END OF PRIMARY BENCHMARK
2014

MATHEMATICS
WRITTEN PAPER

80 marks
1 hour 30 minutes
1. Work out:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $136 + 864 = \phantom{0}$</td>
<td>b. $2002 - \phantom{0000} = 99$</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. $12 \times 12 = \phantom{00}$</td>
<td>d. $200 \div 40 = \phantom{0}$</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Complete:

```
43 \rightarrow \times 10 \rightarrow + 0.5 \rightarrow \phantom{0} \rightarrow \div 10 \rightarrow 4305
```
3a. **Tick (✓) the correct name for each of the marked angles below.**

i)  
![Diagram](image1)

- acute angle [ ]
- right angle [ ]
- obtuse angle [ ]

ii)  
![Diagram](image2)

- acute angle [ ]
- right angle [ ]
- obtuse angle [ ]

b. **Work out** the size of angle a and angle b in the diagrams below.
Do not measure.

i)  
![Diagram](image3)

angle a = [ ]°

ii)  
![Diagram](image4)

angle b = [ ]°

4. Below there are four nets of shapes.
**Tick (✓) the nets which form a cube.**
There is more than one answer.

- Net A [ ]
- Net B [ ]
- Net C [ ]
- Net D [ ]
5a. Fill in correctly.

\[
\begin{align*}
60\% &= \frac{\_\_\_\_}{100} = \frac{\_\_\_\_}{10} = \frac{3}{\_\_} = \_\_ \\
100 & \quad 10 & \quad 3 & \quad \\
\end{align*}
\]

b. Shade 60\% of the grid below.

\[
\begin{array}{cccccccc}
& & & & & & & \\
& & & & & & & \\
& & & & & & & \\
& & & & & & & \\
& & & & & & & \\
& & & & & & & \\
& & & & & & & \\
\end{array}
\]

6. Look at the numbers below. Use each of these numbers once to fill in correctly.

\[
\begin{align*}
45 & \quad 53 & \quad 34 & \quad 32 & \quad 66 & \quad 72 \\
\end{align*}
\]

- is a common multiple of 9 and 8
- + = 100
- + - = 66
7. Use the calculation below to work out the missing numbers.

\[
2.3 \times 5 = 11.5
\]

a. \(11.5 \div 5 = \) 

b. \(23 \times 5 = \)

c. \(2.3 \times 50 = \)

d. \(0.23 \times 5 = \)

e. \(2.3 \times \) \[ ] \(= 13.8\)

8. The shapes below are made up of **white tiles** and **shaded tiles**.

![Shape 1](image1)
![Shape 2](image2)
![Shape 3](image3)
![Shape 4](image4)

a. Complete the following table.

<table>
<thead>
<tr>
<th>Shape number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of white tiles</td>
<td>8</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of shaded tiles</td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. Which **shape number** will have 48 **white tiles**? \(\) \[shape number_____\]
9a. You have these four cards.  

Use **two** of them to complete the statements below.

\[
\begin{array}{|c|}
\hline
1·01 \text{ m} \\
\hline
10·01 \text{ m} \\
\hline
1001 \text{ cm} \\
\hline
1001 \text{ m} \\
\hline
\end{array}
\]

i) 101 cm is equal to \underline{\hspace{2cm}}.

ii) \underline{\hspace{2cm}} divided by 100 is equal to 10·01 m.

b. **Three pencils** have the **same** length as the width of **four notebooks**.  
Each notebook is 12·6 cm wide.

i) Work out, **in cm**, the total length of the **three pencils**.

\underline{\hspace{2cm}} cm

ii) Work out, **in mm**, the length of **one pencil**.

\underline{\hspace{2cm}} mm
10. The following are the prices of items at a supermarket.

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>ham</td>
<td>€1·82 for 100 g</td>
<td></td>
</tr>
<tr>
<td>cheese</td>
<td>€1·64 for 100 g</td>
<td></td>
</tr>
<tr>
<td>olives</td>
<td>82 cent for 100 g</td>
<td></td>
</tr>
<tr>
<td>milk</td>
<td>47 cent each carton</td>
<td></td>
</tr>
</tbody>
</table>

a. Alex buys 200 g of ham and 150 g of cheese.
What is the **total cost** of the **ham** and **cheese** that Alex buys?

€___________

b. He also buys some olives for **€2·46**.
How many **grams** of **olives** does he buy?

__________ grams

c. Alex pays for the ham, cheese and olives with a **€10** note.
He then remembers that he needs to buy milk.
How many **cartons of milk** can he buy **with the change received**?

__________ cartons
11. There are 1250 students in a school.
   During the students’ council elections they vote as follows:

   • 10% vote for Tom
   • $\frac{2}{5}$ vote for Sue
   • 20% vote for Pete
   • the rest vote for Ann

a. How many votes does Sue get?

   __________ votes

b. How many votes does Sue get more than Tom?

   __________ votes

c. What percentage of all the votes does Ann get?

   __________ %

d. Who wins this election?
   Tick (√) the correct answer.
   [ ] Tom  [ ] Sue  [ ] Pete  [ ] Ann
12. Max sells burgers in a kiosk.
These are the burgers he sold last week from Tuesday to Sunday.

<table>
<thead>
<tr>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
</table>

Key:  = 6 burgers

a. How many burgers did he sell on Wednesday? 

b. On which day did he sell 15 burgers? 

c. How many more burgers did he sell on Friday than on Thursday? 

d. On Sunday, Max sold 9 burgers more than he did on Saturday.
   Complete the pictograph to show how many burgers he sold on Sunday.

e. Each burger costs €1.
   How much money did Max get from the burgers he sold last week?
13. **Five women** check their weight.

a. The table below shows their weight.

<table>
<thead>
<tr>
<th>Katie</th>
<th>Maria</th>
<th>Bernice</th>
<th>Grace</th>
<th>Emma</th>
</tr>
</thead>
<tbody>
<tr>
<td>75 kg</td>
<td>65 kg</td>
<td>72 kg</td>
<td>58 kg</td>
<td>70 kg</td>
</tr>
</tbody>
</table>

Work out the **average weight** of the **five women**.

b. Months later they check their weight again.

The **average weight** of the five women increases to **71 kg**.

<table>
<thead>
<tr>
<th>Katie</th>
<th>Maria</th>
<th>Bernice</th>
<th>Grace</th>
<th>Emma</th>
</tr>
</thead>
<tbody>
<tr>
<td>4·5 kg more</td>
<td>62 kg</td>
<td>76·8 kg</td>
<td>61·6 kg</td>
<td>?</td>
</tr>
</tbody>
</table>

i) What is **Katie’s new weight**?

   \[ \boxed{ \quad \text{kg} } \]

ii) Work out **Emma’s new weight**.

   \[ \quad \text{kg} \quad \text{g} \]
14. Look at these two clocks.

![Clock A and Clock B]

a. They should show the **same time**, but **Clock A is 5 minutes fast** and **Clock B is 10 minutes slow**.
   What is the **correct time**?
   Give your answer in **digital form**.

   _____ : _____

b) Jacob spends **6 hours** at school every day.
   What **fraction** is this of the **whole day**?
   Write your answer in its **simplest form**.

   

ii) Jacob **starts** his homework at **20 minutes to 4** in the **afternoon**.
   - He spends **half an hour** on Maths.
   - He stops for **10 minutes** for a snack and another **15 minutes** to call a friend.
   - Then he continues his homework for another **25 minutes**.

At what time does he **finish** his homework?
Give your answer in **24-hour clock time**.

   _____ : _____
15. Ana has a fish pond.

    The fish pond is 90 cm long and 90 cm wide.

a. What is the area of the fish pond?

\[ \text{Area} = 90 \text{ cm} \times 90 \text{ cm} \]

\[ \text{Area} = 8100 \text{ cm}^2 \]

b. Ana decides to put tiles around her fish pond. She places four square tiles and four rectangular tiles around the fish pond. The square tiles cost €4.25 each and the rectangular tiles cost €6.50 each.

i) Work out the total cost of the tiles.

\[ \text{Total cost} = (4 \times 4.25) + (4 \times 6.50) \]

\[ \text{Total cost} = 17 + 26 = 43 \text{ €} \]

ii) Ana’s friend thinks that it costs less to use square tiles all the way around the fish pond. Do you agree with Ana’s friend? Explain.
16. Six villages A, B, C, D, E and F are connected by bus routes.
The direction the bus takes is marked with an arrow.
Isaac wants to go from village A to village F by bus.
Isaac can take different routes.

a. How many different bus routes are there from village A to village F?

________ routes

b. The table below shows the distance for each direct route.

<table>
<thead>
<tr>
<th></th>
<th>A to B</th>
<th>A to D</th>
<th>A to E</th>
<th>A to F</th>
<th>B to C</th>
<th>C to D</th>
<th>C to F</th>
<th>D to F</th>
<th>E to D</th>
<th>E to F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.45 km</td>
<td>6.4 km</td>
<td>2.14 km</td>
<td>9.7 km</td>
<td>2.1 km</td>
<td>2.48 km</td>
<td>4.11 km</td>
<td>3.4 km</td>
<td>3.45 km</td>
<td>7.56 km</td>
</tr>
</tbody>
</table>

How long, in km, is the shortest route from village A to village F?

___________ km

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**END OF PAPER**

**Marking Scheme**

- **Mental Paper** Numbers
  - 1 - 20: 20 × 1 mark = 20 marks
- **Written Paper** Numbers
  - 1 - 4: 4 × 4 marks = 16 marks
  - 5 - 12: 8 × 5 marks = 40 marks
  - 13 - 16: 4 × 6 marks = 24 marks
  - **TOTAL**: 100 marks