Construct a reciprocal-function graph from the original function's graph

Key skills | Free preview

Learning target: Construct a reciprocal-function graph from the original function's graph.

Taking a reciprocal exchanges large magnitudes with small magnitudes and excludes every zero of the original function. The sign is preserved where the reciprocal exists. Algebraic simplification must retain original exclusions. Polynomial identities can then determine partial-fraction coefficients by equating corresponding powers.

Try the mathematics

Task 1. Starting with f(x)=x-2, construct y=1/f(x). State its domain, sign, asymptotes and two exact points. Explain what happens near the zero of f.

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-u2-o1-ks-12/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 2; Outcome 1; Key skills; bullet 12; p. 70.

The learning target is a concise paraphrase. Aspire reference: sm-u2-o1-ks-12. This is an internal identifier, not an official VCAA code.

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