Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Date of birth

Day Month Year

Scottish candidate number

Number of seat

1 You may NOT use a calculator.

2 Answer as many questions as you can.

3 Write your working and answers in the spaces provided. Additional space is provided at the end of this question-answer book for use if required. If you use this space, write clearly the number of the question involved.

4 Full credit will be given only where the solution contains appropriate working.

5 Before leaving the examination room you must give this book to the invigilator. If you do not, you may lose all the marks for this paper.
1. Work out the answers to the following.
   (a) \(3891 - 261\)

   **WORKING**

   **ANSWER**

   (b) \(5.12 \times 6\)

   **WORKING**

   **ANSWER**

   (c) \(\frac{1}{3}\) of 114

   **WORKING**

   **ANSWER**
2. Find 25% of £9.60.

WORKING

ANSWER £

3. Jim is running a marathon race.

(a) The race begins at 1740. Write this as a 12-hour time.

ANSWER pm

(b) Jim finishes the race at 2015. How long does he take to run the race?

WORKING

ANSWER hours minutes
4. When a book is borrowed from the school library the return date is stamped on it. The return date is **two weeks** after the date on which the book is borrowed.

(a) Mary borrowed a book from the school library on 18 November. 
What return date was stamped on the book?

<table>
<thead>
<tr>
<th>WORKING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>Return date</th>
</tr>
</thead>
</table>

A fine must be paid if a book is not returned on time. 
The fine is 5 pence per day for every day **after** the return date.

(b) John borrowed a book from the school library on 7 January and returned it on 30 January.
How much was his fine?

<table>
<thead>
<tr>
<th>WORKING</th>
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</thead>
<tbody>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>pence</th>
</tr>
</thead>
</table>

2

3
5. A table is 56 centimetres high and has a circular top of radius 20 centimetres.

A circular tablecloth just reaches the ground when it is laid on the table.

What is the diameter of the tablecloth?

**WORKING**

**ANSWER**

[3 centimetres]
6. This map shows the positions of some tourist attractions in a city centre.

The Olympic Pool is north of Central Station.

(a) What is the direction of the Cathedral from Central Station?

<table>
<thead>
<tr>
<th>ANSWER</th>
</tr>
</thead>
</table>

(b) Measure the distance from Central Station to the Cathedral on the map.

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>centimetres</th>
</tr>
</thead>
</table>

(c) The scale of the map is 1 centimetre represents 100 metres.

Calculate the actual distance from Central Station to the Cathedral.

<table>
<thead>
<tr>
<th>WORKING</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>metres</th>
</tr>
</thead>
</table>
7. This signpost shows the distances from a road junction to an airport and two towns, Bolden and Cranley.

Which town is nearer to the airport?
Give a reason for your answer.

WORKING

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>is nearer to the airport</th>
</tr>
</thead>
<tbody>
<tr>
<td>REASON</td>
<td></td>
</tr>
</tbody>
</table>

[END OF QUESTION PAPER]
Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Date of birth
   Day Month Year

Scottish candidate number

Number of seat

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1. A bridge is raised 58° to allow a ship to pass through.

Calculate the size of the shaded angle.

WORKING

ANSWER °
2. The graph below shows how the temperature on a mountain top changed during a day.

(a) What was the temperature at 2 am?

**ANSWER** °C

(b) What happened to the temperature between 2 pm and 10 pm?

**ANSWER**
3. The pattern below is made with tiles like the one shown here.

Draw three more tiles to continue the pattern.

YOU MAY USE THE EXTRA DIAGRAMS ON THE OPPOSITE PAGE FOR WORKING IF YOU WISH.
3. (continued)

[Diagram of a grid with shaded sections]

[Diagram of another grid with shaded sections]
4. Karen lives on a farm. The table below shows how many eggs were laid by the hens on the farm one week.

<table>
<thead>
<tr>
<th>Day</th>
<th>Eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>24</td>
</tr>
<tr>
<td>Tuesday</td>
<td>26</td>
</tr>
<tr>
<td>Wednesday</td>
<td>20</td>
</tr>
<tr>
<td>Thursday</td>
<td>21</td>
</tr>
<tr>
<td>Friday</td>
<td>24</td>
</tr>
<tr>
<td>Saturday</td>
<td>22</td>
</tr>
<tr>
<td>Sunday</td>
<td>24</td>
</tr>
<tr>
<td>TOTAL</td>
<td>161</td>
</tr>
</tbody>
</table>

(a) Write down the mode.

**ANSWER**

(b) Calculate the mean number of eggs laid per day.

**WORKING**

**ANSWER**
5. Benny has a lock for his bicycle. The lock has a **three-figure** code.

The code uses the figures 2, 3, 4 or 5.
The three figures used always add up to 12.

The table below shows two possible three-figure codes.

<table>
<thead>
<tr>
<th>first figure</th>
<th>second figure</th>
<th>third figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

Complete the table to show five other possible three-figure codes.
6. This is a plan of Sunita's lawn. It is a rectangle.

(a) Calculate the area of the lawn.

\[ \text{Area} = \text{length} \times \text{width} \]

\[ = 6 \text{ m} \times 2.5 \text{ m} \]

\[ = 15 \text{ square meters} \]

(b) Sunita has bought one kilogram of grass seed for her lawn.

50 grams of grass seed are needed for each square metre of lawn.

Has Sunita bought enough grass seed?

Give a reason for your answer.

\[ \text{GRAMS NEEDED} = 6 \times 50 \]

\[ = 300 \text{ grams} \]

\[ \text{SEED BOTTLE} = 1 \text{ kg} \]

\[ = 1000 \text{ grams} \]

Sunita has bought enough grass seed.
7. Gerry has a part-time job.
   He was paid £23.60 for working 5 hours.
   How much would he be paid for working 8 hours at the same rate of pay?

<table>
<thead>
<tr>
<th>WORKING</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>£</th>
</tr>
</thead>
</table>
8. From ground level in a block of flats, a lift travels 4 metres upwards to reach the first floor. It then travels 3 metres upwards for each floor above that.

(a) Complete this table.

<table>
<thead>
<tr>
<th>Floor number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height of lift above ground level (metres)</td>
<td>4</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Write down a rule for finding the height of the lift above ground level if you know the floor number.
9. Safety rules state that pupils on school trips must be supervised. One teacher can supervise no more than 12 pupils.

(a) How many teachers would be needed on a trip with 30 pupils?

WORKING

ANSWER teachers

(b) The Mathematics department hires a coach with 50 seats for a trip.
To keep costs down, as many pupils as possible should go on the trip.
How many teachers and how many pupils can go on the trip?

WORKING

ANSWER teachers pupils
A shop sells helium filled balloons.

It sells small balloons for £3.20 each and large ones for £4.90 each.

Joe buys 2 small balloons and some large balloons for a total cost of £26.

How many large balloons does Joe buy?

WORKING

ANSWER

large balloons
11. The diagram below shows the net of a cuboid with no lid.

(a) Write down the length, breadth and height of the cuboid made from this net.

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>Length =</th>
<th>centimetres</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breadth =</td>
<td>centimetres</td>
<td></td>
</tr>
<tr>
<td>Height =</td>
<td>centimetres</td>
<td></td>
</tr>
</tbody>
</table>

(b) Calculate the volume of the cuboid in part (a).

<table>
<thead>
<tr>
<th>WORKING</th>
</tr>
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<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>cubic centimetres</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12. Complete this electricity bill.

**NORTHERN ELECTRIC**

- 950 units at 6p per unit = £
- VAT at 5% = £
- TOTAL = £

**WORKING**
13. A bank uses this rule to work out the price (in pounds) that its customers can afford to pay for a house.

\[ \text{PRICE} = (3.5 \times \text{ANNUAL SALARY}) + \text{DEPOSIT} \]

(a) Alison has an annual salary of £23,000 and a deposit of £5,000.
Calculate the price that she can afford to pay for a house.

WORKING

\[ \text{ANSWER} \] £

(b) Emma wants to buy a house priced at £82,500.
Her annual salary is £21,400.
How much of a deposit will she need?

WORKING

\[ \text{ANSWER} \] £
14. This table shows the distance Lucy’s car can travel on 1 gallon of petrol at two different speeds.

<table>
<thead>
<tr>
<th>Speed</th>
<th>Distance travelled on 1 gallon of petrol</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 miles per hour</td>
<td>50 miles</td>
</tr>
<tr>
<td>70 miles per hour</td>
<td>40 miles</td>
</tr>
</tbody>
</table>

(a) What distance will Lucy’s car travel at a speed of 70 miles per hour on 10 gallons of petrol?

WORKING

ANSWER

(b) How much further would Lucy’s car travel on 10 gallons of petrol if she drove at a speed of 55 miles per hour instead of 70 miles per hour?

WORKING

ANSWER

[END OF QUESTION PAPER]