2500/401

NATIONAL QUALIFICATIONS 2002

THURSDAY, 9 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.
1. Work out the answers to the following.

(a) $12.8 + 0.7$

WORKING

ANSWER

(b) $3.65 \times 100$

WORKING

ANSWER

(c) $\frac{1}{5}$ of 85

WORKING

ANSWER

[2500/401]
2. Find 25% of £484.

WORKING

ANSWER £

3. Kelly is running in a 5000 metres race.
She has run 3250 metres.
How far has she still to run?

WORKING

ANSWER metres
4. This video has a running time of 80 minutes.
Sanjeev begins watching the video at 7.45 pm.
At what time does the video finish?

WORKING

ANSWER pm 3
5.  
(a) Cartons of Fizz orange juice cost 29 pence each.  
Find the cost of 10 cartons.

WORKING

ANSWER  £  

(b) Fizz is also sold in special packs each containing 3 cartons.  
These special packs cost 79 pence each.  
Find the least amount you must pay for 10 cartons.

WORKING

ANSWER  £
6. Minstrel's Sports Club is raising funds. The graph shows the amount raised.

By the end of January £500 was raised.

(a) How much was raised by the end of February?

| ANSWER | £ |
6. (continued)

(b) How much was raised **during** February?

WORKING

**ANSWER** £

(c) During which month was most money raised?

**ANSWER**
7. The table shows a company’s profit each year.
The company’s profit increased between 1997 and 1998.
The profit increased by the same amount between 1998 and 1999.
Find the company’s profit in 1999.

<table>
<thead>
<tr>
<th>Year</th>
<th>Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>£2000</td>
</tr>
<tr>
<td>1998</td>
<td>£8700</td>
</tr>
<tr>
<td>1999</td>
<td></td>
</tr>
</tbody>
</table>

WORKING

ANSWER £

[END OF QUESTION PAPER]
1. Erin's birthday is 28th August.
   Daniel's birthday is one week later.
   What is the date of Daniel's birthday?

  WORKING

  ANSWER

2. These patterns are made from matchsticks.

Pattern 1  Pattern 2  Pattern 3

(a) Complete this table.

<table>
<thead>
<tr>
<th>Pattern 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>Number of matchsticks</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Write down a rule for finding the number of matchsticks if you know the pattern number.

RULE
3. During a sale a shop reduces its prices by 15%.
A washing machine usually costs £399.
How much would it cost in the sale?

WORKING

ANSWER £
4. Some students are asked about their part-time jobs.

The scattergraph shows how many hours they work and how much they earn each week.

(a) The arrow points to the dot which represents the number of hours Brian worked and how much he earned.

Write down how many hours Brian worked and his earnings.

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>Number of hours worked</th>
<th>Earnings (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Jade works 7\(\frac{1}{2}\) hours a week and is paid £3.20 per hour.

Mark a dot on the scattergraph to show how many hours Jade worked and her earnings.

WORKING
The table below shows some ways of scoring a total of 15 with three different dice.

<table>
<thead>
<tr>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>6’</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

6 + 6 + 3 = 15

Complete the table to show five other ways of scoring a total of 15 with the three dice.
6. This is a plan of a room.

(a) Find the lengths of the sides marked $a$ and $b$.

**WORKING**

**ANSWER**

\[
\begin{array}{c|c}
\text{a} &= & \text{metres} \\
\text{b} &= & \text{metres}
\end{array}
\]

(b) Find the perimeter of the room.

**WORKING**

**ANSWER**

metres
7. The pattern below is made with tiles like the one shown here.

Continue the pattern by adding three tiles to the diagram.

YOU MAY USE THE EXTRA DIAGRAMS ON THE OPPOSITE PAGE FOR WORKING IF YOU WISH.
8. This shelf is in a corner of a room.

The shelf is in the shape of a right angled triangle as shown.

Find the area of this triangle.

WORKING

[Blank space for working]

ANSWER square centimetres

3
9. The number of pupils in each class at Maybelle Primary School is listed below.

   24  25  27  29  30  30  31

(a) Write down the mode.

   ANSWER   pupils

(b) Find the mean number of pupils in each class.

   WORKING

   ANSWER   pupils

1

4
10. (a) A cube has length 7 centimetres.
Find the volume of the cube.

WORKING

ANSWER  | cubic centimetres  
---|---

(b) Peter has some other cubes.
Some have length 8 centimetres and some have length 10 centimetres.
He builds a stack with the 8 centimetre cubes and another stack with the 10 centimetre cubes.
He stops when both stacks are the same height.
How many cubes are in each stack?

WORKING

ANSWER  | 8 centimetre cubes  
---|---
| 10 centimetre cubes  

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11. Gary is making tea.
He needs 200 millilitres of water for each cup.
How many cups of tea can he make from a kettle which holds 1.8 litres of water?

WORKING

ANSWER cups

4
12. (a) The diagram below shows a radar screen at an airport.

The points P and Q show the positions of two aeroplanes.
From the airport, the bearing of P is 090°.
Write down the bearing of Q from the airport.

ANSWER
12. (continued)

(b) The diagram below shows a different radar screen at the airport. The lines are equally spaced around the screen.

The point R shows the position of another aeroplane. Find the bearing of R from the airport.

WORKING

ANSWER

3
13. A lorry is delivering bags of sand from a builder’s yard to a sports ground.

- The sports ground is 12 kilometres from the builder’s yard.
- The lorry can carry 30 bags at a time.

How many kilometres in total will the lorry have to travel to deliver 100 bags of sand and then return to the builder’s yard?

WORKING

<table>
<thead>
<tr>
<th>ANSWER</th>
<th>kilometres</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>