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>
</table>
| 1.  | One of these numbers is a prime number. Which one is it?  
A) 2065  
B) 3034  
C) 2727  
D) 37  
Answer: _________ | |
| 2.  | What is the area of the triangle?  
(Each square is 1 cm by 1 cm.)  
Answer: _________ cm² | ![Triangle Diagram] |
| 3.  | Write down the output of this number machine in the empty box.  
[Diagram of number machine]  
\[
\begin{array}{c|c|c|c|c}
\text{Input} & +4 & +2 & \text{Output} \\
24 & & & \\
\end{array}
\]  |
| 4.  | Solve:  
\[2x + 5 = 15\]  
Answer: _________ | |
| 5.  | Work out the mean of the following numbers:  
12 12 12 22 12  
Answer: ________________ | |
| 6.  | Fill in the box:  
\[0.4 = \frac{\text{____}}{5}\]  |
| 7.  | Fill in the missing number:  
10 15 ____ 25 30  |
| 8.  | If \(y = 5x + 2\), find \(y\) when \(x = 3\).  
\(y = \_______\)  |
9. Each cube has side 2 cm. What is the volume of the shape?

\[
\text{Answer: } _________ \text{ cm}^3
\]

10. I have 6 gold and 3 silver rings in my pocket. I pick one at random. What is the probability that I pick a gold ring?

\[
\text{Answer: } _________
\]

11. Translate the shape shown by 6 units to the left and 4 units up.

12. Find the size of \( x \):

\[
\text{Answer: } _________
\]

13. The equation

\[
y = x + 4
\]

represents the line

A) XY  B) PQ  C) RS

\[
\text{Answer: } _________
\]

14. Work out

\[
2^3 - 4
\]

\[
\text{Answer: } _________
\]
15. Simplify:

\[2p + q - p + 3q = \] _______________

16. A school lies South East from the hospital (H).

The school is at _______.

*Choose from A, B, C and D.*

17. Work out AD if the perimeter of ABCD is 47 cm.

Answer: ________ cm

18. Expand

\[2(21 - 3x) = \] ______________

19. The table below shows the amount of rainfall in centimetres:

<table>
<thead>
<tr>
<th></th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

Complete the bar graph.

20. The turtle starts from the position shown.

Sketch the figure drawn by the turtle for this set of LOGO commands:

PD FD 100 LT 90 FD 50 LT 90 FD 100
1. (a) Work out the following:

\[ 736 - 219 + 123 = \] ________________

(b) Two of the following numbers are square numbers. Which are they?

\[ 27 \quad 36 \quad 15 \quad 64 \quad 243 \]

The numbers are _________ and __________.

(3 marks)

2. (a) Simplify the ratios

(i) 32 : 8

Answer: ________________

(ii) 125 : 65

Answer: ________________

(b) Write down the number 52,300 in words.

____________________________________

(4 marks)
3. (a) Which one of these numbers is greater than \( \frac{1}{5} \)?

\[
0.15 \quad \frac{1}{3} \quad \frac{1}{7} \quad 0.1
\]

Answer: _________

(b) Write \( 7.56 \times 10^3 \) as an ordinary number. _________

(c) One of these dates is not correct. Which one is it?

28 February   31 April   30 March   31 July

Answer: __________________

(d) What is 25% of 116?

Answer: __________

(4 marks)

4. (a) Work out the volume of the cuboid.

Answer: __________ cm\(^3\)

(b) Below is the net of the cuboid. Fill in the blanks.

\[
\begin{array}{c}
\text{x cm} \\
\hline
10.2 \text{ cm} \\
\hline
13.3 \text{ cm} \\
\hline
6 \text{ cm} \\
\hline
\end{array}
\]

\[
\begin{array}{c}
\text{y cm} \\
\hline
10.2 \text{ cm} \\
\hline
13.3 \text{ cm} \\
\hline
6 \text{ cm} \\
\hline
\end{array}
\]

\( x = \) _______ \quad \( y = \) _______

(c) Work out the area of the rectangle marked A.
Give your answer correct to one decimal place.

Answer: __________ cm\(^2\)

(6 marks)
5. Use the map drawn below to answer the questions. \( N \) denotes the North direction.

Choose your answers from the eight main compass directions N, S, W, E, NW, NE, SW and SE.

(a) The church lies ________ of the school.
(b) John’s house lies ________ of the church.
(c) The greengrocer lies ________ of the church.
(d) Choose the angle SCJ from the values given below.

\[
\begin{align*}
45^\circ & \quad 135^\circ & \quad 90^\circ & \quad 60^\circ \\
\end{align*}
\]

Answer: ________°  

(4 marks)

6. (a) Solve the equations:

(i) \( 5x + 6 = 26 \)

Answer: __________

(ii) \( 4x - 1 = 11 \)

Answer: __________

(b) Expand \( 2(3 - x + 2y) \)

Answer: __________  

(6 marks)
7. (a) Complete the following sequence:

\[
3 \quad 12 \quad 21 \quad ____ \quad 39 \quad ____
\]

(b) I have fifteen 5c coins, twenty 10c coins and five 50c coins in my pocket. How much money do I have altogether?

Answer: €__________

(5 marks)

8. (a) A cinema ticket costs €6.40.

(i) I buy two cinema tickets. What change will I get from €15?

Answer: €_______

(ii) How many cinema tickets can I buy with €20?

Answer: ______

(b) In the LOGO shape shown AB = CD = 50 turtle steps and BC = 100 turtle steps. Complete the program to draw the shape.

\[
\begin{align*}
\text{PD} \\
\text{FD} & \text{50} \\
& \text{____ 90} \\
\text{FD} & \text{_____} \\
\text{LT} & \text{_____} \\
\text{FD} & \text{_____}
\end{align*}
\]

(7 marks)
9. (a) An aeroplane can carry 160 passengers when full. How many passengers is the aeroplane carrying when it is \( \frac{3}{4} \) full?

Answer: ____________

(b) An umbrella costs €5.20. How much do 20 umbrellas cost?

Answer: €____________

(c) (i) Express 3915.6 to the nearest ten: ____________.

(ii) Work out: \( 2(-145 - 55) = \) ____________.

(6 marks)

10. In a box there are 9 red, 6 blue and 3 yellow counters. I pick a counter at random. Answer the following questions, giving each answer in its simplest form.

(a) What is the probability of picking a red counter?

Answer: _____

(b) What is the probability of picking a blue counter?

Answer: _____

(c) What is the probability of picking a yellow counter?

Answer: _____

I remove the yellow counters.

(d) What is the probability of picking a red counter?

Answer: _____

(4 marks)
11. (a) The diagram shows the tiles on the floor of a yard.

![Diagram showing a grid of tiles with three tiles marked with black circles at the top and bottom of the grid.] 

(i) Make the pattern symmetrical about the lines AB and XY by marking three tiles with a black circle.

(ii) Is there another line of symmetry?
    Write YES or NO.
    Answer: _______

(b)

(i) Draw shape 4.

(ii) Shape 5 will have _______ squares.

(iii) Choose the correct rule for the number of correct squares in shape $n$.

   (A) $n + 3$  (B) $6 - 2n$  (C) $2n - 1$  (D) $3n + 1$

   Answer: _________

(7 marks)
12. The manager of a hotel has collected the following data on the nationality of the guests in his hotel:

<table>
<thead>
<tr>
<th>Nationality</th>
<th>British</th>
<th>Italians</th>
<th>French</th>
<th>Germans</th>
<th>Belgians</th>
<th>Polish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Guests</td>
<td>110</td>
<td>55</td>
<td>45</td>
<td>70</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

(a) Use the table to complete the bar chart.

(b) What is the total number of guests in the hotel?

Answer: __________

(c) A guest is chosen at random. What is the probability that the guest is British?

Express the probability in its simplest form.

Answer: __________

(d) What is the ratio of Italians to Germans?

Express the ratio in its simplest form.

Answer: ______ : _____

(9 marks)
13. (a) Mark the points \((-5, 4)\) and \((4, -5)\) on the grid.

(b) Draw the line passing through these two points.

(c) Use your graph to complete the following pairs of coordinates:

\((-3, \underline{\quad})\)

\((\underline{\quad}, 3)\)

(6 marks)
14. (a) (i) A is translated by moving 6 units to the right and 4 units down. Draw the shape and label it B.

(ii) A is translated to C by moving

_____ units to the right and _____ units up.

(b) There are seven drawers. The number of pencils in each drawer is as follows:

12  5  2  13  30  10  12

(i) What is the mean number of pencils?

Answer: __________

(ii) What is the median?

Answer: __________

(9 marks)

End of Paper