Understand how domain and range settings affect technology-generated graphs

Key knowledge | Free preview

Learning target: Understand how domain and range settings affect technology-generated graphs.

Use a calculator table, spreadsheet or short program to examine $u_0=100$, $u_{n+1}=0.8u_n+60$. Keep a record of inputs, iteration order and displayed precision. The closed form $300-200(0.8)^n$ gives an independent benchmark. Expected outputs below are mathematical checks for your run, not a claim that software has already run.

Try the mathematics

Task 1. Graph $u(x)=300-200(0.8)^x$ for $0\leq x\leq 20$, using a vertical window $90\leq u\leq 310$. Overlay the integer-week table. Explain the domain/range choices and why an apparent flat line near 300 needs interpretation.

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-o3-kk-03/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 1; Outcome 3; Key knowledge; bullet 3; p. 63.

The learning target is a concise paraphrase. Aspire reference: sm-u1-o3-kk-03. This is an internal identifier, not an official VCAA code.

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