Represent complex numbers and interpret arithmetic in Cartesian and polar forms

Key skills | Free preview

Learning target: Represent complex numbers and interpret arithmetic in Cartesian and polar forms.

Cartesian form makes real and imaginary parts explicit, while polar form displays modulus and argument. Multiplication adds arguments and multiplies moduli; division subtracts arguments and divides moduli. Argand diagrams provide a geometric check. State any argument convention, and recognise that angles differing by a full turn represent the same direction.

Try the mathematics

Task 1. For $z=1+i$ and $w=\sqrt{3}-i$, find their moduli and principal arguments in $(-\pi,\pi]$. Compute zw and z/w in polar form and interpret the geometry.

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-14/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 2; Outcome 1; Key skills; bullet 14; p. 70.

The learning target is a concise paraphrase. Aspire reference: sm-u2-o1-ks-14. 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.