Name: ________________________________ Class: _____________

Instructions to Candidates

- Answer all questions.
- This paper carries a total of 25 marks.
- Calculators and protractors are NOT allowed.
1. a) What is one fifth of €0.40? 

Ans: ___________

b) Fill in: 20 − 4 = 4 × (2 + [ ])

c) By looking at the following calculations, state which of them must be wrong.

(i) 53 × 44 = 2332  
(ii) 36 × 23 = 882  
(iii) 85 × 25 = 2125

Ans: ___________

d) Mark the acute angles.

(4 marks)

2. a) Express as a fraction and as a decimal.

\[
\frac{\text{Number of shaded triangles}}{\text{Whole number of small triangles}} = \frac{2}{5} = 0.4
\]

b) Circle the only set of numbers which has three equal values.

(i) \( \frac{2}{5} \), 40\%, 0.4
(ii) \( \frac{1}{4} \), 25\%, 0.14
(iii) \( \frac{3}{4} \), 34\%, 0.74
(iv) \( \frac{7}{10} \), 7\%, 0.7

(3 marks)

3. a) Maria has €15 to spend on peanuts. How many bags of peanuts can she buy?

Ans: _______ bags
b) Rhys has €50.
   He wants to buy a bird feeder and 10 bags of bird seed.
   How much more money does he need?

   Ans: €__________ more

(3 marks)

4. Complete the patterns.
   a) 8, 5, 2, −1, ____.
   b) €____, €2.05, €2.45, €2.85, €3.25.

(2 marks)

5. Fill in the number cards to make correct calculations.
   a) \[ -1 + \underline{\quad} = -3 \]
   b) \[ 4 - \underline{-4} = \underline{\quad} \]
   c) \[ (-2)^3 = \underline{\quad} \]

(3 marks)

6. a) What is the obtuse angle between the hands of the clock at exactly 4 o’clock?

   Ans: ___________°

b) Complete the logo commands to draw a rectangle with a perimeter of 200 turtle steps.

   PD REPEAT 2 [FD 40 RT 90 FD ____ RT 90]

(3 marks)
7. A teacher asked a group of girls in a school about their reading habits. He gathered the following information:

- 9 girls read 1 book or none per week.
- 5 girls read exactly 2 books per week.
- 6 girls read 3 books or more per week.

a) What fraction of the girls read at least 3 books per week?

Ans: __________

b) Express the above answer as a percentage.

Ans: __________

(2 marks)

8. a) A packet of cereal weighs 375 g. What is the weight of ten such packets, in kilograms?

Ans: __________ kg

b) Anna buys a 2 litre bottle of water. She pours 0.5 litres in a beaker and drinks 200 ml from the bottle. How much water is left in the bottle?

Ans: __________

c) During a School Sports Day, at a certain point Ben is 750 m away from the starting point while Mario is 1 km away. If Ben is half way in the race, what distance does Mario still have to run to finish the race?

Ans: __________

(5 marks)
1. a) Write thirty five thousand and seventy six in figures.

   __________________

   b) Fill in and then write as a power of ten:

   \[ 5^3 \times 2^3 = \boxed{10} \]

   (3 marks)

2. The shape is a quadrilateral. Tick (✓) the correct statements.

   a) It is a parallelogram. ✓
   b) It has line symmetry. ✓
   c) It is an irregular polygon. ✓
   d) Its opposite angles are equal. ✓
   e) Its diagonals are equal. ✓

   (2 marks)
3. This is a picture of Reno’s new car.

   a) Measure the length of the car in the picture, correct to the nearest mm.

   Ans: ________________ mm

   The real car length is 4.50 m.

   b) Work out the scale in its simplest form.

   Length of car in picture : Length of real car

   Ans: _____ : _____

(3 marks)

4. Fill in the spaces to complete the following number machines. Then write the rule.

   a) Input $(x)$ | Output $(y)$
      __________ | __________
      1          | 3
      2          | 6
      3          | 9
      4          | __________
      5          | 15

   Rule: $y = ________________$

   b) Input $(p)$ | Output $(q)$
      __________ | __________
      1          | 5
      2          | 8
      3          | 11
      4          | __________
      5          | 17

   Rule: $q = ________________$

(4 marks)
5. The following table shows the ages of 12 children at the playing field at noon last Sunday.

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
</tr>
</tbody>
</table>

a) Find the median age of the data.

b) Work out the mean age correct to 1 decimal place.

c) Complete the frequency table for the above data and then complete and label the pie chart.

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
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<tr>
<td>11</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
</tr>
</tbody>
</table>

(9 marks)
6. a) Raymond’s rectangular garden has **paving** on one side. The rest is grass.

![Diagram of the garden with paving and grass areas]

(i) What is the **perimeter** of the whole garden PQRS?

Ans: _______ m

(ii) What is the value of \( d \) if the tiles are squares of side 50 cm? Give answer in metres.

Ans: _______ m

(iii) Calculate the **area** of VQRW.

Ans: _______ m\(^2\)

b) Raymond digs a pond 2 m long, 1.5 m wide and 1 m deep. What is the volume of the water if the pond is filled to the top? (The pond is in the form of a cuboid.)

Ans: _______ m\(^3\)

(8 marks)
7.

(i) Write the coordinates of P ( , ) and Q ( , ).

(ii) Plot point R (−2, 3) and join PQR to form a triangle.

(iii) Reflect triangle PQR in the x axis. Label it P'Q'R'.

(iv) Translate triangle PQR 5 right and 2 down. Label it P"Q"R".

b) Underline the correct equation below:
Points A, B, C and D on the grid shown lie on the line with equation:

\[ y = -3 \quad y = 3x \quad x = -3 \quad y = x - 3 \] (8 marks)

8.

a) Darren chooses a marble from bag A and another marble from bag B without looking.

(i) The probability of picking a blue marble from bag A is __________

(ii) The probability of picking a blue marble from bag B is __________

(iii) Is Darren more likely to pick a blue marble from bag A or bag B?

Ans: Bag________
b) (i) Evaluate: \(13^2 = \)

(ii) Write 3 square numbers which round to 200 correct to the nearest 100.

\[ \boxed{100} \approx 200 \quad \boxed{150} \approx 200 \quad \boxed{200} \approx 200 \]

Ans: _______, _______, ______

(6 marks)

9. Leo and his sister watched an action movie.

- a) The movie was 2 hours and 15 minutes long. 
   Mark on the time line, the time when the film started.

- b) After the film, they played football in the backyard.
   When they came in from playing football, it was 1.05 pm.
   Write this time using 24-hour clock. ________________

- c) How long did they play football?

   Ans: ______ h_______min

(3 marks)
10. a) According to this fuel gauge, about how many litres of fuel are in the tank?
   Ans: _______litres

   ![Fuel Gauge]

b)  

   **Recipe**
   
   10 strawberries  
   ½ litre orange juice  
   250 ml yogurt  
   1 banana  
   Makes 2 smoothies

   (i) Express in its simplest form.
   orange juice: yogurt
   
   Ans: _____ : _____

   Silvia uses the recipe to make smoothies. She uses 1 litre of yogurt.

   (ii) How many strawberries does she need?
   Ans: _______strawberries

   Aaron uses the same recipe. He wants to make 5 smoothies.
   He has 1 litre of orange juice.

   (iii) How many more millilitres of orange juice does he need?
   
   Ans: _______ more millilitres of orange juice

   (6 marks)

11. a) If \( x = 4 \) and \( y = 10 \) find the value of:

   \[
   \frac{2(x + 1)}{y} =
   \]

   Ans: ___________
b) The value of each $t$ in the diagram is $21^\circ$. Work out the value of $s$.

\begin{center}
\begin{tikzpicture}
\draw (0,0) -- (1,0) -- (0.5,0.866) -- (0,0);
\draw (0,0) -- (1,0) -- (0.5,-0.866) -- (0,0);
\draw (0,0) circle (0.5);
\node at (0.5,0.866) [above right] {$t$};
\node at (0.5,-0.866) [below right] {$t$};
\node at (0.5,0) [above] {$s$};
\end{tikzpicture}
\end{center}

Ans: $s = ____^\circ$

(4 marks)

12. Luke had 14 points and lost $x$ points during a game.

a) Write this as an expression in $x$.

_______________________________

Jennifer started with 8 points and won $x$ points.

b) Write this as an expression in $x$.

_______________________________

They noticed that then they each had the same number of points.

c) Form an equation in $x$ and solve it.

\begin{center}
\begin{tikzpicture}
\draw (0,0) -- (1,0) -- (0.5,0.866) -- (0,0);
\draw (0,0) -- (1,0) -- (0.5,-0.866) -- (0,0);
\draw (0,0) circle (0.5);
\node at (0.5,0.866) [above right] {Luke};
\node at (0.5,-0.866) [below right] {Jennifer};
\node at (0.5,0) [above] {14};
\node at (0.5,0) [below] {8};
\end{tikzpicture}
\end{center}

Ans: $x = ______$

(5 marks)
13. a) Find

(i) the value of the exterior angle $z$

\[ \text{Ans: } z = \ldots \, ^\circ \]

(ii) the value of $(x + y)$

\[ \text{Ans: } (x + y) = \ldots \, ^\circ \]

(iii) What can you deduce from the above answers?

________________________________________________________________________

b) Find the value of $p$, $q$ and $r$, giving reasons.

\[ \text{Ans: } p = \ldots ^\circ \, (\ldots) \]

\[ \text{Ans: } q = \ldots ^\circ \, (\ldots) \]

\[ \text{Ans: } r = \ldots ^\circ \, (\ldots) \]

*Space for working if required.*

*(9 marks)*
14. a) Use ruler and compasses **only** to make an accurately, labelled drawing of the triangle shown, starting from the given line below.

```
C

6.5 cm

60°

A

A

8 cm

B
```

b) Measure  

(i) angle B correct to the **nearest degree**

Angle B = _______

(ii) side BC correct to the **nearest mm**.

side BC = _______

(5 marks)