First name ____________________________________________

Last name ____________________________________________

School ________________________________________________

Remember
- The test is 1 hour long.
- You may use a calculator for any question in this test.
- You will need: pen, pencil, rubber, ruler, tracing paper and mirror (optional) and a calculator.
- This test starts with easier questions.
- Try to answer all the questions.
- Write all your answers and working on the test paper – do not use any rough paper. Marks may be awarded for working.
- Check your work carefully.
- Ask your teacher if you are not sure what to do.
## Instructions

<table>
<thead>
<tr>
<th>Answers</th>
<th>This means write down your answer or show your working and write down your answer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculators</td>
<td>You <strong>may</strong> use a calculator to answer any question in this test.</td>
</tr>
</tbody>
</table>
1. Each rule below makes a sequence. Use the rule to write the **next two numbers** for each sequence.

**Rule:** Add 3 to the last number

<table>
<thead>
<tr>
<th>2</th>
<th>5</th>
<th>8</th>
<th></th>
<th></th>
</tr>
</thead>
</table>

**Rule:** Double the last number then add 1

<table>
<thead>
<tr>
<th>2</th>
<th>5</th>
<th>11</th>
<th></th>
<th></th>
</tr>
</thead>
</table>

**Rule:** Multiply the last number by 3 then subtract 1

<table>
<thead>
<tr>
<th>2</th>
<th>5</th>
<th>14</th>
<th></th>
<th></th>
</tr>
</thead>
</table>
2. The table shows when Julie has to hand in homework for different subjects.

<table>
<thead>
<tr>
<th></th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maths</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>French</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Art</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Music</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(a) On what days does Julie have to hand in French homework?

_Thursdays_ and _Fridays_  

(b) On Thursdays, Julie has to hand in homework for three subjects. What subjects are these?

_Thursdays, Wednesdays_, and _Mondays_

(c) On Tuesday, the Art teacher gives Julie her homework. How many nights are there before she has to hand in her Art homework?

_Tuesday_
3. Look at these five shapes.

(a) Complete the sentences below.

The first one is done for you.

Shape A is the only shape with three sides.

Shape _____ is the only shape with no right angles.

Shape _____ is the only shape with no lines of symmetry.

(b) Now complete this sentence.

Shape B is the only shape with four _____________________________
4. Hedgehogs and dormice are small animals that sleep through the winter.

The shaded parts of the chart show when they sleep.

Use the chart to answer these questions.

(a) Hedgehogs go to sleep in the middle of November.

For how many months do they sleep?


months

(b) Look at this statement.

Dormice sleep for more than half of the year.

Is the statement true?

☐ Yes  ☐ No

Explain your answer.
5. Here are the costs of tickets for a concert.

<table>
<thead>
<tr>
<th>Concert tickets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults: £24.50 each</td>
</tr>
<tr>
<td>Children: £16.45 each</td>
</tr>
</tbody>
</table>

(a) Two adults go to the concert with three children. 
Altogether, how much do their tickets cost?

£

(b) Three adults go to the concert with some children. 
Altogether, their tickets cost £155.75

How many children went to the concert with the three adults?
6. Anna is making a cake.

(a) The scale shows how much sugar she uses.

How much sugar does Anna use?

(b) Anna uses 275g of raisins.

Draw the arrow on the scale to show 275g.
(c) Anna put the cake in the oven at **11am**.

She took the cake out of the oven after **3 hours**.

At what time did she take the cake out of the oven?

(d) Look at this diagram of the cake tin.

Tick (✓) the **correct name** for the shape of the tin.

- Cube
- Cuboid
- Cylinder
- Pyramid
- Cone
The table shows some information about items sold in a school shop.

<table>
<thead>
<tr>
<th>Name of item</th>
<th>Number of items sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glue</td>
<td>8</td>
</tr>
<tr>
<td>Pens</td>
<td>22</td>
</tr>
<tr>
<td>Rulers</td>
<td>14</td>
</tr>
</tbody>
</table>

The bar chart below shows the same information.

Write the missing information in the spaces around the chart.
8. Look at the graph.

(a) Write down the coordinates of points A and C.

A is (______, ______)  

C is (______, ______)  

(b) Point D can be marked so that ABCD is a **rectangle**.  
Mark point D accurately on the graph.
9. (a) The diagram shows how two congruent ‘F-tiles’ fit together to make a rectangle.

Show how the two congruent ‘F-tiles’ can fit together to make this shape.

(b) Two other tiles fit together to make a different shape.

The two tiles are congruent but they are not ‘F-tiles’.

What shape could the tiles be?
Show them on the diagram.

What other shape could the tiles be?
Show them on the diagram.
10. These are the names of the twelve people who work for a company.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ali</td>
<td>Claire</td>
<td>Kiki</td>
<td>Suki</td>
</tr>
<tr>
<td>Brian</td>
<td>Claire</td>
<td>Lucy</td>
<td>Tom</td>
</tr>
<tr>
<td>Claire</td>
<td>James</td>
<td>Ryan</td>
<td>Tom</td>
</tr>
</tbody>
</table>

(a) What name is the mode?

(b) One person leaves the company. A different person joins the company.

Now the name that is the mode is Tom.

Write the missing names in the sentences below.

The name of the person who leaves is ________________

The name of the person who joins is ________________
11. The scale drawing shows three leaves from different trees. The drawing on the right shows the leaves drawn on top of each other.

(a) Compare the areas of the leaves. Write the leaves in order, smallest area first.

(b) Now compare the perimeters of the leaves. Write the leaves in order, smallest perimeter first.
12. Here is information about some bags of marbles.

Altogether, there are 10 bags.
Each bag contains 12 marbles.
Each marble weighs 7 grams.

Use the information to match each question with the correct calculation.
The first one is done for you.

<table>
<thead>
<tr>
<th>Question</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many <strong>bags</strong> are there altogether?</td>
<td>10</td>
</tr>
<tr>
<td>How many <strong>marbles</strong> are there altogether?</td>
<td>10 × 12</td>
</tr>
<tr>
<td>How much does each <strong>bag</strong> of marbles weigh?</td>
<td>12 × 7</td>
</tr>
<tr>
<td>How much do <strong>all 10</strong> bags of marbles weigh altogether?</td>
<td>10 × 12 × 7</td>
</tr>
</tbody>
</table>
13. Look at this equation.

\[
4 + a = b
\]

Write a pair of numbers for \( a \) and \( b \) to make the equation true.

\[
a = \quad b = \\
\]

1 mark

Now write a different pair of numbers for \( a \) and \( b \) to make the equation true.

\[
a = \quad b = \\
\]

1 mark
14. Here is a shape.

I turn the shape through 45° clockwise.

Tick (✓) the diagram that shows the shape after the turn.

15. Leena buys balloons, hats and masks for a party.

Write the missing numbers in the table.

<table>
<thead>
<tr>
<th></th>
<th>Cost of each (£)</th>
<th>Number bought</th>
<th>Total cost (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packets of balloons</td>
<td>4.95</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Hats</td>
<td>3.20</td>
<td></td>
<td>41.60</td>
</tr>
<tr>
<td>Masks</td>
<td></td>
<td>10</td>
<td>19.50</td>
</tr>
</tbody>
</table>

Total: 56.50
16. Carlos and Mary each did a survey.

(a) Carlos asked people: ‘Have you ever been to North America?’

The percentage bar chart shows his results.

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

40 people said No.

How many people said Yes?

___________ people

(b) Mary asked 10 people: ‘Would you like to go to South America?’

Results: 5 of the 10 people said ‘No’.

4 of the 10 people said ‘Don’t know’.

1 of the 10 people said ‘Yes’.

Complete the percentage bar chart to show these results.

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>
17. The graph shows the date each year that frogs’ eggs were first seen.

(a) On what date in 1997 were frogs’ eggs first seen?

(b) At the beginning of each year, the warmer the weather, the earlier frogs’ eggs are first seen.

What can you say about the weather at the beginning of 1991?
18. (a) Here is an expression.

\[ 2a + 3 + 2a \]

Which expression below shows it written as simply as possible?
Put a ring round the correct one.

\[ 7a \quad 7 + a \quad 2a + 5 \quad 4a + 3 \quad 4(a + 3) \]

(b) Here is a different expression.

\[ 3b + 4 + 5b - 1 \]

Write this expression as simply as possible.
19. Here are two containers and the amounts they hold.

\[ \text{A} \quad 750 \text{ millilitres} \]
\[ \text{B} \quad 0.5 \text{ litre} \]

Which container holds the greater amount?

\[ \square \text{ A } \quad \square \text{ B } \]

How much more does it hold?

Give your answer in millilitres.

____________________ millilitres

1 mark

20. (a) A triangle has **three equal sides**.

Write the sizes of the **angles** in this triangle.

\[ \quad \circ \quad \circ \quad \circ \]

\[ \quad , \quad , \quad \] 1 mark

(b) A **right-angled triangle** has **two equal sides**.

Write the sizes of the **angles** in this triangle.

\[ \quad \circ \quad \circ \quad \circ \]

\[ \quad , \quad , \quad \] 1 mark
21. The diagram shows five fair spinners with grey and white sectors. Each spinner is divided into equal sectors.

I am going to spin all the pointers.

(a) For one of the spinners, the probability of spinning grey is \(\frac{3}{4}\). Which spinner is this? Write its letter.

(b) For two of the spinners, the probability of spinning grey is more than 60% but less than 70%. Which two spinners are these? Write their letters.
22. (a) Look at the drawing of a prism on the grid.

How many faces does the prism have?

(b) Use the grid below to draw a solid with 6 faces.
23. The graph shows the average heights of fir trees of different ages.

The table shows the cost of fir trees of different heights.

<table>
<thead>
<tr>
<th>Height (metres)</th>
<th>Age (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.5</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>1.5</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>2.5</td>
<td>6</td>
</tr>
</tbody>
</table>

The table shows the cost of fir trees of different heights.

<table>
<thead>
<tr>
<th>Height (metres)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 cm to 159 cm</td>
<td>£20.00</td>
</tr>
<tr>
<td>160 cm to 199 cm</td>
<td>£25.00</td>
</tr>
<tr>
<td>200 cm to 239 cm</td>
<td>£30.00</td>
</tr>
</tbody>
</table>

(a) One of these fir trees is \( \frac{5}{2} \) years old.

How much is it likely to cost? £

(b) One of these fir trees costs £25.00

How old is the tree likely to be?

Between ________ and ________ years old
24. Here is a rectangle.

(a) A square has the same area as this rectangle. What is the side length of this square?

(b) A different square has the same perimeter as this rectangle. What is the side length of this square?
25. Kate buys 24 cans of lemonade.

She buys the cans in packs of 4
Each pack costs £1.20

Steve buys 24 cans of lemonade.

He buys the cans in packs of 6
Each pack costs £1.60

Kate pays more for her 24 cans than Steve pays for his 24 cans.

How much more?
26. Three shapes fit together at point B.

Will ABC make a straight line?

☐ Yes  ☐ No

Explain your answer.

27. Solve these equations.

\[32x + 53 = 501\]

\[x = \quad \text{1 mark}\]

\[375 = 37 + 26y\]

\[y = \quad \text{1 mark}\]
END OF TEST