Write propositional proofs in ordinary language and mathematical notation

Key skills | Free preview

Learning target: Write propositional proofs in ordinary language and mathematical notation.

A proof must establish the whole stated claim under explicit assumptions. A direct proof follows implications; a contrapositive proves an equivalent implication; a contradiction exposes an impossible consequence of denying the claim. Induction needs both a starting case and a step for an arbitrary admissible integer.

Try the mathematics

Task 1. For integer n, prove: if n^2 is even, n is even. Identify the contrapositive. Then explain why testing n=2,4,6 would not prove the claim.

Continue with the full worksheet

The complete resource has 3 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-ks-13/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 1; Outcome 1; Key skills; bullet 13; p. 62.

The learning target is a concise paraphrase. Aspire reference: sm-u1-o1-ks-13. This is an internal identifier, not an official VCAA code.

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