Geometric Representation of Complex Numbers

Today's Standard

HSN.CN.B5 - (+) Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation. For example, (-1 + √3 i)3 = 8 because (-1 + √3 i) has modulus 2 and argument 120°.

Real-World Applications for this Standard

Electrical engineering: analyzing AC circuits; Quantum physics: describing quantum states; Signal processing: Fourier transforms; Computer graphics: fractal generation; Control systems: stability analysis

Today I Learned

Today, we learned about how to show adding, subtracting, multiplying, and flipping complex numbers on a special graph called the complex plane.

Common Stumbling Blocks

Some kids might think that working with complex numbers is very different from working with regular numbers. They also might mix up the distance and angle of a complex number with its real and imaginary parts.

Quiz Me

- What is a complex number?
- What are the two parts of a complex number?
- How do you add two complex numbers?
- What does the modulus of a complex number tell us?
- What is the argument of a complex number?

Help Me

Complex numbers can be used in real life, like in designing electric circuits or in computer graphics. Understanding how to add, subtract, multiply, and flip them on a graph can help solve these real-world problems.