## 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. <b>Note</b> : we use the convention that 0 is a natural number.
piecewise rule definition function application	$f(x) = \begin{cases} x & \text{if } x \ge 0 \\ -x & \text{if } x < 0 \end{cases}$ $f(7)$	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 $f$
Tunction application	$f(z) \\ f(g(z))$	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