Math Formulas: Sets of Numbers

Definitions:

$\mathbb{N}$: Natural numbers

$\mathbb{N}_0$: Whole numbers

$\mathbb{Z}$: Integers

$\mathbb{Z}^+$: Positive integers

$\mathbb{Z}^-$: Negative integers

$\mathbb{Q}$: Rational numbers

$\mathbb{C}$: Complex numbers

Formulas:

Natural numbers (counting numbers)

1. $$\mathbb{N} = \{1, 2, 3, \dots\}$$

Whole numbers (counting numbers with zero)

2. $$\mathbb{N}_0 = \{0, 1, 2, 3, \dots\}$$

Integers (whole numbers and their opposites and zero)

3. $$\mathbb{Z} = \{\dots, -2, -1, 0, 1, 2, \dots\}$$

4. $$\mathbb{Z}^+ = \mathbb{N} = \{1, 2, \dots\}$$

5. $$\mathbb{Z}^- = \{\dots, -3, -2, -1\}$$

6. $$\mathbb{Z} = \mathbb{Z}^- \cup 0 \cup \mathbb{Z}$$

Irrational numbers: Non repeating and nonterminating integers

Real numbers: Union of rational and irrational numbers

Complex numbers:

7. $$\mathbb{C} = \{x + iy \mid x \in \mathbb{R} \ \ and \ \ y \in \mathbb{R}\}$$

8. $$\mathbb{N} \subset \mathbb{N}_0 \subset \mathbb{Z} \subset \mathbb{Q} \subset \mathbb{R} \subset \mathbb{C}$$