

Library of Special Functions

FUNCTION	GRAPH OF FUNCTION	DOMAIN (SET NOTATION)	DOMAIN (INTERVAL NOTATION)	RANGE (SET NOTATION)	RANGE (INTERVAL NOTATION)
Constant $f(x) = c$		$\{x x \in \mathbb{R}\}$	$(-\infty, \infty)$	$\{y y = c\}$	$\{c\}$
Identity $f(x) = x$		$\{x x \in \mathbb{R}\}$	$(-\infty, \infty)$	$\{y y \in \mathbb{R}\}$	$(-\infty, \infty)$
Quadratic $f(x) = x^2$		$\{x x \in \mathbb{R}\}$	$(-\infty, \infty)$	$\{y y \geq 0\}$	$[0, \infty)$
Square Root $f(x) = \sqrt{x}$		$\{x x \geq 0\}$	$[0, \infty)$	$\{y y \geq 0\}$	$[0, \infty)$
Cubic $f(x) = x^3$		$\{x x \in \mathbb{R}\}$	$(-\infty, \infty)$	$\{y y \in \mathbb{R}\}$	$(-\infty, \infty)$
Cube Root $f(x) = \sqrt[3]{x}$		$\{x x \in \mathbb{R}\}$	$(-\infty, \infty)$	$\{y y \in \mathbb{R}\}$	$(-\infty, \infty)$

FUNCTION	GRAPH	DOMAIN	DOMAIN	RANGE	RANGE
Absolute Value $f(x) = x $		$\{x x \in \mathbb{R}\}$	$(-\infty, \infty)$	$\{y y \geq 0\}$	$[0, \infty)$
Reciprocal $f(x) = \frac{1}{x}$		$\{x x \in \mathbb{R}, x \neq 0\}$	$(-\infty, 0) \cup (0, \infty)$	$\{y y \neq 0\}$	$(-\infty, 0) \cup (0, \infty)$
Greatest Integer $f(x) = [x]$		$\{x x \in \mathbb{R}\}$	$(-\infty, \infty)$	$\{y y \in \mathbb{Z}\}$	$\{\dots, -2, -1, 0, 1, 2, \dots\}$
Exponential $f(x) = b^x$		$\{x x \in \mathbb{R}\}$	$(-\infty, \infty)$	$\{y y > 0\}$	$(0, \infty)$
Logarithm $f(x) = \log_b x$		$\{x x > 0\}$	$(0, \infty)$	$\{y y \in \mathbb{R}\}$	$(-\infty, \infty)$
Natural Log $f(x) = \ln x$		$\{x x > 0\}$	$(0, \infty)$	$\{y y \in \mathbb{R}\}$	$(-\infty, \infty)$