

Number Patterns and Sequences

Chapter 5: Number Play · Topic 1

Key Concept

Other common sequence types include arithmetic sequences (constant difference between terms, like 2,4,6,8...) and geometric sequences (constant ratio between terms, like 2,4,8,16... where each term doubles). Recognising which type of sequence a pattern follows — and correctly identifying its rule — allows prediction of future terms without needing to write out the entire sequence, a valuable skill in both pure mathematics and applied fields like finance (compound interest follows a geometric pattern).

Quick Revision Notes

- Fibonacci sequence: each term is the sum of the two preceding terms (1,1,2,3,5,8,13...).
- Arithmetic sequence: constant difference between terms (e.g., 2,4,6,8...).
- Geometric sequence: constant ratio between terms (e.g., 2,4,8,16...).
- Fibonacci numbers appear frequently in natural patterns, like shells and flowers.

Practice Questions

- 1 Write the next three terms of the sequence 2,4,6,8...
- 2 Identify whether 3,9,27,81 is arithmetic or geometric, and find the next term.
- 3 Write the first eight terms of the Fibonacci sequence.