Extending Polynomial Identities to Complex Numbers

Today's Standard

HSN.CN.C8 - (+) Extend polynomial identities to the complex numbers. For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.

Cues	Notes
What are polynomial identities?	Polynomial identities are equations that are true for all values of the variables.
How do complex numbers extend polynomial identities?	Complex numbers allow for the factoring of polynomials that do not have real roots.
What is the imaginary unit 'i'?	The imaginary unit 'i' is defined as the square root of -1.
How do you factor polynomials using complex numbers?	Factoring polynomials using complex numbers involves rewriting the polynomial in terms of complex roots.
What are some real-world applications of this concept?	This concept is used in fields such as engineering, physics, and computer science.

Summary

Extending polynomial identities to include complex numbers allows for the complete factoring of polynomials and has applications in various advanced fields.