2500/401

NATIONAL QUALIFICATIONS 2003
THURSDAY, 8 MAY 9.00 AM – 9.20 AM
MATHEMATICS
STANDARD GRADE
Foundation Level
Paper 1
Non-calculator

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.

SCOTTISH QUALIFICATIONS AUTHORITY
1. Work out the answers to the following.

(a) $17.9 + 5.2$

WORKING

ANSWER

(b) $3.21 \times 7$

WORKING

ANSWER

(c) $58.4 + 10$

WORKING

ANSWER
2. Work out 20% of £340.

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

| ANSWER | £ |
|---------|

3. The programmes on television one evening are shown here.

<table>
<thead>
<tr>
<th>Time</th>
<th>Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:45</td>
<td>West Bay</td>
</tr>
<tr>
<td>7:20</td>
<td>Travel Show</td>
</tr>
<tr>
<td>8:00</td>
<td>Film: The Deep Part 1</td>
</tr>
<tr>
<td></td>
<td>(Part 2 after the News)</td>
</tr>
<tr>
<td>9:00</td>
<td>News</td>
</tr>
<tr>
<td>9:25</td>
<td>Film: The Deep Part 2</td>
</tr>
<tr>
<td>11:10</td>
<td>Clubland</td>
</tr>
</tbody>
</table>

How long does the film last **altogether**?

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

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

| 3 |
4. (a) What speed is shown on this speedometer?

(b) A train travels for 3 hours at the speed shown on the speedometer above. What distance does it travel?

\[
\begin{array}{|c|c|}
\hline
\text{ANSWER} & \text{miles per hour} \\
\hline
\end{array}
\]

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

\[
\begin{array}{|c|c|}
\hline
\text{ANSWER} & \_ \text{ miles} \\
\hline
\end{array}
\]
5. The table shows the temperatures in five cities at noon on 1st February.

<table>
<thead>
<tr>
<th>Paris</th>
<th>Madrid</th>
<th>Montreal</th>
<th>Moscow</th>
<th>New York</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 °C</td>
<td>9 °C</td>
<td>−6 °C</td>
<td>−2 °C</td>
<td>0 °C</td>
</tr>
</tbody>
</table>

(a) Which city had the lowest temperature?

**ANSWER**

(b) By 7pm the temperature in Moscow had dropped by 3 °C. What was the temperature in Moscow at 7pm?

**WORKING**

<table>
<thead>
<tr>
<th>Noon</th>
<th>−2 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>7pm</td>
<td>°C</td>
</tr>
</tbody>
</table>

**ANSWER**


**WORKING**

**ANSWER** £
7. This is a number cell.

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
</tbody>
</table>

- 1st number + 2nd number = 3rd number \(4 + 3 = 7\)
- 2nd number + 3rd number = 4th number \(3 + 7 = 10\)

(a) Complete this number cell.

\[ \begin{array}{c|c|c|c|}
7 & 11 & \hline
\end{array} \]

(b) Complete this number cell.

\[ \begin{array}{c|c|c|}
\hline & 13 & 21 \\
\hline
\end{array} \]

(c) Complete this number cell.

\[ \begin{array}{c|c|c|}
1 & \hline & 19 \\
\hline
\end{array} \]

YOU MAY USE THE BLANK NUMBER CELLS BELOW FOR WORKING IF YOU WISH.
8. (a) The Green family paid four electricity bills last year. The total amount paid was £336.

<table>
<thead>
<tr>
<th>Electricity Bills</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring bill</td>
<td>£68</td>
</tr>
<tr>
<td>Summer bill</td>
<td>£50</td>
</tr>
<tr>
<td>Autumn bill</td>
<td>£73</td>
</tr>
<tr>
<td>Winter bill</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>£336</td>
</tr>
</tbody>
</table>

Work out the amount paid for the winter bill.

WORKING

ANSWER £

(b) Work out the mean amount paid per bill.

WORKING

ANSWER £

[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

Scottish candidate number

Number of seat

1. You may 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. The wire of an acrobat's swing makes an angle of 73° with the bar above it.

SABRINI'S CIRCUS

Calculate the size of the shaded angle.

WORKING

ANSWER
2. Some people were asked which flavour of crisp was their favourite.
The table shows their answers.

<table>
<thead>
<tr>
<th>Favourite crisp flavour</th>
<th>Number of people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready Salted</td>
<td>12</td>
</tr>
<tr>
<td>Cheese &amp; Onion</td>
<td>9</td>
</tr>
<tr>
<td>Beef</td>
<td>2</td>
</tr>
<tr>
<td>Salt &amp; Vinegar</td>
<td>14</td>
</tr>
<tr>
<td>Chicken</td>
<td>5</td>
</tr>
</tbody>
</table>

Use the table to complete the bar graph.
3. Candle holders are made up from a top, link sections and a base.

(a) Complete this table.

<table>
<thead>
<tr>
<th>Number of link sections</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 candle holder (cm)</td>
<td>6</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WORKING

(b) Write down a rule for finding the height of a candle holder if you know the number of link sections.

RULE
4. A sports team is choosing a new strip.
The strip can have
   • a round neck or a V-neck
   • long sleeves or short sleeves
   • a plain body or a striped body.

The table below shows one possible combination.
Complete the table to show five other possible combinations.

<table>
<thead>
<tr>
<th>Neck</th>
<th>Sleeves</th>
<th>Body</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>short</td>
<td>striped</td>
</tr>
</tbody>
</table>

3
5. Draw an enlargement of this shape on the grid below. Make each of its sides twice as long.
6. This is a plan of a school hall.

(a) Measure the length of the hall on the plan.

\[
\text{ANSWER} \quad \text{centimetres}
\]

(b) The scale of the plan is 1 centimetre represents 5 metres.
Calculate the actual length of the hall.

\[
\text{WORKING}
\]

\[
\text{ANSWER} \quad \text{metres}
\]

(c) The plan of the hall is a rectangle.
Calculate the actual area of the hall.

\[
\text{WORKING}
\]

\[
\text{ANSWER} \quad \text{square metres}
\]
7. Sam and Jo are plumbers.  
The jobs they have to do in one day are shown below.

![Job Schedule Image]

Complete the table below to show when they should do each job.

<table>
<thead>
<tr>
<th></th>
<th>9am</th>
<th>10am</th>
<th>11am</th>
<th>Noon</th>
<th>1pm</th>
<th>2pm</th>
<th>3pm</th>
<th>4pm</th>
<th>5pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sam</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>←</td>
<td>JOB 3 →</td>
<td>Lunch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jo</td>
<td>←</td>
<td>JOB 3 →</td>
<td>Lunch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

YOU MAY USE THE TABLES BELOW FOR WORKING IF YOU WISH.

<table>
<thead>
<tr>
<th></th>
<th>9am</th>
<th>10am</th>
<th>11am</th>
<th>Noon</th>
<th>1pm</th>
<th>2pm</th>
<th>3pm</th>
<th>4pm</th>
<th>5pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sam</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>←</td>
<td>JOB 3 →</td>
<td>Lunch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jo</td>
<td>←</td>
<td>JOB 3 →</td>
<td>Lunch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>9am</th>
<th>10am</th>
<th>11am</th>
<th>Noon</th>
<th>1pm</th>
<th>2pm</th>
<th>3pm</th>
<th>4pm</th>
<th>5pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sam</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>←</td>
<td>JOB 3 →</td>
<td>Lunch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jo</td>
<td>←</td>
<td>JOB 3 →</td>
<td>Lunch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>9am</th>
<th>10am</th>
<th>11am</th>
<th>Noon</th>
<th>1pm</th>
<th>2pm</th>
<th>3pm</th>
<th>4pm</th>
<th>5pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sam</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>←</td>
<td>JOB 3 →</td>
<td>Lunch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jo</td>
<td>←</td>
<td>JOB 3 →</td>
<td>Lunch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8. Find the volume of this cuboid.

WORKING

ANSWER cubic centimetres 2
9. (a) These scales are balanced with six small parcels on one side and one large parcel on the other side.

Each small parcel weighs the same.

The large parcel weighs 1.8 kilograms.

Calculate the weight of one small parcel.

**Give your answer in grams.**

**WORKING**

**ANSWER**

grams

4
The scales in diagram 1 are balanced.
Use diagrams 1 and 2 to put parcels A, B and C in order of weight starting with the **heaviest**.
Give reasons for your answer.

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>Heaviest</th>
<th>Lightest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parcel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REASONS</th>
<th></th>
<th></th>
</tr>
</thead>
</table>


10. Louise has £394 in her bank account.

How much interest will she receive after 1 year if the interest rate is 7% per year?

WORKING

ANSWER £
11. The table shows the cost of using the internet.

<table>
<thead>
<tr>
<th>Daytime rate</th>
<th>3.5p per minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>(8 am–6 pm Mon–Fri)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cheap rate</th>
<th>1p per minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>(all other times)</td>
<td></td>
</tr>
</tbody>
</table>

(a) Jamie used the internet between 4.30 pm and 5.30 pm on Tuesday. How much did it cost him?

WORKING

ANSWER ₤

(b) **Internet Gold Card**

Unlimited use of the internet for just ₤14.99 per month

Jamie bought an Internet Gold Card. During February he used the internet for 30 **hours**, all at the cheap rate. How much did the Internet Gold Card save him?

WORKING

ANSWER

[2500/402] Page thirteen
12. Freshdent tubes usually contain 240 millilitres of toothpaste.

How much toothpaste is in a tube which has an extra \( \frac{1}{3} \) in it?

WORKING

\[
\text{Answer} \quad \text{millilitres} \quad 3
\]
13. This rule is used to work out the cost of hiring a car.

\[
\text{Cost} = £25 + (\text{number of days} \times £14.50)
\]

(a) Find the cost of hiring a car for 6 days.

WORKING

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

(b) Stuart has £300 to spend on car hire.

He hires a car for as many days as possible.

How many days is this?

WORKING

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

END OF QUESTION PAPER