How many minutes is it before the clinic opens?
These are some prices in a flower shop.

- **tulips**: £1.20 for a bunch
- **roses**: 40p each
- **daffodils**: 55p for a bunch

How many roses can you buy for exactly £2?

How much does she pay altogether?

Show your method. You may get a mark.
Sarah has a packet of balloons.

The contents of the packet are
5 red balloons
5 blue balloons
10 yellow balloons

Sarah says,

‘One-quarter of the balloons are red’.

Is Sarah correct?
Circle **Yes** or **No**.

Explain how you know.
Use **all six** digit cards to make three multiples of 3

- multiple of 3
- multiple of 3
- multiple of 3
This table shows the four most popular names for baby girls born each year from 2004 to 2008.

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Emily</td>
<td>Jessica</td>
<td>Olivia</td>
<td>Grace</td>
<td>Olivia</td>
</tr>
<tr>
<td>2nd</td>
<td>Ellie</td>
<td>Emily</td>
<td>Grace</td>
<td>Ruby</td>
<td>Ruby</td>
</tr>
<tr>
<td>3rd</td>
<td>Jessica</td>
<td>Sophie</td>
<td>Jessica</td>
<td>Olivia</td>
<td>Grace</td>
</tr>
<tr>
<td>4th</td>
<td>Sophie</td>
<td>Olivia</td>
<td>Ruby</td>
<td>Emily</td>
<td>Emily</td>
</tr>
</tbody>
</table>

In how many years was Olivia in the top three most popular names?

Write all the years when Emily was a more popular name than Jessica.
This scale shows the mass of Amy’s kitten when it was one month old.

![Scale showing mass of kitten when one month old]

This scale shows the mass of the kitten when it was two months old.

![Scale showing mass of kitten when two months old]

What is the increase in mass?
These diagrams are all made of squares.

Look at each diagram.

Put a tick (✓) if exactly $\frac{1}{3}$ of it is shaded. Put a cross (✗) if it is not.

11i

11ii

2 marks
Use all four digit cards to make this number sentence correct.

\[
\begin{array}{cc}
\text{ } & \times \\
\text{ } & \text{ } \\
\end{array}
\begin{array}{c}
\text{ } \\
\text{ } \\
\end{array}
\begin{array}{c}
\begin{array}{c}
\text{ } \\
\text{ } \\
\end{array}
\end{array}
\begin{array}{c}
> 5000 \\
\end{array}
\\\
12
\]

1 mark

13

Liam thinks of a number.

He divides it by 9 and then adds 25 to the result.

His answer is 36

What number did Liam start with?

Show your method. You may get a mark.
Here is one side of a square drawn on a coordinate grid.

The square has a vertex at (6, 1).

Draw the other three sides of the square on the grid.

Use a ruler.
A builder needs 7600 bricks to build a wall.

There are 500 bricks in a load.

How many loads must the builder buy?

The price of one load of 500 bricks is £230

What is the cost in pence of one brick?
Here are five shaded triangles on a square grid.

Write the letter of each triangle that has a **right angle**.

Write the letter of each triangle that has **two equal sides**.

16a 1 mark

16b 1 mark

Total out of 4 ___
This graph shows the outside temperature from 4pm to 10pm on a day in winter.

At what time was the temperature \(-2^\circ C\)?

How many degrees did the temperature drop from 5pm to 7pm?
Sarah, Amy and Liam stand on some weighing scales two at a time.

Here are the measurements:

- Sarah and Amy: 70 kg
- Sarah and Liam: 80 kg
- Liam and Amy: 80 kg

How much does Liam weigh?
Cubes have been stuck together to make this block.

The block has a pattern on two faces.

The block is turned to the position below.

Draw the missing parts of the pattern on it.
20 Calculate \(\frac{7}{16}\) of 288

21 Here are four pairs of measurements.

For each pair, put a ring around the larger measurement.

One has been done for you.

- 4 centimetres 4 inches
- 10 kilometres 10 miles
- 2 litres 2 pints
- 5 grams 5 pounds
Put a tick (✓) in each row to complete this table.

One has been done for you.

<table>
<thead>
<tr>
<th></th>
<th>less than 1000</th>
<th>equal to 1000</th>
<th>more than 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5 \times 15 \times 25$</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>$16 \times (80.3 - 17.8)$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$3888 \div (4.32 - 0.57)$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$(32 - 5.7) \times (32 + 5.7)$</td>
<td></td>
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</tbody>
</table>

$k$ stands for a number.

Complete the number sentences below.

One has been done for you.

1. 5 more than $k$ is $k + 5$
2. 2 less than $k$ is ___________
3. 3 more than twice $k$ is ___________
4. 6 more than half of $k$ is ___________
Here are two bags of marbles, A and B.

Each bag contains blue marbles and red marbles only.

A

3 blue marbles and 3 red marbles

B

6 blue marbles and 9 red marbles

Liam chooses a marble from each bag without looking.

From which bag is he more likely to choose a blue marble?

Circle A or B.

A / B

Explain how you know.