

commas

***rational*s** (\mathbb{Q})

integers (\mathbb{Z})

whole



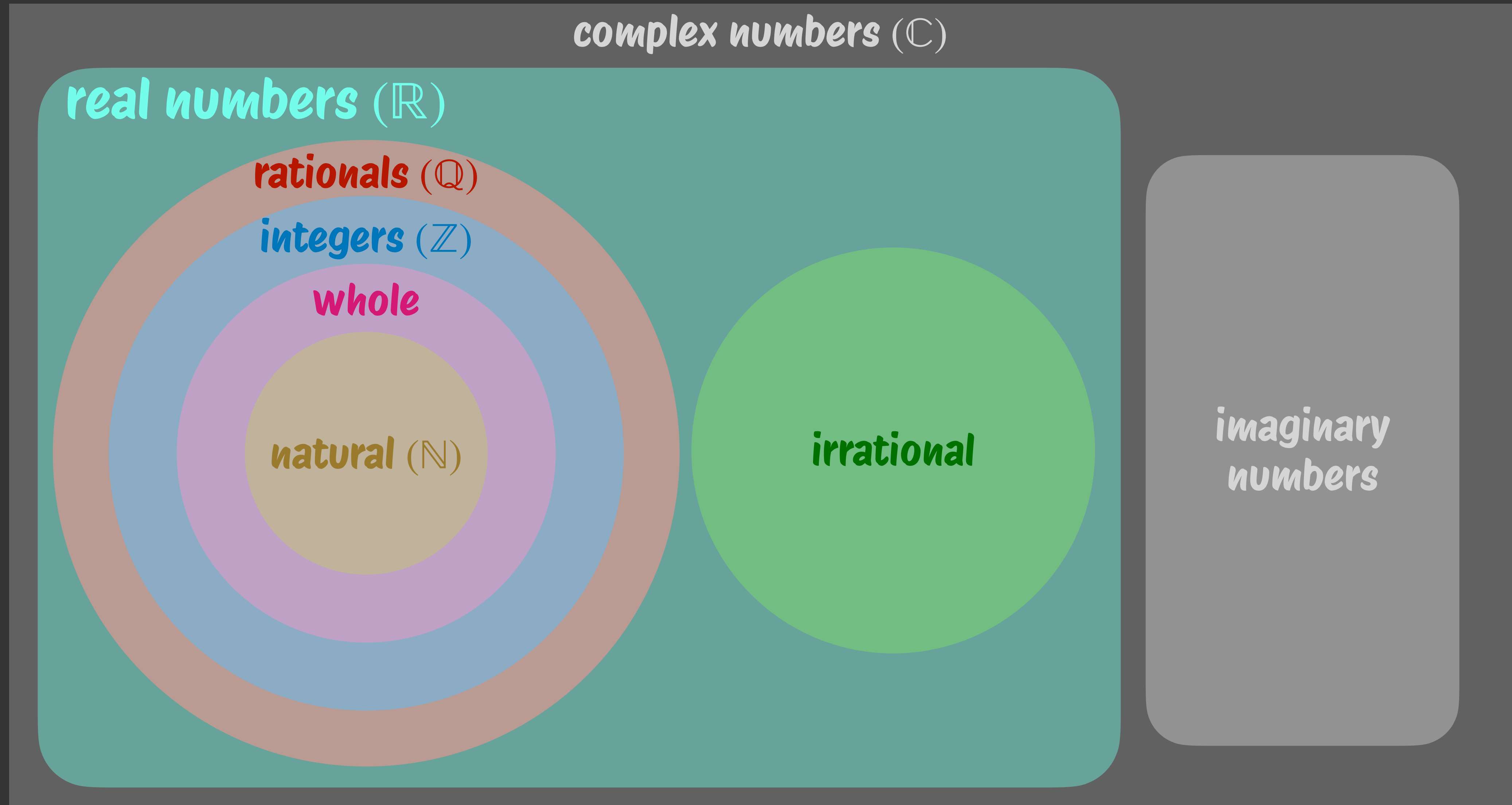
irrational

natural (\mathbb{N})

complex numbers (\mathbb{C})

N C Z C Q C R C C

common sets



$$\mathbb{N} \subset \mathbb{Z} \subset \mathbb{Q} \subset \mathbb{R} \subset \mathbb{C}$$

basic operators

- addition $+$
- subtraction $-$
- multiplication \times
- division. \div
- exponentiation x^a
- n th root $\sqrt[n]{x}$
- factorial $!$
- sum $\sum_i x_i$
- product $\prod_i x_i$

set operators

- difference $A \setminus B$
- complement A' or A^c or \bar{A} or $\neg A$
- intersection $A \cap B$
- union $A \cup B$
- mutually exclusive $A \cup B = \emptyset$
- Cartesian product.
 $A \times B = \{(a, b) \mid a \in A, b \in B\}$
- symmetric difference
 $A \oplus B = (A - B) \cup (B - A)$
- partition:
collection of subsets whose union forms the set