Answer the questions

(1) If the zoo is 20km 500m from Matthew's house, how far is the zoo from the chemist?

5km 400 m 7km 400 m  ?

House  train station  chemist  zoo

(2) If the weight of the two pumpkins is the same, what is the weight of one pumpkin (write in mixed fraction)?

(3) Joel made the Input-Output table below,

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>18</td>
<td>6</td>
</tr>
</tbody>
</table>

What rule can be used to find each output number?

(4) \( + + + + = 75 \)

\(-4\) =

Find the value of \(+ + \)
(5) Name the next figure in the pattern given below:

![Pattern](image)

Choose correct answer(s) from given choice

(6) Which rule can be used to explain this number pattern?
1, 6, 26, 106, 426, 1706, 6826, ….

a. Multiply by 4 and add 2
b. Multiply by 1, then multiply by 2, then multiply by 3, and so on
c. Add 0, then add 1, then add 2, and so on
d. Multiply by 4 and subtract 2

(7) What are the next two shapes?

![Shapes](image)

a. ![Shape](image)

b. ![Shape](image)

c. ![Shape](image)

d. ![Shape](image)

(8) Complete the pattern

![Pattern](image)

a. ![Pattern](image)

b. ![Pattern](image)

c. ![Pattern](image)

d. ![Pattern](image)

(9) Find the next figure.

![Pattern](image)

a. ![Pattern](image)

b. ![Pattern](image)

c. ![Pattern](image)

d. ![Pattern](image)
(10) Which of the following 2 statements is true
Statement 1: All squares are rectangles.
Statement 2: All rectangles are squares.

a. Only statement 1
b. Statements 1 and 2
c. None of these
d. Only statement 2

(11) Which of following two shapes can be used to create above figure?
(You can cut the shapes if required)

a. 

b. 

c. 

d. 

(12) 9999 = 9000 + ____ + 9. What is the missing number?

a. 990
b. 99
c. 909
d. 9

(13) A bear is chasing a mouse.

The bear starts at 7 m and jumps 3 m every time.
The mouse starts at 15 m and jumps 1 m every time.
If they both start at the same time, the bear would reach the mouse after ____ jumps.

(14) If 70 cm of the pole is buried in the ground, the total length of the pole will be ____ cms.
(15) The lowest natural number which when divided by 9, 18, 12 leaves the remainder of 3 in each case is _______.

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(1) 7km 700 m

**Step 1**
From given picture we can see that,
Distance between Matthew's house to zoo =
(Distance between house and train station)
+ (Distance between train station and chemist)
+ (Distance between chemist and zoo)

**Step 2**
Distance between Matthew's house to zoo =
5km 400 m
+ 7km 400 m
+ (Distance between chemist and zoo)

**Step 3**
Distance between Matthew's house to zoo = (Distance between chemist to zoo) + 12km 800 m

**Step 4**
Therefore Distance between chemist to zoo = Total distance - 12km 800 m,
⇒ = 20km 500m - 12km 800 m,
⇒ = 7km 700 m

(2) \( \frac{1}{3} \) \( \frac{1}{4} \) kg

**Step 1**
Since weight scale is pointing between 6 and 7, weight of 2 pumpkins =
\( \frac{1}{6} \) \( \frac{1}{2} \)

**Step 2**
Weight of one pumpkin =
\( \frac{1}{6} \) \( \frac{1}{2} \)
\( \frac{1}{2} \) \( \frac{1}{2} \)

**Step 3**
Therefore Answer =
\( \frac{1}{3} \) \( \frac{1}{4} \)
(3) Divide by 3

**Step 1**
If we observe all numbers carefully, it can be seen that output is equal to input divided by 3,
- $9 \div 3 = 3$
- $12 \div 3 = 4$
- $15 \div 3 = 5$
- $18 \div 3 = 6$

**Step 2**
Therefore to get the output, we should divide the input by 3.

(4) 33

(5) Octagon

**Step 1**
We can observe following in this pattern,
- 1\textsuperscript{st} figure has 5 sides.
- 2\textsuperscript{nd} figure has 6 sides.
- 3\textsuperscript{rd} figure has 7 sides.

**Step 2**
If same pattern continues, next figure should have 8 sides. Therefore next figure should be Octagon.

(6) a. Multiply by 4 and add 2

(7) a. 

(8) c. 

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(9) a.

**Step 1**
We can see that in each successive picture, the triangle is rotating clock-wise.

**Step 2**
Similarly, the ring is also rotating clock-wise.

**Step 3**
In the last picture, the triangle is at the bottom-right. Therefore in the next picture, it should be at the left-bottom.

**Step 4**
Similarly in the last picture, the ring is at the top-left. Therefore in the next picture, it should be at the top-right.

**Step 5**
Therefore, the next picture will be as follows:

(10) a. Only statement 1

**Step 1**
Any quadrilateral with four right angle corner is rectangle.

**Step 2**
A square is a special kind of rectangle, it is one where all the sides have the same length.

**Step 3**
Therefore we can say that **All squares are rectangles** and **All rectangles are not square**

**Step 4**
Therefore only statement 1 is correct.
Step 1
A rectangle and an isosceles triangle can be used to create this figure.

Step 2
As given in question we can cut the shapes. Let's cut triangle as following.

Step 3
Now we can add these triangles to rectangle as shown below,

Step 4
Therefore following shapes can be used to create this shape.

Step 1
After 1st jump, bear will be at 10 and mouse will be at 16

Step 2
After 2nd jump, bear will be at 13 and mouse will be at 17

Step 3
After 3rd jump, bear will be at 16 and mouse will be at 18

Step 4
After 4th jump, bear will be at 19 and mouse will be at 19

Step 5
Therefore, bear will catch mouse in 4 jumps.
**Step 1**
The total length of the pole is the sum of lengths of the part above the ground and the part buried in the ground.

**Step 2**
By looking at the figure, we know the length of the pole above the ground = 2.7 m = 270 cm.

**Step 3**
The length of the pole buried in the ground = 70 cm.

**Step 4**
Total length of the pole = 270 cm + 70 cm
= 340 cms

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**Step 1**
The lowest number which is divisible by 9, 18, 12, is the Least Common Multiple (LCM) of 9, 18, 12.

**Step 2**
The LCM of 9, 18 = 36.

**Step 3**
Now we need to find the number which leaves the remainder of 3 when divided by these numbers.
This number should be 3 more than the LCM.
Therefore, the required number = LCM (9, 18, 12) + 3
⇒ = 36 + 3
⇒ = 39