Know sine and cosine rules in two and three dimensions, including plane angles and relevant congruence conditions

Key knowledge | Free preview

Learning target: Know sine and cosine rules in two and three dimensions, including plane angles and relevant congruence conditions.

The sine and cosine rules extend trigonometry beyond right triangles. Derivations use a shared perpendicular height or coordinate projection. In a dihedral-angle problem, take a section perpendicular to the line where the planes meet; the angle between the section lines is the angle between the planes.

Try the mathematics

Task 1. Two sides of a triangle are 3 cm and 4 cm with included angle 60°. Use the cosine rule to find the third side c. Derive that rule from coordinates and use the sine rule to find sin A opposite the 3 cm side.

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-06/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 2; Outcome 1; Key knowledge; bullet 6; p. 69.

The learning target is a concise paraphrase. Aspire reference: sm-u2-o1-kk-06. This is an internal identifier, not an official VCAA code.

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