

Throughout the course, the following notation will be used.

Notation		Definition in book
$\mathbb{N}$	the set of all natural numbers, $\{1, 2, 3, \dots\}$	page 2
$\mathbb{Z}$	the set of all integers, $\{0, 1, -1, 2, -2, 3, -3, \dots\}$	page 3
$\mathbb{Q}$	the set of all rational numbers	page 3
$\mathbb{R}$	the set of all real numbers	page 3
$\in$	is an element of the set	
$\neq$	not equal	

The introduction of such notation is motivated by laziness. Here is an example of how this notation reduces writing. A rational number is one that can be written as a fraction formed from two integers. To be precise,

Definition 1 A number x is **rational** if there exist some integers a and b , b not zero, such that $x = \frac{a}{b}$.

The same definition, using the new notation is:

Definition 2 A number x is **rational** if there exist $a, b \in \mathbb{Z}$, $b \neq 0$, such that $x = \frac{a}{b}$.