Year 5 Maths Reasoning Test Set: Paper A

1. a) Measure the following line, giving the answer in cm.

b) Measure the following line giving the answer in mm.

2. Some children count the number of vehicles that pass a school in one hour. They present the data using a pictogram.

\[ \text{motorbike} = 4 \text{ vehicles} \]

<table>
<thead>
<tr>
<th>Motorbike</th>
<th>Car</th>
<th>Lorry</th>
<th>Van</th>
<th>Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Motorbike icon]</td>
<td>[Car icon] x 4</td>
<td>[Lorry icon]</td>
<td>[Van icon]</td>
<td>[Bus icon]</td>
</tr>
</tbody>
</table>
a) How many more cars passed the school compared with vans and lorries?

b) How many vehicles passed the school in total?

3. Sebastian has 4 football shirts, and three pairs of shorts. Each time he goes to play football with his friends he likes to wear a different combination of one shirt and one pair of shorts. How many different combinations of shirts and shorts can he wear?

4. Here are 2 lines.

____________________________
____________________________

Circle any of these words that describe these 2 lines.

perpendicular  horizontal  parallel  vertical
5. Complete these sequences
   a) 
   
   |   | 84 | 91 | 98 | 105 |
   
   b) 
   
   | 375 | 425 | 450 | 500 |
   
6. Fill in the missing numbers to make this subtraction calculation correct.

   
   
   - 4 5 

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7. Layla records the temperature in the playground every hour during the school day. Here are the results:

   ![Temperature Graph]

   - 09:00: 2°C
   - 10:00: 4°C
   - 11:00: 6°C
   - 12:00: 8°C
   - 13:00: 10°C
   - 14:00: 12°C
   - 15:00: 4°C
a) What is the highest temperature recorded?

b) The temperature is 8°C twice in the day. Estimate how many minutes between these two times.

8. A scientist collects three samples of soil. They weigh 45 kg, 32 kg and 114 kg. The samples are combined and then divided into 100 packs of equal weight for testing the growth of a plant. What weight will each pack weigh? Give your answer in kilograms.

9. Two of these calculations give the same answer. Circle the calculation that gives a different answer to the other two.

\[
\frac{2}{3} \text{ of } 48 \quad \frac{5}{8} \text{ of } 48 \quad \frac{5}{6} \text{ of } 36
\]
10. At the end of the credits of 2 television programmes are the years the programmes were produced. Here are the years.

MCMXCIV   MMXVI

How many years are there between the production of each programme?

11. 26 243 spectators attended a football match. A local newspaper reported that the attendance was twenty-six thousand. To what was the attendance rounded? Circle the correct answer.

10   100   1000   10 000

12. Order the following fractions from smallest to largest:

\( \frac{7}{8} \)   \( \frac{3}{4} \)   \( \frac{1}{2} \)   \( \frac{5}{8} \)   \( \frac{9}{16} \)

smallest                   largest

13. Circle the numbers that are factors of both 32 and 48.

2   3   4   5   6   7   8   10   12   15   16
14. A school buys 16 digital cameras. Each camera costs £146. What is the total cost of the 16 cameras?

15. Each number in a square is the total of the two adjoining numbers in circles. Calculate the three missing numbers:

\[
\begin{array}{ccc}
\phantom{.} & 0.55 & 2.09 \\
1.24 & \phantom{.} & 2.87
\end{array}
\]
16. Here is a shape on a grid.
   a) Reflect the shape about the solid horizontal line.

   b) Translate the new shape 8 places to the right.
17. Anna and Shen each have a bottle of water.
Anna has a 500ml bottle and drinks half of the bottle.
Shen has a 330ml bottle and drinks three quarters of the bottle.
Explain why Anna drinks more than Shen.

18. Complete the following, writing each number as a percentage, fraction and decimal:
   a) \[45\% = \frac{45}{100} = 0.45\]
   b) \[\% = \frac{78}{100} = 0.78\]

19. Using the line on the page, draw accurately an angle of 116°.
20. A geologist measures the mass of 2 rocks. One weighs 19.072 kg, and the other weighs 3.726 kg. Calculate the difference in mass between the 2 rocks.