Recognise first-order linear recurrences, arithmetic/geometric sequences and their partial sums

Key knowledge | Free preview

Learning target: Recognise first-order linear recurrences, arithmetic/geometric sequences and their partial sums.

A recursive rule generates a term from earlier information, while an explicit rule gives it directly from its index. For a first-order linear recurrence, subtracting a fixed point often produces a geometric sequence. Always state the starting index and distinguish a term limit from a series sum.

Try the mathematics

Task 1. Let $t_0=3$ and $t_{n+1}=0.6t_n+8$. Find t_1,t_2, the fixed point L and an explicit formula. Explain the limit.

Continue with the full worksheet

The complete resource has 2 focused task sets and substantive worked solutions. Use an exercise book or print the A4 worksheet. This preview shows the first task without its full solution.

Find this resource: https://resources.aspiretopowerlearning.com.au/vce/skills/sm-u1-o1-kk-04/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 1; Outcome 1; Key knowledge; bullet 4; p. 61.

The learning target is a concise paraphrase. Aspire reference: sm-u1-o1-kk-04. This is an internal identifier, not an official VCAA code.

Free preview: share intact with attribution, without charging. Full resource rights are not included.

Original independent practice. Not published or endorsed by VCAA. The activity is not an official SAC, examination or complete treatment of every clause of a broad curriculum requirement.