

Range of a function

The *range* of a function is the set of its possible output values.

For example, for the function $f(x) = x^2$ on the domain of all real numbers ($x \in \mathbb{R}$), the range is the non-negative real numbers, which can be written as $f(x) \geq 0$ (or $[0, \infty)$ using [interval notation](#)).

The range of the function $f(x) = \sin x$, $x \in \mathbb{R}$ is the real numbers between -1 and 1 , that is $-1 \leq f(x) \leq 1$ (or $[-1, 1]$ using interval notation).

The domain of the function can affect the range so, for example, the range of the function $g(x) = \sin x$, $x \in \mathbb{R}$, $0 < x < \frac{\pi}{2}$ is the real numbers between 0 and 1 , that is $0 < g(x) < 1$ (or $(0, 1)$ using interval notation).