1) The Diagram 1, PTR and QTS are straight lines. The value of \( x \) is

- A 20
- B 30
- C 80
- D 100

2) Diagram 2

In Diagram 2, GHK and LHK are straight lines. The value of \( p \) is

- A 80
- B 100
- C 120
- D 150

3) Diagram 9

In Diagram 9, PQRS is a rhombus. PTR and STQ are straight lines. \( j + k + l + m + n = \)

- A 180
- B 270
- C 360
- D 450

4) Diagram 11

Diagram 11 is regular hexagon. The value of \( x \) is

- A 30
- B 60
- C 90
- D 120

5) Diagram 4

In Diagram 4, PTR is the diameter of the circle and STQ is a straight line. The value of \( x \) is

- A 55
- B 40
- C 35
- D 30

6) Diagram 7

In the Diagram 7, O is the centre of circle EFGH. Find the value of \( x \).

- A 70
- B 60
- C 40
- D 30
7) In the diagram 17, shows a circle $PRS$ with centre $O$. $OQRT$ is a rectangle and $OTS$ is a straight line. $OQ = 12$ cm long and perpendicular to the chord $PQR$. Given the $PR = 10$ cm, find the length of $TS$, in cm.

A 8                      C 3
B 7                      D 2

8) In the diagram 21, PQRS is a square and $STQ$ is an arc of a circle with centre $P$. The perimeter of the whole diagram in cm is (take $\pi = \frac{22}{7}$)

A 61                     C 116
B 94                     D 122

9) The median for 4, 5, 8, 4, 9 is

A 4                      C 6
B 5                      D 8

10) The pictogram in diagram 8 shows the number of students whose birthday are in the six months as above. The number of students whose birthdays fall in the months after October is

A 12                      C 60
B 15                      D 75

11) The pie chart in Diagram 12 shows the ways used by a group of students to come school.

Which of the following statement about the pie chart is true?

A $\frac{1}{3}$ of the students walk to school.
B $\frac{1}{9}$ of the students come to school by cars.
C 15% of the students take buses.
D 30% of the students walk to school.

12) Factorise $6pq + 10qr$

A $6p + 10r$   B $3pq + 5qr$
C $2q(3p + 5r)$   D $2pq(3 + 5r)$

13) In order to complete the equation

$$(x + 2y)(2x + 5y) = 2x^2 + [\quad] - 10y^2$$

$[\quad]$ must be filled with

A $-xy$   C $xy$
B $-9xy$   D $9xy$

14) Given that $p = -3$, and $r = -1$. Then

$$\frac{p^2}{r}(6 - p) =$$

A -81   C 18
B -27   D 54
15) The table 1 shows the number of balls in a box.

<table>
<thead>
<tr>
<th>Colour</th>
<th>Number of Balls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>$x$</td>
</tr>
<tr>
<td>Blue</td>
<td>$\frac{1}{2}x$</td>
</tr>
<tr>
<td>White</td>
<td>$x - 4$</td>
</tr>
</tbody>
</table>

*Table 1*

If the total number of balls in the box is $y$, the equation involving $x$ and $y$ is

- **A** $y = 5x - 2$
- **C** $y = \frac{1}{2}x - 4$
- **B** $y = 5x - 8$
- **D** $y = \frac{5}{2}x - 4$

16) \( \frac{2}{3x} - \frac{x - 1}{6x} = \)

- **A** $\frac{1 - x}{2x}$
- **C** $\frac{5 - x}{6x}$
- **B** $\frac{2 - x - 1}{3x}$
- **D** $\frac{11 - 3x}{18x}$