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.  | \[
\frac{1250}{25} = \underline{______}
\] |                                  |
| 2.  | One of the following is **not** a factor of 120:  
A) 5  
B) 23  
C) 40  
D) 60 |                                  |
| 3.  | Translate the square shown by 4 units to the **right** and 2 units **up**. | ![Grid Diagram] |
| 4.  | There are 4 white beads and 5 black beads in a box. I pick one at random. What is the probability that I pick a white bead?  
\[\text{Answer: } \underline{_______}\] | ![White and Black Beads] |
| 5.  | Fill in:  
\[3p + \underline{p} = 8p\] |                                  |
| 6.  | Find the size of \(x\):  
\[135^\circ \]  
\[\text{Answer: } \underline{______}^\circ\] | ![Angle Diagram] |
| 7.  | Work out:  
\[3^2 + 5\]  
\[\text{Answer: } \underline{_______}\] |                                  |
| 8.  | If \(y = 3x - 1\), find \(y\) when \(x = 4\).  
\[y = \underline{_______}\] |                                  |
9. One of the dotted lines is **not** a line of symmetry. Which one is it?

Answer: _________

<table>
<thead>
<tr>
<th>9.</th>
<th><img src="image" alt="Diagram" /></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A X P Q B Y</td>
</tr>
</tbody>
</table>

10. Fill in the box:

\[
\frac{6}{2} = 2
\]

Answer: _________

| 10. | \[
\frac{6}{2} = 2
\] |

11. Each side of this shape is 20 cm long. Find the **perimeter**.

Answer: _________ cm

| 11. | ![Hexagon](image) |

12. Fill in the missing number:

11, 21, ____, 41, 51

| 12. | 11, 21, ____ , 41, 51 |

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

\[
\text{PD RT 90 FD 100 LT 90 FD 50 LT 90 FD 50}
\]

| 13. | ![LOGO Commands](image) |

14. My home lies in the direction NE from O. Which one of the points A, B, C and D represents my house on the map?

Answer: _________

| 14. | ![Map](image) |
15. A film starts at 8:30 am and lasts till 10:45 am. How long is the film in minutes?

Answer: _________ minutes

16. The table below shows the number in thousands of cars sold in 2009, 2010, 2011 and 2012:

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cars sold (in thousands)</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Complete the frequency table.

17. What is the value of \( y \) when \( x = 2 \)?

Answer: \( y = _____ \)

18. Write down the output of this number machine.

19. Complete the shape such that AB is a line of symmetry.

20. Six buns cost €1.20. How much do three buns cost?

Answer: €_______
1. (a) Work out the following:

\[ 1022 - 420 + 120 = \text{____________} \]

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

\[ \begin{array}{cccc}
17 & 36 & 47 & 64 & 123 \\
\end{array} \]

The numbers are __________ and __________.

[3 marks]

2. (a) (i) Write \( 2.7 \times 10^4 \) as an ordinary number.

Answer: ____________________

(ii) Fill in \( 243 : 72 = \text{_______} : 8 \)

(b) Write in order, smallest first:

\[ 17 \quad 0.17 \quad 170 \quad 1.72 \]

\[ \text{_______, ______, ______, ______} \]

[4 marks]
3. (a) The sum of the angles in a quadrilateral is ________°.

(b) Calculate the value of angle x.

\[
\begin{array}{c}
\text{x} \\
135° \\
100° \\
\end{array}
\]

Answer: __________°

[4 marks]

4. (a) Complete the following sequence:

3, 7, 11, ____, 19, ____

(b) Change 3122 m into kilometres.

Answer: _____________ km

(c) Fill in with less or greater.

2719 g is ______________ than 2.52 kg.

[4 marks]

5. (a) Expand

\[5(3 - 2x) = \text{__________________________}\]

(b) Shade \(\frac{3}{4}\) of the area:

\[
\begin{array}{c}
\text{Answer: ____________}
\end{array}
\]

[3 marks]
6. (a) What is 15% of 310?

Answer: ____________

(b) How many days are there from 1 March to 15 May, including both these days?

Answer: __________ days

(c) Find the area of the shape shown.

Answer: __________ cm$^2$

[6 marks]

7. (a) I bought three bags of peas. I gave €10 to the shopkeeper and got €2.80 change. How much did each bag cost?

Answer: €________

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

```
PD
RT _____
FD 100
RT 90
FD _____
RT 90
FD _____
LT _____
FD 50
END
```
8. (a) Work out the volume of the cuboid. 
   Give your answer to two decimal places.

   Answer: __________ cm\(^3\)

   ![Cuboid Diagram]

(b) (i) Find the values of \(x\) and \(y\).

   \[x = \quad \text{cm} \quad y = \quad \text{cm}\]

(ii) Find the perimeter of the shape.

   Answer: __________ cm

[6 marks]

9. I have 5 black, 8 white and 3 striped marbles.

   ![Marbles Diagram]

I pick a marble at random.

Answer the following questions, giving your answers in their simplest form.

(a) What is the probability of picking a black marble? 
   Answer: _____

(b) What is the probability of picking a white marble? 
   Answer: _____

(c) What is the probability of picking a marble that is not striped? 
   Answer: _____

I now remove all the black marbles.

(d) What is the probability of picking a striped marble? 
   Answer: _____

[4 marks]
10. 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 dentist is _______ of the tower.

(b) The police station is _______ of the tower.

(c) The supermarket is _______ of the dentist.

(d) Angle STD is

\[ 45^\circ \quad 135^\circ \quad 90^\circ \quad 60^\circ \]

Tick the correct answer

[4 marks]

11. (a) Solve the equation: \(4x - 1 = 27\)

Answer: _____________

(b) Write down the three square numbers between 18 and 50:

________, ________

(c) Complete the following number machine:

\[
\begin{array}{c}
5 \\
\times 8 \\
-5 \\
\end{array}
\]

(d) Collect like terms:

\[2p - 5q + 4p + q\]

Answer: _____________

[8 marks]
12. (a) The diagram shows the tiles in a room. Some of the tiles are cracked.

![Diagram of tiles]

(i) Each tile costs €2.10 each. How much will it cost to replace the cracked tiles?

Answer: €

(ii) The percentage of cracked tiles is ______%.

(b) (i) Draw pattern 4.

(ii) Pattern 5 will have ______ dots.

(iii) Choose the rule for the number of dots in each pattern of the sequence.

(A) Start with 1 and add three each time.
(B) Start with –1, multiply by 2 and add 1 each time.
(C) Start with 1, multiply by 3 and add 1 each time.
(D) Start with 4 and add 3 each time.

Answer: _________

[8 marks]
13. The bar graph shows the number of passes in the final exam in English for the years from 2007 to 2012.

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

<table>
<thead>
<tr>
<th>Years</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Passes</td>
<td>90</td>
<td>120</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Calculate the total number of students who passed the exam.

Answer: _________

(c) In 2011 half of the students failed in the exam. How many students sat for the exam in 2011?

Answer: _________

(d) What is the ratio of the number of passes in 2009 to that in 2011?

Express the ratio in its simplest form.

_____ : _____

[9 marks]
14. (a) (i) Use the graph to complete the following table:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$x$</td>
<td>-1</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>$y$</td>
<td>1</td>
<td></td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

(ii) The equation of the line is one of the following:

(A) $y = -x + 2$
(B) $y = 2x + 3$
(C) $y = x + 2$

The correct equation is

Answer: _______________

(iii) Draw a line parallel to the graph and passing through the origin.

(b) The ages of the members of a family are

12, 65, 13, 60, 22, 18, 20.

(i) What is their mean age?

Answer: __________

(ii) What is the median?

Answer: __________

[10 marks]
<table>
<thead>
<tr>
<th>Maths</th>
<th>D Main Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Page 5 Question 11 (b)</td>
</tr>
<tr>
<td></td>
<td>There should be another line for third answer</td>
</tr>
</tbody>
</table>