

Parent Functions Chart

A printable parent functions chart with graphs, equations, domains, ranges, and identifying features for nine essential function families.

Linear

$f(x)=x$



Parent shape · key features on page

Quadratic

$f(x)=x^2$



Parent shape · key features on page

Cubic

$f(x)=x^3$



Parent shape · key features on page

Absolute value

$f(x)=|x|$



Parent shape · key features on page

Square root

$f(x)=\sqrt{x}$



Parent shape · key features on page

Cube root

$f(x)=\sqrt[3]{x}$



Parent shape · key features on page

Reciprocal

$f(x)=1/x$



Parent shape · key features on page

Exponential

$f(x)=2^x$



Parent shape · key features on page

Logarithmic

$f(x)=\log_2 x$



Parent shape · key features on page

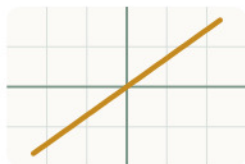
Parent Functions Chart

01 Polynomial and piecewise shapes

These are defined for every real input.

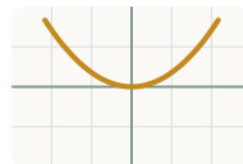
Linear

$$f(x)=x; D: \mathbb{R}, R: \mathbb{R}$$



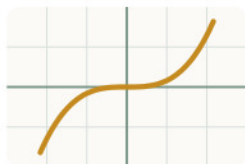
Quadratic

$$f(x)=x^2; D: \mathbb{R}, R: [0, \infty)$$



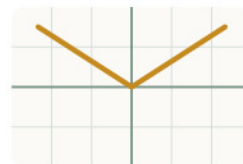
Cubic

$$f(x)=x^3; D: \mathbb{R}, R: \mathbb{R}$$



Absolute value

$$f(x)=|x|; D: \mathbb{R}, R: [0, \infty)$$



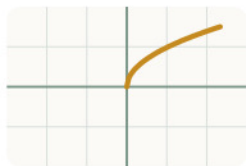
Parent Functions Chart

02 Radical and rational shapes

Watch endpoints and excluded inputs.

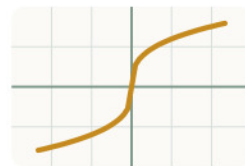
Square root

$$f(x) = \sqrt{x}; \text{ D: } [0, \infty), \text{ R: } [0, \infty)$$



Cube root

$$f(x) = \sqrt[3]{x}; \text{ D: } \mathbb{R}, \text{ R: } \mathbb{R}$$



Reciprocal

$$f(x) = 1/x; x \neq 0, y \neq 0$$



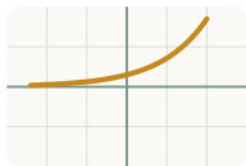
Parent Functions Chart

03 Inverse growth families

Exponential and logarithmic functions are inverses.

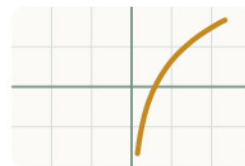
Exponential

$$f(x) = b^x; D: \mathbb{R}, R: (0, \infty)$$



Logarithmic

$$f(x) = \log_{\beta} x; D: (0, \infty), R: \mathbb{R}$$



Parent Functions Chart

HOW TO REMEMBER IT

Identify the shape before reading the shifts

1

Lines have constant rate of change; parabolas have a turning point.

2

Absolute value makes a V; square root begins at an endpoint.

3

Reciprocal, exponential, and logarithmic parents have asymptotes.