3.1: The Need for Complex Numbers

Alex L.

October 3, 2024

Def: A **complex number** is a number in the form $a+bi$, where $i = \sqrt{-1}$. a is called the **real term** of the complex number and bi is called the **imaginary term**.

The conventional representation of a complex number is the letter $z = a+bi$. Sometimes, for compactness, a complex number is written $z = (a, b)$, with the real, then imaginary component in a tuple.

Def: An **Argand diagram** is a 2D plot of complex numbers, with the horizontal axis corresponding to the real component of a complex number, and the vertical axis corresponding to an imaginary component.