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>One of these numbers is not divisible by 20. Which one is it? A) 120 B) 340 C) 200 D) 550</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>2.</td>
<td>Work out 25% of 460.</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>3.</td>
<td>Find the size of $x$:</td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="image_url" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Answer: __________</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Work out $1422 - 22 + 100 =$________</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>If $y = 2x + 3z$, find $y$ when $x = 1$ and $z = 2$. $y =$________</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The circumference of a circle of diameter 4 cm is approximately A) 24 cm B) 52 cm C) 12 cm D) 48 cm</td>
<td>Answer: __________ cm</td>
</tr>
<tr>
<td>7.</td>
<td>Solve: $3p + 5 = 8$</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>8.</td>
<td>An ice cream costs three times as much as a chocolate. I buy a chocolate for €1.50. How much does one ice cream cost?</td>
<td>Answer: €________</td>
</tr>
</tbody>
</table>
9. Two of these triangles have the same area. Which ones are they?

![Triangle Diagram]

Answer: _____ and _____

10. Which one of these numbers is **not** a cube number?

A) 27  B) 8  C) 39  D) 64

Answer: _______

11. Work out the **mean** of the following numbers:

23  10  33  12  22

Answer: _______

12. Write down the **area** of the following parallelogram:

\[
\text{Base} = 12 \text{ cm}, \quad \text{Height} = 10 \text{ cm}
\]

Answer: _________ cm²

13. Write down the **smallest** number:

A) \(\frac{5}{7}\)  B) 0.5  C) \(\frac{3}{10}\)  D) \(\frac{2}{3}\)

Answer: __________

14. Simplify:

\[2x + q - 2x + 2q + 3 = \underline{\phantom{00000}}\]
15. One of the lines A, B and C is the graph of:

\[ y = x - 2 \]

Which one is it?

Answer: _______

16. 15 is a factor of:

A) 21  B) 45  C) 111  D) 62

Answer: _______

17. The table below shows the amount of cars sold:

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Complete the bar graph.

18. There are 12 red pencils and 6 yellow pencils in a box. I pick one at random. What is the probability that I pick a yellow pencil?

Answer: __________

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

```
PD FD 100 RT 90 FD 100 LT 90 FD 100
```

20. In a school 300 students passed the English exam. 1/5 of these students obtained a Grade A. How many students obtained a Grade A?

Answer: __________
1. (a) Work out the following correct to three significant figures:

\[ 135.27 - 27.31 \]

Answer: _____________

(b) Work out the following correct to one decimal place:

\[ 35.31 \times 26.75 \]

Answer: _____________

[4 marks]

2. (a) Express as a percentage:

(i) \[ 0.35 \]

Answer: _____________

(ii) \[ \frac{4}{5} \]

Answer: _____________

(b) What is 65% of 289 correct to one decimal place?

Answer: _____________

[4 marks]
3. ABCD is a quadrilateral with AD = BC. AB is parallel to CD.
(a) Work out the perimeter of ABCD.

Answer: ___________ cm

(b) Work out the area of triangle ABD to the nearest unit.

Answer: ___________ cm²

[5 marks]

4. Given that $z = 2x^2 - 3y$
   (a) Calculate the value of $z$ when $x = 2$, $y = -1$.

Answer: _______

(b) Simplify $3x - 5y + 2x + 7y$.

Answer: _______

[4 marks]

5. Below is a circle of radius 8 cm and centre O.

(a) What is the diameter of the circle?

Answer: _______ cm

(b) Work out the circumference of the circle correct to one decimal place. ($C = 2\pi r$)

Answer: _________ cm

(c) I cut one half of the circle. What is the perimeter of the remaining shape correct to one decimal place?

Answer: _________ cm

[6 marks]
6. (a) Work out $\frac{3}{5}$ of 33.65 kg. (Give your answer in grams.)

Answer: ____________ g

(b) Change 5730 m into kilometres.

Answer: ____________ km

[4 marks]

7. John bought a car costing €10250 without V.A.T. The V.A.T. rate is 20%.

(a) How much V.A.T. did he pay?

Answer: €____________

(b) How much did he pay in all?

Answer: €____________

[4 marks]

8. Solve the equations:

(a) $3x + 10 = x$

Answer: $x = ____________$

(b) Write down the square numbers between 15 and 40.

__________, __________, __________

[6 marks]
9. Calculate the value of angles $w, x, y$ and $z$.

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

[4 marks]

10. (a) A pencil is 2.7 cm long. Mark on the scale the length of the pencil.

(b) Fill in:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Fraction</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>30%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(c) John divides €5500 among his two children Albert and Jane in the ratio 5:6. Work out Albert’s share.

Answer: €___________

[6 marks]
11. (a) ABC is an isosceles triangle.

(i) Complete: \( 2x + x + x = \) ______°

(ii) Work out the value of \( x \).

\[ x = \] ______

(b) The area of the rectangle ABCD is 1024 cm\(^2\).

(i) Tick the correct value of \( a \).

5 cm \( \phantom{0} \) 10 cm \( \phantom{0} \) 16 cm \( \phantom{0} \) 100 cm

(ii) Work out the perimeter of ABCD.

Answer: _________ cm

[5 marks]

12. ABCDEF is a triangular prism with two square faces.

Complete the net of the prism.

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

![Bar Graph]

(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>200</td>
<td>80</td>
<td>40</td>
</tr>
</tbody>
</table>

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

Answer: _________

(c) 10% of those who passed in 2009 obtained a grade A. How many students got a grade A in 2009?

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) Complete the following number machines.

\[
\begin{array}{c}
\text{Input } x \\
1 \quad \xrightarrow{\times 5} \quad -3 \\
\text{Output } y
\end{array}
\]

\[
\begin{array}{c}
5 \quad \xrightarrow{\times 4} \quad -20 \\
\text{Output } y
\end{array}
\]

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

\((1, \_\_), (5, \_\_).\)

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

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

\((-3 \_\_), (3, \_\_).\)
15.  

(a) The diagram shows an arrangement of ten light bulbs. Four of the light bulbs are red and the rest are blue. When I press a switch, one light bulb lights at random.

(i) What is the probability that a red bulb lights up?

Answer: ___________

I remove one of the blue bulbs.

(ii) What is the probability that a blue bulb lights up?

Answer: ___________

(b) Line AB is a line of symmetry.

(i) Complete the figure shown.

(ii) Each square is 1 cm$^2$. What is the area of the complete shape?

Answer: __________ cm$^2$