

Definitions

| Term | Notation Example(s) | We say in English |
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| 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 |