Definitions

Term	Notation Example(s)	We say in English
sequence	x_1, \ldots, x_n	A sequence x_1 to x_n
summation	x_1, \dots, x_n $\sum_{i=1}^n x_i \text{ or } \sum_{i=1}^n x_i$	The sum of the terms of the sequence x_1 to x_n
all reals	\mathbb{R}	The (set of all) real numbers (numbers on the number line)
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	N	The (set of all) natural numbers. Note : we use the convention that 0 is a natural number.
piecewise rule definition function application	$f(x) = \begin{cases} x & \text{if } x \ge 0 \\ -x & \text{if } x < 0 \end{cases}$ $f(7)$ $f(z)$ $f(g(z))$	Define f of x to be x when x is nonnegative and to be $-x$ when x is negative f of f or f applied to f or the image of f under f of f or f applied to f or the image of f under f of f of f of f of f of f applied to the result of f applied to f
absolute value square root	$\begin{array}{c} -3 \\ \sqrt{9} \end{array}$	The absolute value of -3 The non-negative square root of 9

Definitions

Term	Notation Example(s)	We say in English
sequence	x_1,\ldots,x_n	A sequence x_1 to x_n
summation	x_1, \dots, x_n $\sum_{i=1}^n x_i \text{ or } \sum_{i=1}^n x_i$	The sum of the terms of the sequence x_1 to x_n
all reals	\mathbb{R}	The (set of all) real numbers (numbers on the number line)
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	N	The (set of all) natural numbers. Note : we use the convention that 0 is a natural number.
piecewise rule definition	$f(x) = \begin{cases} x & \text{if } x \ge 0 \\ -x & \text{if } x < 0 \end{cases}$	Define f of x to be x when x is nonnegative and to be $-x$ when x is negative
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	√ 9	The non-negative square root of 9