INSTRUCTIONS TO CANDIDATES

• Answer all questions.

• This paper carries a total of 20 marks.

• Calculators and protractors are NOT ALLOWED.
<table>
<thead>
<tr>
<th>No.</th>
<th>QUESTION</th>
<th>SPACE FOR WORKING (IF REQUIRED)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Change 23.25 km into metres.</td>
<td>Answer: ___________ m</td>
</tr>
<tr>
<td>2.</td>
<td>There are 200 children in a class. 25% of the children are boys. How many of the children are girls?</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>3.</td>
<td>The value of $25 \times 42$ is</td>
<td>A) 1000  B) 10250  C) 1050  D) 2250</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Answer: __________</td>
</tr>
<tr>
<td>4.</td>
<td>Which of these numbers is a prime number?</td>
<td>A) 75  B) 211  C) 1221  D) 63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Answer: __________</td>
</tr>
<tr>
<td>5.</td>
<td>Find the size of the angle marked $x$.</td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Answer: _______ °</td>
</tr>
<tr>
<td>6.</td>
<td>Write down the output of this function (number) machine in the empty box.</td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
<tr>
<td>7.</td>
<td>Simplify: $9x - y + 6y - x$</td>
<td>Answer: _______________</td>
</tr>
</tbody>
</table>
8. Simplify: \( \frac{1}{4} \) of \( \frac{2}{3} \)

Answer: ________________

9. The shape is a regular hexagon. What is its perimeter?

\[ 8 \text{ cm} \]

Answer: ________ cm

10. Write down the square number that is between 60 and 80.

Answer: ________

11. Solve \( 5x + 3 = 13 \).

Answer: \( x = _____ \)

12. John selects a letter at random from the word IMPOSSIBLE. The probability that he selects the letter I is

\[ (A) \frac{2}{5} \quad (B) \frac{1}{4} \quad (C) \frac{1}{5} \quad (D) \frac{1}{2} \]

Answer: __________

13. I buy a game for €12.25. What change will I get if I pay with a €20 note?

Answer: €_________

14. Draw the line of symmetry of the given shape.

\[ \text{[Diagram]} \]

15. The turtle starts from the position shown. Sketch the figure drawn by the turtle for this set of LOGO commands:

\[ \text{PD FD 100 RT 90 FD 50} \]
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16.</td>
<td>The gradient of the line $y = 2 - 5x$ is</td>
</tr>
<tr>
<td></td>
<td>(A) 2 (B) 5 (C) −5 (D) −2</td>
</tr>
<tr>
<td></td>
<td>Answer: _________</td>
</tr>
<tr>
<td>17.</td>
<td>What is the area of the triangle?</td>
</tr>
<tr>
<td></td>
<td>(Each square is 1 cm by 1 cm.)</td>
</tr>
<tr>
<td></td>
<td><img src="image_url" alt="Triangle Diagram" /></td>
</tr>
<tr>
<td></td>
<td>Answer: _________ cm²</td>
</tr>
<tr>
<td>18.</td>
<td>What percentage is shaded?</td>
</tr>
<tr>
<td></td>
<td><img src="image_url" alt="Shaded Diagram" /></td>
</tr>
<tr>
<td></td>
<td>Answer: _________%</td>
</tr>
<tr>
<td>19.</td>
<td>The perimeter of the shape shown below is 40 cm. What is the value of $x$?</td>
</tr>
<tr>
<td></td>
<td><img src="image_url" alt="Shape Diagram" /></td>
</tr>
<tr>
<td></td>
<td>Answer: _________</td>
</tr>
<tr>
<td>20.</td>
<td>Work out the median of the numbers shown below.</td>
</tr>
<tr>
<td></td>
<td>15 25 6 71</td>
</tr>
<tr>
<td></td>
<td>Answer: _________</td>
</tr>
</tbody>
</table>
1. (a) Write the following numbers correct to one decimal place:
   (i) 345.252 Answer: _____________
   (ii) 415.327 Answer: _____________
(b) Write the following numbers correct to the nearest 10:
   (i) 2548 Answer: _____________
   (ii) 11521 Answer: _____________

2. (a) Work out
   (i) $5.3 \times 10^3$ Answer: _____________
   (ii) $155.5 \div 10^3$ Answer: _____________
(b) Simplify:
   $8y^7 \times y^{-2}$ Answer: _____________

CALCULATORS ARE ALLOWED BUT ALL NECESSARY WORKING MUST BE SHOWN.
ANSWER ALL QUESTIONS.
3. Solve the equations:
   (a) \(5x + 8 = x\)

   Answer: __________

   (b) \(6x = x + 10\)

   Answer: __________

   [6 marks]

4. Calculate the values of \(x, y\) and \(z\).

   \[x = __________ \quad \circ\]
   \[y = __________ \quad \circ\]
   \[z = __________ \quad \circ\]

   [4 marks]
5. Given that \( p = 3q - 2b \)

(a) Calculate the value of \( p \) when \( q = 1, b = 2 \).

Answer: _______

(b) Calculate the value of \( p \) when \( q = 2, b = -1 \).

Answer: _______

[4 marks]

6. (a) An aeroplane can carry 200 passengers when full. How many passengers is the aeroplane carrying when it is \( \frac{1}{4} \) full?

Answer: ______________

(b) An umbrella costs €2.80. How much do 30 umbrellas cost?

Answer: ______________

[4 marks]

7. The shape shown consists of five circles each of radius 4 cm.

![Diagram of five circles with centers labeled A, B, C, D, E]

(a) Work out the length of the circumference of one circle, giving your answer correct to two decimal places \( (C = 2\pi r) \)

Answer: _______

(b) A, B, C, D and E are the centres of the circles. What is the perimeter of the shape ACDE?

Answer: _______

[4 marks]
8. (a) Work out 20% of 3 km. (Give your answer in metres.)

Answer: _______________

(b) Change 2.45 kg into grams.

Answer: _______________

(c) Express 30% as a fraction in its simplest form.

Answer: _______________

[6 marks]

9. (a) 15.01  15.10  10.05  10.50

(i) ___________ is the largest.

(ii) ___________ is the smallest.

(b) Work out the area of the parallelogram correct to two decimal places:

Answer: ___________

(c) Which of the shapes shown below are prisms?  
Tick the correct answers in the boxes provided.

Answer: ___________
10. (a) A box contains 10 red counters and 5 blue counters. One counter is picked at random. Write down the probability of picking a blue counter.

Answer: __________

(b) A **fair** coin is tossed 150 times. Estimate the number of times the coin shows a Head.

Answer: __________

[4 marks]

11. Jonathan draws the diagram below using LOGO.

∠ABC and ∠BCD are both **right angles**, and all the lines are equal.

(a) Complete the LOGO program which draws the shape.

```
PD
FD 100
RT ______
FD ______
____  90
FD 100
```

(b) Write down the perimeter of the shape drawn.

Answer: __________

[5 marks]
12. (a) Complete the following function (number) machines.

\[
\begin{array}{c}
\text{Input } x \\
1 \rightarrow \times 3 \rightarrow -1 \\
\end{array}
\]

\[
\begin{array}{c}
\text{Output } y \\
\end{array}
\]

(b) Use your results in part (a) to complete the following pairs of coordinates:

\((1, ___), (2, ___)\)

(c) Plot these points on the graph below and use your ruler to draw a line passing through these points and crossing line P.

(d) Use your graph to find the values of \(x\) and \(y\) where the line meets line P.

Answer: \(x = \______, y = \______\).

[8 marks]
The bar chart shows the number of students in six different schools.

(a) Use the bar chart to complete the following table:

<table>
<thead>
<tr>
<th>School</th>
<th>St. Vitus</th>
<th>St. Mark</th>
<th>Sir Adrian Grech</th>
<th>St. Anne</th>
<th>Lady Hilary</th>
<th>Lord Kerry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>300</td>
<td>400</td>
<td></td>
<td></td>
<td></td>
<td>500</td>
</tr>
</tbody>
</table>

(b) What is the total number of students in all six schools?

Answer: _________

(c) Find the total number of students in Lord Kerry’s school as a fraction of the total. Give your answer correct to two decimal places.

Answer: _________

[8 marks]
14. The walls of a bathroom are covered with 1500 tiles. There are three types of tiles: white tiles, tiles with a flower design, and tiles with a butterfly design.

(a) Complete the table below.

<table>
<thead>
<tr>
<th>Amount used</th>
<th>Cost per tile</th>
</tr>
</thead>
<tbody>
<tr>
<td>White tiles</td>
<td>€0.50</td>
</tr>
<tr>
<td>Flower design</td>
<td>€2.50</td>
</tr>
<tr>
<td>Butterfly design</td>
<td>€3.00</td>
</tr>
</tbody>
</table>

(b) How many white tiles are used?

Answer: _________

(c) How many tiles with a flower design are used?

Answer: _________

(d) How many tiles with a butterfly design are used?

Answer: ________

(e) Find the total cost of the tiles.

Answer: ________

[12 marks]