



Understanding Complex Numbers

Today's Standard

HSN.CN.A1 - Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.

Cues	Notes
What is the imaginary unit?	The imaginary unit i is defined as the square root of -1 .
How are complex numbers represented?	Complex numbers are represented as $a + bi$, where a and b are real numbers.
What are some real-world applications of complex numbers?	Complex numbers are used in electrical engineering, quantum physics, and signal processing.
How do you perform arithmetic operations with complex numbers?	Arithmetic operations with complex numbers include addition, subtraction, multiplication, and division.
What is a common misconception about complex numbers?	A common misconception is that i is a variable, but it is actually a constant value.

Summary

Complex numbers, represented as $a + bi$, are essential in advanced mathematics and many scientific fields. The imaginary unit i is a constant value defined as the square root of -1 . Understanding complex numbers allows for solving equations without real solutions and exploring real-world applications in engineering, physics, and more.