A technology-generated counterexample

Key skills | Free preview

Learning target: Use technology to produce examples or counterexamples for a claim.

Technology is useful for finding examples and counterexamples, especially through graphs, tables and parameter experiments. A single valid counterexample defeats a universal claim, but repeated successful tests do not prove it. Show the exact input and mathematical evidence, then explain clearly which claim is refuted and which broader conclusion still needs a proof.

Try the mathematics

Task 1. Use a graph, value table and symbolic factorisation to test the claim “Every real cubic has exactly one real zero.” Supply a counterexample with reproducible inputs.

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-mm-u2-o3-ks-04/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Unit 2; Outcome 3; Key skills; bullet 4; p. 56.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u2-o3-ks-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.