**DO NOT WRITE ABOVE THIS LINE**

Name: ___________________________  Class: ____________

**Instructions to Candidates**

- Answer all questions.
- This paper carries a total of 25 marks.
- Calculators and protractors are NOT allowed.
1. A chocolate bar costs €1.45 and a cake costs 55cent. What change does Marvic get from €10 if she buys 4 chocolate bars and 4 cakes?

Ans: ______________

(2 marks)

2. The temperature in a fridge is 4°C and that in a freezer is −18°C. How many degrees colder is the freezer?

Ans: ______________ °C

(1 mark)

3. Look at the diagrams and tick (√) the correct equations:

(i) \[ a = c \] ❑
(ii) \[ a = q \] ❑
(iii) \[ s = d \] ❑
(iv) \[ x = z \] ❑

(4 marks)
4. Work out:

a) How many hundreds are there in one million?

__________________ hundreds

b) Anna lives 1.24 km away from school. What distance does she walk altogether to and from school during a normal school week?

_____ km

c) \[ \square \square \% \text{ of } 200 = 100 \]

d) Fill in with $<$ or $>$:

\[ \left( \frac{1}{2} \right)^2 \square \square 1 \]

\[ \frac{1}{2} \]

e) The arrow at A is pointing at:

A

5 cm

4 cm

_____ cm

(5 marks)

5. What number is 23 less than $23 \times 91$?

Ans: ______________

(1 mark)
6. One morning Samuel decides to cover the whole school running track.
   He first runs \( \frac{1}{8} \) of the track and then walks \( \frac{1}{4} \) of it. He does this twice.

   a) What fraction of the whole track has he covered in all?

   Ans: ______________

   b) The track is \( \frac{1}{2} \) km long. How far is he from the finish line?

   Ans: ______________m

   c) Can he repeat the run and walk action once more so as to cover the track exactly once? Explain.

   (5 marks)

7. How many cubes of side 1 cm fit in a cube of side 1 m?

   Ans: ____________ cubes

   (2 marks)
8. Evaluate:
   a) \(4 + 0.4 + 0.004\)
      \[\text{Ans: } \phantom{0}\] 

   b) \(7 \times 10^2 + 1\)
      \[\text{Ans: } \phantom{0}\] 

   c) \(\sqrt{\frac{4}{9}}\)
      \[\text{Ans: } \phantom{0}\] 

   d) \(-3 \times (-2)\)
      \[\text{Ans: } \phantom{0}\]

(5 marks)

END OF NON CALCULATOR PAPER
1. a) Fill in the missing terms in the following sequences.

(i) 5, 9, 13, 17, ____.

(ii) 2, 3, 5, 8, 12, ____, ____.

(iii) \( \frac{1}{23}, \quad \frac{4}{25}, \quad \frac{8}{26}, \quad \frac{16}{27}, \quad ____ \).

b) Find the mystery number when:

- it is smaller than 50,
- it is a square number,
- 4 is one of its factors,
- it is a multiple of 3.

Ans: The mystery number is ________

(8 marks)
2. a) Last year Joel went for a holiday from 30 July till 1 September. How long was his holiday in days, if both days are included?

Ans: ___________ days

b) (i) Bus K leaves the terminus every 20 minutes starting from 07:00. Janice arrives at the terminus at 07:25. How long will she wait for the next Bus K, if it leaves on time?

Ans: ________ minutes

(ii) How many of Bus K leave the terminus by 9:00 am?

Ans: __________ buses

(6 marks)

3. Lora and Daniel are 12 years old and 9 years old respectively.

a) (i) Write the ratio of Lora’s age to Daniel’s age in its simplest form.

Lora : Daniel

______ : ______

(ii) When they visited him, Uncle Paul gave them money in the ratio of their ages. Lora received €20. How much did Daniel receive?

Ans: €________

b) The height of a soft toy is 3 cm in a catalogue picture. What is its actual height if a scale of 1:10 is used?

Ans: __________

(4 marks)
4. a) Romina obtained the following marks last year:

(i) Work out her **mean** mark.

   Ans: ______ Mean mark

Her friend James obtained the following marks:

(ii) He said, "My **median** mark is higher." **Show** if he is **correct** or **not**.

b) Mr Vella asks a group of boys which is their favourite music. The bar chart shows the result.

(i) How many boys took part in this survey?

   Ans: ______

(ii) What is the **probability** that jazz is the favourite?

   Ans: ______

(iii) Express the answer to (ii) above as a **percentage**.

   Ans: ______ %

(7 marks)
5.

(a) (i) Shape E is a parallelogram because it has___________________________.
(ii) Draw the diagonals of parallelogram E.
(iii) The diagonals meet at the point with coordinates (___ , ___).

(b) (i) Describe triangle ABD choosing 2 types from below:
Equilateral, scalene, isosceles, acute angled, right-angled.
Ans: ____________ and ____________ triangle.
(ii) The base of triangle ABD is 7 units long. What is its height?
Ans: _____ units
(iii) Calculate the area of triangle ABD.
Ans: _____ square units

(iv) Fill in the spaces to write the coordinates of 4 points on side AB.
(The first one is done for you.)
(-6, -5) (___, -4) (___, 0) (___, ___)

(v) Write the equation of line AB.
Ans: ___ = ______

(vi) Plot a fourth point C to change the triangle into the rectangle ABCD.
c) Complete the Logo commands to trace rectangle ABCD. (Turtle is positioned at start and end.)

\[
\text{PD REPEAT 2 [FD ___ RT 90 FD 7 ___ 90]} \]

(15 marks)

6. a) Which 3 cards simplify to 4n?

\[
\begin{align*}
\text{P:} & \quad 5n - 1 \\
\text{Q:} & \quad n + n + n + n \\
\text{R:} & \quad n \times 4 \\
\text{S:} & \quad n \times n \times n \times n \\
\text{T:} & \quad n + 3n \\
\text{U:} & \quad 3 + n
\end{align*}
\]

Ans: _______ _______ _______

b) (i) Each cube weighs \( m \) grams. Write an equation to represent the scales.

Ans: ______________________________________

(ii) Solve the equation to find the weight of one cube.

Ans: \( m = \underline{\hspace{2cm}} \) g

c) Simplify: \( 3(x + 4y) - 5y \)

Ans: \underline{\hspace{2cm}}

(8 marks)
7.

a) Fill in a rule for the number machine shown above.
Now complete the rule using letters, taking \( n \) as input and \( T \) as output.

\[
T = \underline{} \underline{} \underline{} \underline{} \underline{} \underline{} \underline{} \underline{} \underline{} \underline{}
\]

b)

(i) Ian takes a summer job. He is paid €5 for every hour he works plus €15 per week. Complete the number machine to show Ian’s weekly pay, choosing from:

\[
\begin{array}{cccc}
\times 15 & + 15 & \times 5 & + 5 & + 20
\end{array}
\]

Number of hours worked per week \( \rightarrow \) \( \underline{} \) \( \rightarrow \) \( \underline{} \) \( \rightarrow \) Pay (€)

(ii) Ian worked a total of \( \textbf{25 hours} \) last week. How much did he earn in all?

\[
\text{Ans: € } \underline{} \underline{}
\]

(iii) This week he aims to earn €150. How many hours must he work?

\[
\text{Ans: } \underline{} \underline{} \text{ hours}
\]
8. Give **reasons** for your answer in every part of this question.

![Diagram](Diagram not drawn to scale)

a) Work out the size of the angle marked \( a \).

**Ans:** \( a = \) \( \_\_\_\_\_\_ \) \(^\circ\)  reason: ________________________________

b) Work out the size of the angle marked \( b \).

**Ans:** \( b = \) \( \_\_\_\_\_\_ \) \(^\circ\)  reason: ________________________________

c) What can you say about straight lines QR and ST? Give a reason for your answer.

________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________

(5 marks)
9. a) On the given line below, construct triangle ABC such that AB = 8 cm, BC = 8 cm and angle B = 100°. Label your diagram.

b) On your diagram mark point O, the **midpoint** of AB.

c) With **centre** O and **radius** 4 cm, draw a **circle** to cut AC at X.

Label point X on your diagram.

d) Measure and write down the length of BX correct to the nearest mm.

**Ans:** BX = _____

(8 marks)
10. a) Which of these are nets of a closed cube?

Ans: ____________

b) Fill in the 4 spaces in the table:

<table>
<thead>
<tr>
<th>Shape</th>
<th>No. of faces</th>
<th>No. of vertices</th>
<th>No. of edges</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(7 marks)

c) (i) Work out the volume of the hole in this plastic brick.

Ans: (i) ________ cm$^3$

(ii) Find the volume of plastic in the brick.

Ans: (ii) ________ cm$^3$

(7 marks)