LIST OF SYMBOLS

$x \in A$	x is an element of A
$x \notin A$	x is not an element of A
$\mathbb{N}$	set of all natural numbers (including 0)
$\mathbb{Z}$	set of all integers
$\mathbb{Q}$	set of all rational numbers
$\mathbb{R}$	set of all real numbers
$\mathbb{Z}^+$	set of all positive integers
$\mathbb{Z}^-$	set of all negative integers
$\mathbb{Z}_{\geq 0}$	set of all non-negative integers
$\{x_1, x_2, \ldots, x_n\}$	set whose only elements are $x_1, x_2, \ldots, x_n$
$\{x_1, x_2, x_3, \ldots\}$	set whose only elements are $x_1, x_2, x_3, \ldots$
$\{x \in U : P(x)\}$	set of all $x \in U$ such that $P(x)$ is true
$\{x \in U \mid P(x)\}$	set of all $x \in U$ such that $P(x)$ is true
$\emptyset$	empty set
$A \subseteq B$	A is a subset of B
$A \subsetneq B$	A is a proper subset of B
$P(A)$	power set of A
$\|A\|$	cardinality of A
(x, y)	ordered pair consisting of x, y
$A \times B$	Cartesian product of A and B
$(x_1, x_2, \ldots, x_n)$	ordered n-tuple consisting of $x_1, x_2, \ldots, x_n$
$A_1 \times A_2 \times \cdots \times A_n$	Cartesian product of $A_1, A_2, \ldots, A_n$
A^n	$A \times A \times \cdots \times A$ with n-many A's
$A \cup B$	union of A and B
$A \cap B$	intersection of A and B
$A \setminus B$	complement of B in A
$\overline{B}$	complement of B

$f\colon A \to B$	f is a function from A to B
$f(x)$	the element that f assigns x to
$f\colon x \mapsto y$	f maps x to y
id_A	identity function on A
$\lvert x\rvert$	absolute value of x
$\lfloor x \rfloor$	floor of x
$\lceil x \rceil$	ceiling of x
$g \circ f$	g composed with f
$f(X)$	(setwise) image of X under f
$f^{-1}(Y)$	(setwise) preimage of Y under f
f^{-1}	inverse of f
$\sum_{i=m}^{n} a_i$	$a_m + a_{m+1} + a_{m+2} + \cdots + a_n$
$d \mid n$	d divides n
$d \textbf{ div } n$	quotient when n is divided by d
$d \textbf{ mod } n$	remainder when n is divided by d
$(a_\ell a_{\ell-1} \ldots a_0)_b$	base-b representation of a positive integer
$\gcd(m, n)$	greatest common divisor of m and n
$a \equiv b \pmod{n}$	a is congruent to b modulo n
xRy	x is R related to y
$yR^{-1}x$	xRy
$[x]_R$	equivalence class of x with respect to R
A/R	$\{[x]_R : x \in A\}$