Understand first-order recurrences as financial growth and decay models.

Key knowledge | Free preview

Learning target: Understand first-order recurrences as financial growth and decay models.

Many financial models share the form u(n+1)=Ru(n)+d, but the meanings of the multiplier, addition and index differ. Interest or reducing-balance depreciation changes R. A repayment, withdrawal or flat loss changes d; regular saving makes d positive. State the timing of any payment and whether a period means a year, month or item of production.

Try the mathematics

Task 1. Starting at 10000, write update rules for: annual simple interest of 3%; annual compound interest of 5%; flat depreciation of 800 yearly; unit-cost depreciation of 2 per item; reducing-balance depreciation of 15% yearly; a monthly loan at 0.5% with end-month payment 250; an annuity at 0.5% with withdrawal 300; and regular saving at 0.5% with deposit 200.

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/aspire-internal-gm-u34-o1-aos2-finance-kk-01/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). General Mathematics; Units 3–4; Outcome 1; Key knowledge; Recursion and financial modelling; bullet 1; p. 91.

The learning target is a concise paraphrase. Aspire reference: aspire-internal-gm-u34-o1-aos2-finance-kk-01. This is an internal identifier, not an official VCAA code.

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