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) \[1375 + 462\]

\[\text{WORKING}\]

\[\text{ANSWER}\]

(b) \[5.23 \times 4\]

\[\text{WORKING}\]

\[\text{ANSWER}\]

(c) \[\frac{1}{8} \text{ of 120 metres}\]

\[\text{WORKING}\]

\[\text{ANSWER} \quad \text{metres}\]
Fred bought a bicycle in this sale.
The marked price was £150.
How much money was taken off the marked price?

**WORKING**

**ANSWER**

£
3. Draw an enlargement of this shape on the grid below. Make each of its sides twice as long.
4. When George decorates his son’s bedroom, he uses a wallpaper border.

(a) Tick (✓) the next shape George will see as he continues to unroll the border.

(b) Write down the mathematical name of the shape you have ticked.

ANSWER
Sheila's car can travel 20 kilometres on 1 litre of fuel.
She is planning a journey of 140 kilometres.
How many litres of fuel will Sheila need for the journey?

WORKING

ANSWER

litres

2
Pauline is given a film on DVD for her birthday. The film has a running time of 135 minutes.

Pauline starts to watch the film at 7.50 pm. She wants to watch the television programme, Football Highlights, which starts at 10.15 pm.

When the film ends, how long will it be until the start of Football Highlights?

**WORKING**

**ANSWER** \[ \text{minutes} \]

\[ 4 \]
7. This map shows the positions of a School, a Bus Station and a Mobile Phone Transmitter.

(a) Measure the distance from the School to the Bus Station on the map.

\[
\begin{array}{|c|}
\hline
\text{ANSWER} & \text{centimetres} \\
\hline
\end{array}
\]

(b) The scale of the map is 1 centimetre represents 100 metres. Find the actual distance from the School to the Bus Station.

\[
\begin{array}{|c|}
\hline
\text{WORKING} & \\
\hline
\end{array}
\]

\[
\begin{array}{|c|}
\hline
\text{ANSWER} & \text{metres} \\
\hline
\end{array}
\]
New safety regulations state that mobile phone transmitters should be more than 1 kilometre from any school.

Is the Mobile Phone Transmitter shown on the map a safe distance from the School?

You must give a reason for your answer.
8. Rebecca is on a submarine looking at the radar screen.

A and B show the positions of two ships.
Ship A is on a bearing of 120° from the submarine.
Write down the bearing of ship B from the submarine.

ANSWER

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

Full name of centre: [ ]

Forename(s): [ ]

Surname: [ ]

Date of birth: [ ] [ ] [ ]

Scottish candidate number: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Number of seat: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

1 You may use a calculator.

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1. A ball hits the edge of a snooker table at an angle of $32^\circ$ and rebounds from the edge at the same angle.

Calculate the size of the shaded angle.

**WORKING**

**ANSWER** $32^\circ$
Mrs Wong is choosing a new car.

The Colour can be **Black** or **Red**
The Style can be **Saloon** or **Hatchback**
The Engine Type can be **Petrol** or **Diesel**

The table below shows one possible combination.

<table>
<thead>
<tr>
<th>Colour</th>
<th>Style</th>
<th>Engine Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Hatchback</td>
<td>Diesel</td>
</tr>
</tbody>
</table>

Complete the table to show five other possible combinations.
3. The final scores in the Masters Golf Championship are shown below.

<table>
<thead>
<tr>
<th>Player</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howard Barclay</td>
<td>–1</td>
</tr>
<tr>
<td>Alan Palmer</td>
<td>+2</td>
</tr>
<tr>
<td>Ben Logan</td>
<td>–3</td>
</tr>
<tr>
<td>Scott Adam</td>
<td>+5</td>
</tr>
<tr>
<td>Norman Greig</td>
<td>–2</td>
</tr>
</tbody>
</table>

The player with the **lowest** score wins the championship.

Who won?

**ANSWER**
Here is part of a train timetable.

<table>
<thead>
<tr>
<th></th>
<th>Train 1</th>
<th>Train 2</th>
<th>Train 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanark</td>
<td>09 52</td>
<td>10 22</td>
<td>10 52</td>
</tr>
<tr>
<td>Carluke</td>
<td>10 02</td>
<td>10 32</td>
<td>11 02</td>
</tr>
<tr>
<td>Wishaw</td>
<td>10 08</td>
<td>10 38</td>
<td>11 08</td>
</tr>
<tr>
<td>Motherwell</td>
<td>10 20</td>
<td>10 50</td>
<td>11 20</td>
</tr>
<tr>
<td>Glasgow</td>
<td>10 55</td>
<td>11 20</td>
<td>11 55</td>
</tr>
</tbody>
</table>

(a) Amanda takes the 09 52 train from Lanark to Glasgow.
When will she arrive in Glasgow?

ANSWER

(b) Amanda’s friend Lewis boards a later train at Wishaw.
This train arrives in Glasgow at 11 55.
How long does his journey from Wishaw to Glasgow take?

WORKING

ANSWER minutes
5. The plan below shows some landmarks near Paul's house.
The church is at position (5,4).

(a) What is at position (2,7)?

ANSWER

(b) Write down the coordinates of the windmill.

ANSWER ( , )

(c) Paul’s aunt has a farm at position (1,4).
Mark a cross ( ★ ) on the diagram to show the position of the farm.

(d) Paul walks from his house to the church.
In which direction does Paul walk?

ANSWER
6. In a restaurant, tables and chairs are set out as shown below.

(a) Complete this table.

<table>
<thead>
<tr>
<th>Number of tables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of chairs</td>
<td>4</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Write down a rule for finding the number of chairs if you know the number of tables.
Here is Rachel Brown’s payslip.

<table>
<thead>
<tr>
<th>Payments</th>
<th>Basic pay</th>
<th>Overtime</th>
<th>Bonus</th>
<th>A</th>
<th>Gross Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£180.00</td>
<td>£28.00</td>
<td>£20.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deductions</td>
<td>National Insurance</td>
<td>Income Tax</td>
<td>Union Dues</td>
<td>B</td>
<td>Total Deductions</td>
</tr>
<tr>
<td></td>
<td>£14.50</td>
<td>£36.00</td>
<td>£2.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete Rachel’s payslip by filling in boxes A, B and C.

**WORKING**

---

Net Pay £
8. A double-glazing firm pays its employees a bonus each month based on their sales.

The table below shows how the bonus is calculated.

<table>
<thead>
<tr>
<th>Sales</th>
<th>Bonus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than £10 000</td>
<td>£0</td>
</tr>
<tr>
<td>From £10 000 to £20 000</td>
<td>6% of sales</td>
</tr>
<tr>
<td>More than £20 000</td>
<td>12% of sales</td>
</tr>
</tbody>
</table>

(a) One month John sells £5000 worth of double glazing.

What is his bonus?

**ANSWER** £

(b) The same month Martha sells £16 000 worth of double glazing.

Calculate her bonus.

**WORKING**

**ANSWER** £
9. Scott goes on a sponsored diet to raise money for charity. He starts the diet on 4 February and finishes on 22 April. He is weighed each week during this time and the results are shown on a line graph.

(a) What was Scott’s weight on 4 February?

**ANSWER** 74 kilograms

(b) On what date did Scott weigh 72.5 kilograms?

**ANSWER**
9. (continued)

(c) Scott is sponsored £30 for every kilogram of weight lost between 4 February and 22 April.

How much money did he raise for charity?

WORKING

ANSWER £
The marks of a group of pupils in their French test are shown in the frequency table below.

<table>
<thead>
<tr>
<th>Mark</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>6</td>
</tr>
<tr>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>18</td>
<td>3</td>
</tr>
</tbody>
</table>

Which mark is the mode?

**ANSWER**
11. **Atletico Leisure Centre**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Ticket Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatrim</td>
<td>£3·20</td>
</tr>
<tr>
<td>Swim</td>
<td>£4·65</td>
</tr>
<tr>
<td>Aerobics</td>
<td>£3·25</td>
</tr>
<tr>
<td>Gym</td>
<td>£4·30</td>
</tr>
<tr>
<td>Sauna</td>
<td>£4·15</td>
</tr>
</tbody>
</table>

(a) Ian buys a ticket for the gym.
    How much does this cost him?

**ANSWER** £

(b) Atletico Leisure Centre offers a special monthly ticket costing £25.
    This special ticket allows you to use the activities as often as you wish for one month.
    Janet buys a special monthly ticket.
    She goes to Aerobics 10 times in that month.
    How much does Janet save?

**WORKING**

**ANSWER** £

[2500/402] Page thirteen
12. The top of Eve's table is a rectangle, 126 centimetres long and 50 centimetres broad.

(a) Calculate the area of the top of the table.

WORKING

ANSWER square centimetres
(b) Eve decides to fit wooden strips onto the table top as shown below. Each strip measures 50 centimetres by 10.5 centimetres.

Calculate the number of wooden strips needed to cover the top of the table.

**WORKING**

**ANSWER** wooden strips 2
13. The formula below is used to find the expected height, in centimetres, of children between the ages of two and twelve years.

\[
\text{Expected Height} = 5 \times \text{Age in years} + 80
\]

What age is a child whose expected height is 100 centimetres?

WORKING

\[
100 = 5 \times \text{Age in years} + 80
\]

\[
\begin{align*}
100 - 80 &= 5 \times \text{Age in years} \\
20 &= 5 \times \text{Age in years} \\
\text{Age in years} &= 4
\end{align*}
\]

ANSWER 4 years old

Marks 3
14. The thermometer below shows the temperature in degrees Fahrenheit.

What temperature does the thermometer show?

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

2
15. When sheep are taken by a shepherd to a junction, half of the sheep take one path and half the other. 
12 sheep start at point P. 
The diagram below shows how many sheep then arrive in pens A, B and C.

24 sheep start at point R. 
Show clearly how they separate at each junction and how many arrive in pens S, T, U and V.
16. Ed makes a footstool. It is in the shape of a cuboid, 40 centimetres long, 30 centimetres broad and 35 centimetres high.

(a) Calculate the volume of Ed’s footstool.

WORKING

\[ \text{Volume} = \text{length} \times \text{breadth} \times \text{height} \]

\[ = 40 \times 30 \times 35 \]

\[ = 42000 \text{ cubic centimetres} \]

ANSWER: 42000 cubic centimetres

(b) Ed fills the footstool with foam and then puts a decorative cord around all the edges.

Calculate the total length of the decorative cord Ed needs to go around all the edges of the footstool.

WORKING

\[ \text{Total length} = 4 \times (30 + 40 + 35) \]

\[ = 4 \times 105 \]

\[ = 420 \text{ centimetres} \]

ANSWER: 420 centimetres