

# Definitions

Term	Notation	Example(s)	We say in English ...
sequence	$x_1, \dots, x_n$		A sequence $x_1$ to $x_n$
	$x_1, \dots, x_n$	where $n = 0$	An empty sequence
	$x_1, \dots, x_n$	where $n = 1$	A sequence containing just $x_1$
	$x_1, \dots, x_n$	where $n = 2$	A sequence containing just $x_1$ and $x_2$ in order
	$x_1, x_2$		A sequence containing just $x_1$ and $x_2$ in order
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. <b>Note:</b> we use the convention that 0 is a natural number.
function rule definition	$f(x) = x + 4$		Define $f$ of $x$ to be $x + 4$
piecewise rule definition	$f(x) = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$		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 <b>or</b> $f$ applied to 7 <b>or</b> the image of 7 under $f$ $f$ of $z$ <b>or</b> $f$ applied to $z$ <b>or</b> the image of $z$ under $f$ $f$ of $g$ of $z$ <b>or</b> $f$ 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