

Definitions

Term	Notation Example(s)	We say in English
n -tuple	(x_1, x_2, x_3) $(3, 4)$	The 3-tuple of x_1 , x_2 , and x_3 The 2-tuple or ordered pair of 3 and 4
sequence	x_1, \dots, x_n x_1, \dots, x_n where $n = 0$ x_1, \dots, x_n where $n = 1$ x_1, \dots, x_n where $n = 2$ x_1, x_2	A sequence x_1 to x_n An empty sequence A sequence containing just x_1 A sequence containing just x_1 and x_2 in order A sequence containing just x_1 and x_2 in order
set		Unordered collection of objects. The set of ...
all integers	\mathbb{Z}	The (set of all) integers (whole numbers including negatives, zero, and positives)
all positive integers	\mathbb{Z}^+	The (set of all) strictly positive integers
all natural numbers	\mathbb{N}	The (set of all) natural numbers. Note: we use the convention that 0 is a natural number.
roster method	$\{43, 7, 9\}$ $\{9, \mathbb{N}\}$	The set whose elements are 43, 7, and 9 The set whose elements are 9 and \mathbb{N}
set builder notation	$\{x \in \mathbb{Z} \mid x > 0\}$ $\{3x \mid x \in \mathbb{Z}\}$	The set of all x from the integers such that x is greater than 0 The set of all integer multiples of 3. Note: we use the convention that writing two numbers next to each other means multiplication.
function definition	$f(x) = x + 4$	Define f of x to be $x + 4$
function application	$f(7)$ $f(z)$ $f(g(z))$	f of 7 or f applied to 7 or the image of 7 under f f of z or f applied to z or the image of z under f f of g of z or f applied to the result of g applied to z
absolute value	$ -3 $	The absolute value of -3
square root	$\sqrt{9}$	The non-negative square root of 9
summation notation	$\sum_{i=1}^n i$ $\sum_{i=1}^n i^2 - 1$	The sum of the integers from 1 to n , inclusive The sum of $i^2 - 1$ (i squared minus 1) for each i from 1 to n , inclusive
quotient, integer division	$n \text{ div } m$	The (integer) quotient upon dividing n by m ; informally: divide and then drop the fractional part
modulo, remainder	$n \text{ mod } m$	The remainder upon dividing n by m