QUICK REFERENCE SHEET

Sequences and Series Quick Reference

A more useful quick-reference sheet for arithmetic and geometric sequences and finite sums, with pattern checks and term-versus-sum reminders.

QUICK OVERVIEW

Category: general math

Includes 1 related guide page.

Links back to 4 calculator tools.

FORMULA HIGHLIGHTS

Arithmetic nth term

$$a_n = a_1 + (n - 1)d$$

Geometric nth term

$$a_n = a_1 \times r^{(n - 1)}$$

RECOGNISE THE PATTERN FIRST

- Equal difference -> arithmetic sequence
- Equal ratio -> geometric sequence
- Sequence lists terms; series adds them

FORMULA MAP

- Arithmetic nth term: a + (n - 1)d
- Arithmetic sum: n/2 x (first + last)
- Geometric nth term: a x r^(n - 1)
- Geometric finite sum depends on the common ratio r

WORKED EXAMPLES

5, 8, 11, 14 is arithmetic with difference 3.

2, 6, 18, 54 is geometric with ratio 3.

Use the nth-term rule for a single position and the sum rule for a cumulative total.

PRACTICAL REMINDERS

- Do not confuse the tenth term with the sum of the first ten terms.
- Check whether the real process is additive or multiplicative before choosing the model.