Exponential and logarithmic graph pairs

Key knowledge | Free preview

Learning target: Understand exponential and same-base logarithmic functions as inverses.

An exponential function with base greater than one is one-to-one, and its logarithm is the inverse. Reflect exact points to connect the graphs. Domain and range exchange, so the exponential's horizontal asymptote corresponds to the logarithm's vertical asymptote. Shifts change these features and must be applied to the whole rule.

Try the mathematics

Task 1. Sketch $f(x)=2^x$ and $g(x)=\log_2(x)$ together. Use three exact points for each and state their domains, ranges and asymptotes. Verify both inverse identities with their correct domains.

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-o1-kk-07/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Unit 2; Outcome 1; Key knowledge; bullet 7; p. 55.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u2-o1-kk-07. This is an internal identifier, not an official VCAA code.

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