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1.14 Powers and roots of complex numbers

Checklist

What you should know

By the end of this subtopic you should be able to:

- use De Moivre's theorem to find powers of complex numbers
- recall that a complex number in modulus—argument (polar) form can be represented by $z = r \text{ cis } (\theta + k2\pi)$, where $k = 0,\ 1,\ 2,\ \ldots$
- recall that $z^n = w$ has n solutions
- find complex roots
- describe the geometric patterns created by plotting nth roots on the Argand plane
- use the conjugate root theorem to find roots of polynomials with real coefficients.