Inverse rules, ranges and restrictions

Key knowledge | Free preview

Learning target: Understand inverse functions, the exchange of domain and range, restrictions needed for invertibility and the inverse graph.

An inverse calculation must include the allowed input set, not only an algebraic formula. Exponential and logarithmic inverses exchange positive-output restrictions and real-input domains. A quadratic needs a one-to-one branch before it can be inverted. Check both composition and domain compatibility, since a correct-looking rule can still describe the wrong branch.

Try the mathematics

Task 1. Find the inverse of $f(x)=3e^{(2x)}-1$ for $x\in R$. Give the domains and ranges of both functions and check the inverse algebraically.

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-u34-o1-kk-05/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Units 3–4; Outcome 1; Key knowledge; bullet 5; p. 101.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u34-o1-kk-05. This is an internal identifier, not an official VCAA code.

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