

Ex. 6.1, Class VIII

$$\begin{aligned}
 6. \quad & 1^2 + 2^2 + 2^2 = 3^2 \\
 & 2^2 + 3^2 + 6^2 = 7^2 \\
 & 3^2 + 4^2 + 12^2 = 13^2 \\
 & 4^2 + 5^2 + \underline{20^2} = 21^2 \\
 & 5^2 + \underline{6^2} + 30^2 = 31^2 \\
 & 6^2 + 7^2 + \underline{42^2} = \underline{43^2}
 \end{aligned}$$

$$\begin{aligned}
 7. \quad & 1 + 3 + 5 + 7 + 9 = 5^2 \quad (\text{Sum of first 5 odd nos}) \\
 & \quad \quad \quad = 25
 \end{aligned}$$

$$\begin{aligned}
 & 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 \\
 & \quad \quad \quad = 10^2 \quad (\text{Sum of first 10 odd nos}) \\
 & \quad \quad \quad = 100
 \end{aligned}$$

$$\begin{aligned}
 & 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 + 23 \\
 & \quad \quad \quad = 12^2 \quad (\text{Sum of first 12 odd nos}) \\
 & \quad \quad \quad = 144
 \end{aligned}$$

$$\begin{aligned}
 8 \text{ (i)} \quad & 49 = 7^2 \\
 & \quad \quad = 1 + 3 + 5 + 7 + 9 + 11 + 13
 \end{aligned}$$

(Sum of first 7 odd nos)

$$\begin{aligned}
 \text{(ii)} \quad & 121 = 11^2 \\
 & \quad \quad = 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21
 \end{aligned}$$

(Sum of first 11 odd nos)