Index of notation

Future references are subject to change.

Notation	Meaning	Reference	Page
$x \in A$	x is an element of A	5.1.1	1
$x \notin A$	x is not an element of A	5.1.1	1
$\mathbb{N}$	set of all natural numbers (including 0)	5.1	1
$\mathbb{Z}$	set of all integers	5.1	1
$\mathbb{Q}$	set of all rational numbers	5.1	1
$\mathbb{R}$	set of all real numbers	5.1	1
$\mathbb{Z}^+$	set of all positive integers	5.1	1
$\mathbb{Z}^-$	set of all negative integers	5.1	1
$\mathbb{Z}_{\geqslant 0}$	set of all non-negative integers	5.1	1
$\{x_1, x_2, \ldots, x_n\}$	set whose only elements are $x_1, x_2, \ldots, x_n$	5.1.3	1
$\{x_1, x_2, x_3, \ldots\}$	set whose only elements are $x_1, x_2, x_3, \ldots$	5.1.3	1
$\{x \in U : P(x)\}$	set of all $x \in U$ such that $P(x)$ is true	5.1.5	2
$\{x \in U \mid P(x)\}$	set of all $x \in U$ such that $P(x)$ is true	5.1.6	2
$\varnothing$	empty set	5.1.15	3
$A \subseteq B$	A is a subset of B	5.1.16	3
$A \subsetneq B$	A is a proper subset of B	5.1.19	3
$\mathcal{P}(A)$	power set of A	5.2.1	4
$\lvert A \rvert$	cardinality of A	5.2.3	4
(x, y)	ordered pair consisting of x, y	5.2.6	4
$A \times B$	Cartesian product of A and B	5.2.8	4
$(x_1, x_2, \ldots, x_n)$	ordered n-tuple consisting of $x_1, x_2, \ldots, x_n$	5.2.11	4
$A_1 \times A_2 \times \cdots \times A_n$	Cartesian product of $A_1, A_2, \ldots, A_n$	5.2.13	4
A^n	$A \times A \times \cdots \times A$ with n-many A's	5.2.13	4
$A \cup B$	union of A and B	5.3.1	5
$A \cap B$	intersection of A and B	5.3.1	5
$A \setminus B$	complement of B in A	5.3.1	5
$\overline{B}$	complement of B	5.3.3	5
$f \colon A \to B$	f is a function from A to B	6.1.1	8
$f(x)$	the element that f assigns x to	6.1.1	8
$f \colon x \mapsto y$	f maps x to y	6.1.1	8
id_A	identity function on A	6.1.4	8
$\lvert x \rvert$	absolute value of x	6.1.6	9
$\lfloor x \rfloor$	floor of x	6.1.9	9
$\lceil x \rceil$	ceiling of x	6.1.9	9
$g \circ f$	g composed with f	6.1.22	10
$f(X)$	(setwise) image of X under f	6.2.1	12
$f^{-1}(Y)$	(setwise) preimage of Y under f	6.2.1	12
f^{-1}	inverse of f	6.2.17	14

Notation	Meaning	Reference	Page
$\mathrm{WFF}(\Sigma)$	set of all well-formed formulas over Σ (non-standard notation)	7.3.12	25
$\mathrm{WFF}^{+}(\Sigma)$	set of all positive well-formed formulas over Σ (non-standard notation)	7.3.16	26
$d \mid n$	d divides n	8.1.1	27
$d \operatorname{\underline{div}} n$	quotient when n is divided by d	8.1.17	28
$d \operatorname{\underline{mod}} n$	remainder when n is divided by d	8.1.17	28
$(a_\ell a_{\ell-1} \dots a_0)_b$	base-b representation of a positive integer	8.3.1	31
$\gcd(m, n)$	greatest common divisor of m and n	8.4.1	33
$a \equiv b \pmod{n}$	a is congruent to b modulo n	8.6.1	37
$x \; R \; y$	x is R related to y	9.1.1	42
$y \; R^{-1} \; x$	$x \; R \; y$	9.1.4	42
$[x]_R$	equivalence class of x with respect to R	9.2.10	43
A/R	$\{[x]_R : x \in A\}$	9.2.10	43

Index of named propositions

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