Solve geometry problems and prove theorems using vectors

Key skills | Free preview

Learning target: Solve geometry problems and prove theorems using vectors.

Vector proofs replace special drawings with algebra that applies to every admissible configuration. Define the position vectors or side vectors first and use a geometric criterion such as equal midpoints, a zero dot product or parallel scalar multiples. Keep the assumptions needed for the claimed shape explicit.

Try the mathematics

Task 1. A parallelogram has consecutive vertices O, A, C, B with position vectors 0,a,a+b,b. Prove that its diagonals bisect each other.

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-11/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 2; Outcome 1; Key skills; bullet 11; p. 70.

The learning target is a concise paraphrase. Aspire reference: sm-u2-o1-ks-11. 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.