

Number Patterns

Chapter 1: Patterns in Mathematics · Topic 1

Key Concept

Interesting relationships exist between different number patterns — for example, adding two consecutive triangular numbers always produces a square number ($1+3=4$, $3+6=9$, $6+10=16$). Patterns like these are not just curiosities; they form the basis of algebra and help students recognise structure in mathematics, which is essential for solving more complex problems in later years, including in geometry and combinatorics.

Quick Revision Notes

- Square numbers: 1,4,9,16,25... formed by multiplying a number by itself.
- Triangular numbers: 1,3,6,10,15... formed by adding consecutive counting numbers.
- Adding two consecutive triangular numbers gives a square number.
- Number patterns build the foundation for algebraic thinking.

Practice Questions

- 1 Write the first five triangular numbers.
- 2 Verify that adding two consecutive triangular numbers gives a square number, using an example.
- 3 Find the 6th square number.