Core Content

Cluster Title: Perform arithmetic operations with complex numbers.
Standard (Honors) N.CN.3: Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.
Concepts and Skills to Master
• Given a complex number, determine the conjugate. • Define the modulus of a complex number as the positive square root of the sum of the squares of the real and imaginary parts of a complex number. • Use conjugates to express quotients of complex numbers in standard form.

Supports for Teachers

Critical Background Knowledge	
• Complex numbers • Complex plane • Rationalizing denominators • $I^2 = -1$	
Academic Vocabulary	
conjugate, modulus, magnitude, complex plane	
Suggested Instructional Strategies	**Resources**
• Use properties of difference of two squares to find the modulus. • Relate the modulus visually using vectors.	Modulus Visual Representation http://demonstrations.wolfram.com/ComplexNumber/
Sample Formative Assessment Tasks	
Skill-Based Task: Write the following quotient in standard form: $\frac{2+3i}{3-5i}$	**Problem Task:** Determine if the following statement is true or false using complex conjugates: The modulus of z and the modulus of $\bar{z}$ are equal. Justify your answer with both verbal and algebraic arguments.

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