Derive a relation from distance formulas and a locus description, and draw its curve

Key skills | Free preview

Learning target: Derive a relation from distance formulas and a locus description, and draw its curve.

A locus specifies a set of points through a geometric condition. Translate the condition into distances before simplifying an equation, and check whether squaring has added unwanted points. A focus/directrix description, a constant distance and a sum of distances lead to different families of curves.

Try the mathematics

Task 1. Derive the locus of P=(x,y) equidistant from (2,0) and the line x=-2. Find its vertex, focus and directrix, and state why squaring is safe.

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-13/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 2; Outcome 1; Key skills; bullet 13; p. 70.

The learning target is a concise paraphrase. Aspire reference: sm-u2-o1-ks-13. This is an internal identifier, not an official VCAA code.

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