



## Complex Number Conjugates and Quotients

### Today's Standard

HSN.CN.A3 - (+) Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.

### Real-World Applications for this Standard

Electrical engineering: analyzing AC circuits; Quantum physics: solving wave functions; Signal processing: manipulating frequency components; Finance: modeling complex financial instruments; Computer graphics: performing transformations

### Today I Learned

Today, we learned about complex numbers and how to find their conjugates. A conjugate changes the sign of the imaginary part of the number.

### Common Stumbling Blocks

Some students think that both parts of a complex number change when finding the conjugate. Others think the modulus, or size, of the number changes. Both ideas are wrong. Only the imaginary part changes, and the modulus stays the same.

### Quiz Me

- What is a complex number?
- How do you find the conjugate of a complex number?
- What part of a complex number changes when finding the conjugate?
- What stays the same when you find the conjugate?
- Why do we use conjugates?

### Help Me

Complex numbers are used in many real-world applications, like engineering and physics. Finding the conjugate helps simplify calculations, especially when dividing complex numbers.