Know functions, relations, sketch-graph forms and important features including linear asymptotes

Key knowledge | Free preview

Learning target: Know functions, relations, sketch-graph forms and important features including linear asymptotes.

A rational curve may need both algebra and calculus to reveal its structure. Polynomial division exposes an oblique asymptote; first and second derivatives identify turning behaviour and concavity. A discontinuity is not an inflection point, even if the concavity differs on opposite sides of its excluded input.

Try the mathematics

Task 1. Analyse $f(x)=(x^2+1)/(x-1)$: state its domain, intercepts and asymptotes; find stationary points and concavity. Use the results for a labelled hand sketch.

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-u34-o1-kk-03/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Units 3–4; Outcome 1; Key knowledge; bullet 3; p. 114.

The learning target is a concise paraphrase. Aspire reference: sm-u34-o1-kk-03. 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.