Pattern of Addition in Odd Numbers

Introduction

- Odd numbers are numbers that are not divisible by 2
- They always end in 1, 3, 5, 7, or 9
- Examples of odd numbers are 1, 3, 5, 7, 9, 11, and so on
- When we add odd numbers in a sequence, we get special patterns
- The sums usually follow a pattern of square numbers and grow in a stepwise manner

Examples with Solutions

Example: 1 + 3 = ?

✓ Both are odd numbers

✓ 1 + 3 = 4

Answer: 4

Example: 3 + 5 = ?

✓ Add two odd numbers

✓ 3 + 5 = 8

Answer: 8

Example: Add first three odd numbers: 1 + 3 + 5

✓ 1 + 3 = 4,

✓ 4 + 5 = 9

Answer: 9

Example: Find the sum of four odd numbers: 1 + 3 + 5 + 7

✓ 1 + 3 = 4,

✓ 4 + 5 = 9,

✓ 9 + 7 = 16

Answer: 16

Example: Observe the pattern:

- ✓ 1 = 1
- ✓ 1 + 3 = 4
- ✓ 1 + 3 + 5 = 9
- ✓ 1 + 3 + 5 + 7 = 16
- ✓ 1 + 3 + 5 + 7 + 9 = 25
- ✓ The pattern is forming square numbers (1^2, 2^2, 3^2...)

Answer: Sum of first n odd numbers = n × n

Summary Points

- Odd numbers are not divisible by 2 and end in 1, 3, 5, 7, or 9.
- Adding odd numbers forms a pattern of square numbers.
- These patterns help us predict the sum of a group of odd numbers.
- Understanding this pattern builds logical thinking and helps in fast addition.
- Patterns in odd numbers are fun and useful in higher–level math.