Understand how mathematical analysis supports valid contextual conclusions

Key knowledge | Free preview

Learning target: Understand how mathematical analysis supports valid contextual conclusions.

An illustrative population is modelled by $P' = 0.2P(1-P/1000)$, with $P(0)=100$ and time measured in weeks. The population observations supplied here are invented for mathematical practice. Compare model behaviour, numerical approximations and contextual conclusions while keeping the model's assumptions separate from the example data.

Try the mathematics

Task 1. Illustrative observations at weeks 0,5,10,15 are 100,220,450,700. Compare them with model predictions 100,231.9693,450.8531,690.5679 and report residuals. What conclusions are justified?

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-u34-o2-kk-06/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Units 3–4; Outcome 2; Key knowledge; bullet 6; p. 115.

The learning target is a concise paraphrase. Aspire reference: sm-u34-o2-kk-06. 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.