NOTATION FOR STANDARD OBJECTS

It is clearly useful to have standard symbols for standard sets which appear repeatedly, such as the empty set and the basic number systems of mathematics. We shall some frequently used conventions for using "blackboard bold letters" to denote these basic number systems, and we shall use the standard symbols for the empty set.

Ø	*empty set*
$\mathbb{N}$	*natural numbers =* *nonnegative integers*
$\mathbb{Z}$	*(signed) integers*
$\mathbb{Q}$	*rational numbers*
$\mathbb{R}$	*real numbers*
$\mathbb{C}$	*complex numbers*

Similarly, we shall use $\mathbb{R}^n$ to denote the usual analytic representation of **Euclidean** or

Cartesian n – [*dimensional*] **space** in terms of coordinates $(x_1, \dots , x_n)$, where the x_i's are all real numbers.

As in calculus, if **a** and **b** are real numbers or $\pm\infty$ with **a < b**, we define **intervals** as follows:

Notation	Type of interval	Defining inequalties
(a, b)	open	**a < x < b**
[a, b]	closed	**a ≤ x ≤ b**
(a, b]	half open	**a < x ≤ b**
[a, b)	half open	**a ≤ x < b**