Notations and symbols

$A := B$		A is defined by B ($B =: A$ as well).
$\forall \cdots,$		For any $\cdots$,
$\exists \cdots,$		There exists $\cdots$,
$P \implies Q$		P implies Q (logical inclusion).
$P \iff Q$		P and Q are equivalent.
s.t.		such that
$\square$		end of proof.
$\mathbb{N}$	:=	$\{0, 1, 2, \ldots\}$, 0 and natural numbers.
$\mathbb{N}^+$	:=	$\{1, 2, \ldots\}$, the set of all positive integers.
$\mathbb{Z}$	:=	$\{\ldots, -2, -1, 0, 1, 2, \ldots\}$, the set of all integers.
$\mathbb{R}$	:=	the set of all real numbers.
$\mathbb{C}$	:=	the set of all complex numbers.
$\lfloor t \rfloor$	:=	the largest integer not exceeding real number t (rounding down).
$\lceil t \rceil$	:=	the smallest integer no less than real number t (rounding up).
$\mathbf{1}_B(x)$	:=	the indicator function of set B $= \begin{cases} 1 & (x \in B), \\ 0 & (x \notin B). \end{cases}$
$\#B$	:=	the number of elements of set B.
2^B	:=	the set of all subsets of B.
B^c	:=	the complementary set to B.
$A \setminus B$	:=	$A \cap B^c$.
$\emptyset$	:=	the empty set.
Pr	:=	probability (when no probability space is explicitly specified).
$\mathbf{E}[X]$	:=	the mean (expectation) of random variable X.
$\mathbf{E}[X; B]$	:=	$\mathbf{E}[X\mathbf{1}_B]$.
$\mathbf{V}[X]$	:=	the variance of random variable X.
$\mathcal{N}(m, \sigma^2)$	:=	the normal (Gaussian) distribution with mean m and variance σ^2.
$O(f(n))$	:=	Landau's symbol, $g(n) = O(f(n)) \iff \exists c > 0$ s.t. $\lvert g(n)\rvert \le cf(n)$.
$\mathtt{0}$	:=	zero. This is used mainly in Chapter 6 to distinguish the number "0" from the letter "O".
$a \bmod N$	:=	a modulo N, the remainder, on division of a by N. When $N = 1$, it means the fractional part of a.