Symbols

Α α Alpha a volume\_up

Β β Beta b volume\_up

Γ γ Gamma g volume\_up

Δ δ Delta d volume\_up

Ε ε Epsilon e volume\_up

Ζ ζ Zeta z volume\_up

Η η Eta h volume\_up

Θ θ Theta th volume\_up

Ι ι Iota i volume\_up

Κ κ Kappa k volume\_up

Λ λ Lambda l volume\_up

Μ μ Mu m volume\_up

Ν ν Nu n volume\_up

Ξ ξ Xi x volume\_up

Ο ο Omicron o volume\_up

Π π Pi p volume\_up

Ρ ρ Rho r volume\_up

Σ σ,ς \* Sigma s volume\_up

Τ τ Tau t volume\_up

Υ υ Upsilon u volume\_up

Φ φ Phi ph volume\_up

Χ χ Chi ch volume\_up

Ψ ψ Psi ps volume\_up

Ω ω Omega o volume\_up

|  |  |  |  |
| --- | --- | --- | --- |
| **⋅** | and | and | *x* **⋅** *y* |
| ^ | caret / circumflex | and | *x* ^ *y* |
| & | ampersand | and | *x* & *y* |
| + | plus | or | *x* + *y* |
| ∨ | reversed caret | or | *x* ∨ *y* |
| | | vertical line | or | *x* | *y* |
| *x*' | single quote | not - negation | *x*' |
| *x* | bar | not - negation | *x* |
| ¬ | not | not - negation | ¬ *x* |
| ! | exclamation mark | not - negation | ! *x* |
| ⊕ | circled plus / oplus | exclusive or - xor | *x* ⊕ *y* |
| ~ | tilde | negation | ~ *x* |
| ⇒ | implies |  |  |
| ⇔ | equivalent | if and only if (iff) |  |
| ↔ | equivalent | if and only if (iff) |  |
| ∀ | for all |  |  |
| ∃ | there exists |  |  |
| ∄ | there does not exists |  |  |
| a∈A | element of, belongs to | set membership | A={3,9,14}, 3 ∈ A |
| x∉A | not element of | no set membership | A={3,9,14}, 1 ∉ A |
| (a,b) | ordered pair | collection of 2 elements |  |
| A×B | cartesian product | set of all ordered pairs from A and B |  |
| |A| | cardinality | the number of elements of set A | A={3,9,14}, |A|=3 |
| #A | cardinality | the number of elements of set A | A={3,9,14}, #A=3 |
| https://www.rapidtables.com/math/symbols/set_symbols/aleph-null.gif | aleph-null | infinite cardinality of natural numbers set |  |
| https://www.rapidtables.com/math/symbols/set_symbols/aleph-one.gif | aleph-one | cardinality of countable ordinal numbers set |  |
| Ø | empty set | Ø = { } | C = {Ø} |
| \mathbb{U} | universal set | set of all possible values |  |
| \mathbb{N}0 | natural numbers / whole numbers  set (with zero) | \mathbb{N}0 = {0,1,2,3,4,...} | 0 ∈ \mathbb{N}0 |
| \mathbb{N}1 | natural numbers / whole numbers  set (without zero) | \mathbb{N}1 = {1,2,3,4,5,...} | 6 ∈ \mathbb{N}1 |
| \mathbb{Z} | integer numbers set | \mathbb{Z} = {...-3,-2,-1,0,1,2,3,...} | -6 ∈ \mathbb{Z} |
| \mathbb{Q} | rational numbers set | \mathbb{Q} = {x | x=a/b, a,b∈\mathbb{Z}} | 2/6 ∈ \mathbb{Q} |
| \mathbb{R} | real numbers set | \mathbb{R} = {x | -∞ < x <∞} | 6.343434∈\mathbb{R} |
| \mathbb{C} | complex numbers set | \mathbb{C} = {z | z=a+bi, -∞<a<∞,      -∞<b<∞} | 6+2i ∈ \mathbb{C} |

**Symbol**. The **symbol** Z can be annotated to denote various sets, with varying usage amongst different authors: Z+, Z+ or Z> for the **positive integers**, Z≥ for non-**negative integers**, Z≠ for non-zero **integers**.