Calculate scalar multiples, sums, differences and dot products of vectors

Key skills | Free preview

Learning target: Calculate scalar multiples, sums, differences and dot products of vectors.

A vector records magnitude and direction independently of where its arrow is drawn. Coordinates, basis notation and column matrices represent the same object. The dot product relates component calculation to angles and projection. Distinguish a signed scalar projection from the vector projection along a direction.

Try the mathematics

Task 1. Let a=(3,4), b=(1,-2). Express a in basis and column form, calculate |a|, a unit vector in its direction, 2a-b and a·b.

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-09/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 2; Outcome 1; Key skills; bullet 9; p. 70.

The learning target is a concise paraphrase. Aspire reference: sm-u2-o1-ks-09. 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.