Definition of Number Systems

$\mathbb{N} = \{x \mid x = 1 \text{ or } (\exists\, i,\, j \in \mathbb{N} : \, x = i + j)\}$

$\mathbb{Z} = \{a - b \mid a,\, b \in \mathbb{N}\}$

$\mathbb{Q} = \{\frac{a}{b} \mid a \in \mathbb{Z} \text{ and } b \in \mathbb{N}\}$

$\mathbb{R} = \{\lim_{n\to\infty} a(n) \mid a : \mathbb{N} \to \mathbb{Q} \text{ s.t. } \forall\, \epsilon > 0 : \, \exists\, \{N,\, n\} \subseteq \mathbb{N} \text{ s.t. } \forall\, n > N, |a(n) - a(N)| < \epsilon\}$

$\mathbb{C} = \{a + bi \mid a, b \in \mathbb{R} \text{ and } i = \sqrt{-1}\}$