Understand coordinate and matrix representations of points and transformations

Key knowledge | Free preview

Learning target: Understand coordinate and matrix representations of points and transformations.

Represent a point by a column vector and multiply on the left by a transformation matrix. In a composition, the rightmost matrix acts first. Translations require an added vector in this two-coordinate representation. An inverse reverses the map only when the linear part is invertible.

Try the mathematics

Task 1. Let R=[[0,-1],[1,0]] and F=[[1,0],[0,-1]]. Describe each transformation. Apply rotation R then reflection F to (2,1), and compare with F then R.

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-kk-07/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 2; Outcome 1; Key knowledge; bullet 7; p. 69.

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

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