

3.3A Basic Functions

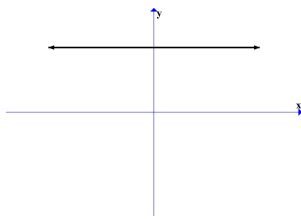
▼ Basic Functions

Basic functions represent a collection of functions that have similar graphs.

▼ Types of Basic Functions

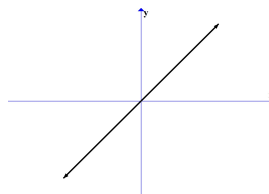
Constant:

$$f(x) = c$$



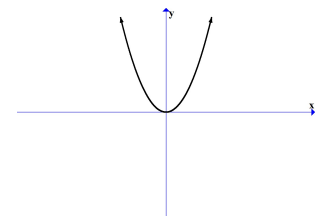
Identity:

$$f(x) = x$$



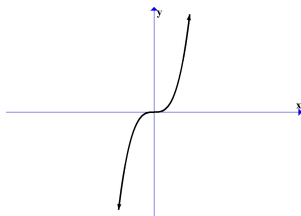
Square:

$$f(x) = x^2$$



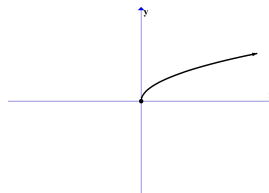
Cube:

$$f(x) = x^3$$



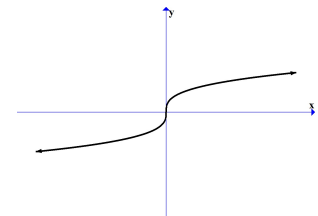
Square Root:

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



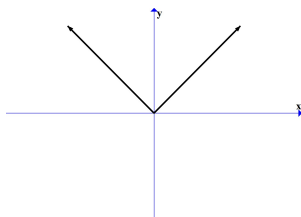
Cube Root:

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



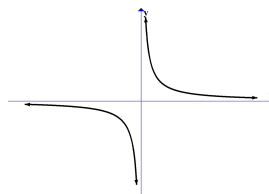
Absolute Value:

$$f(x) = |x|$$



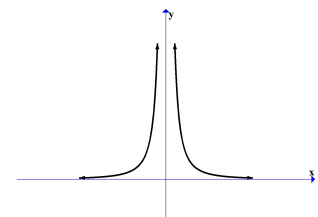
Reciprocal:

$$f(x) = \frac{1}{x}$$



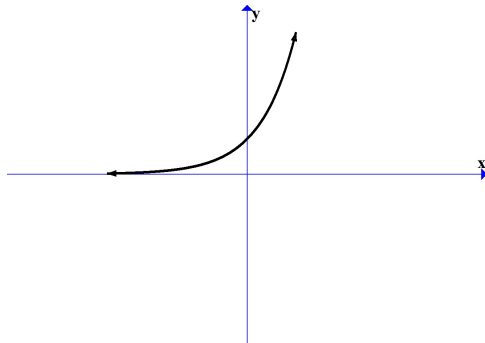
Reciprocal Squared:

$$f(x) = \frac{1}{x^2}$$



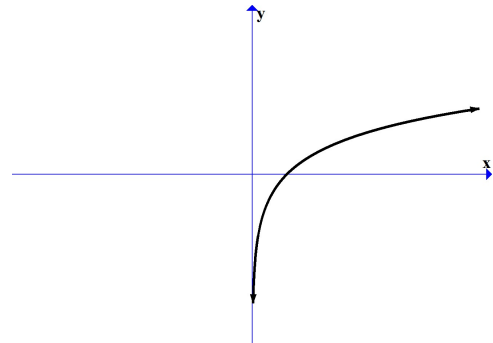
Exponential Base e:

$$f(x) = e^x$$



Logarithmic Base e:

$$f(x) = \ln x$$



▼ Examples

▼ Example 1: Study the function $f(x) = x^2$

Equation: _____

Function notation: _____

Domain: _____

Range: _____

Interval(s) of Increase: _____

Interval(s) of Decrease: _____

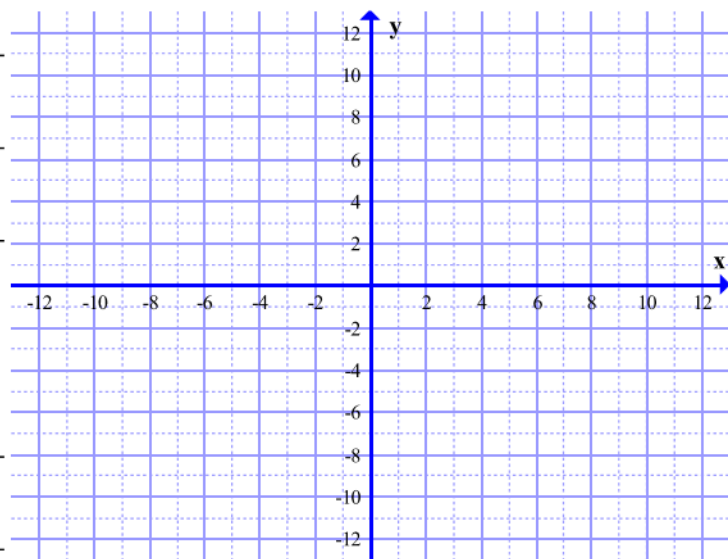
Interval(s) of Constant: _____

Even or Odd or Neither

Relative Minimum: _____

Relative Maximum: _____

X	Y
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▼ Example 2: Study the function $f(x) = \sqrt{x}$

Equation: _____

Function notation: _____

Domain: _____

Range: _____

Interval(s) of Increase: _____

Interval(s) of Decrease: _____

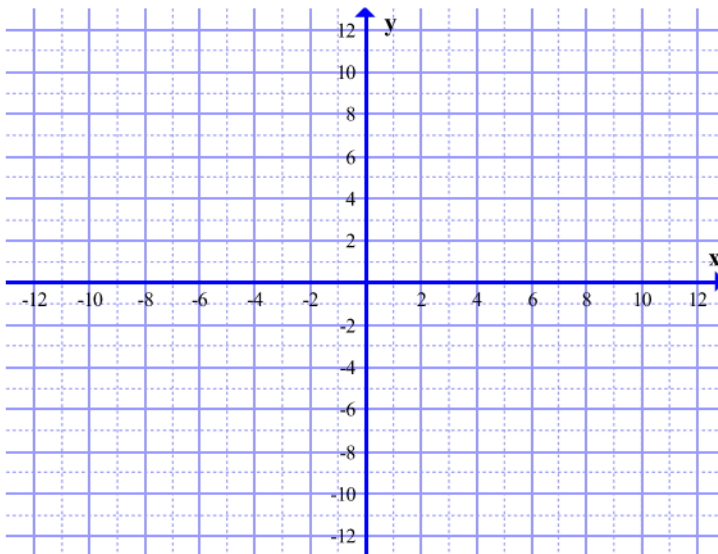
Interval(s) of Constant: _____

Even or Odd or Neither

Relative Minimum: _____

Relative Maximum: _____

X	Y



▼ Example 3: Study the function $f(x) = \sqrt[3]{x}$

Equation: _____

Function notation: _____

Domain: _____

Range: _____

Interval(s) of Increase: _____

Interval(s) of Decrease: _____

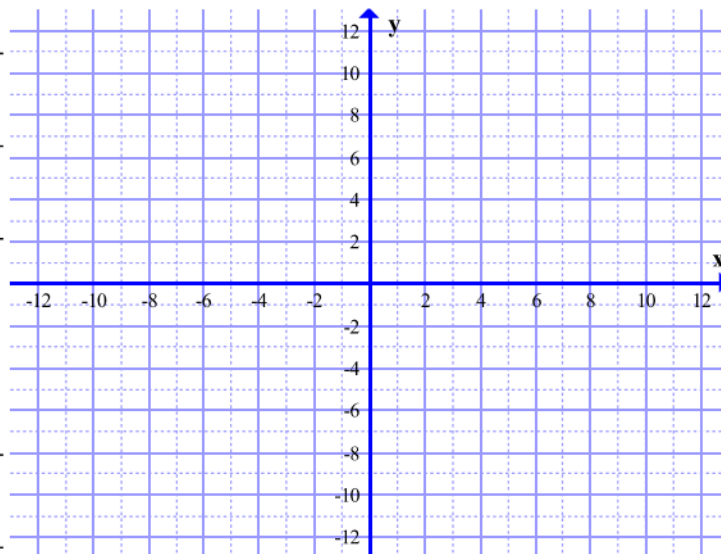
Interval(s) of Constant: _____

Even or Odd or Neither

Relative Minimum: _____

Relative Maximum: _____

X	Y



▼ Example 4: Study the function $f(x) = \frac{1}{x}$

Equation: _____

Function notation: _____

Domain: _____

Range: _____

Interval(s) of Increase: _____

Interval(s) of Decrease: _____

Interval(s) of Constant: _____

Even or Odd or Neither: _____

Relative Minimum: _____

Relative Maximum: _____

X	Y

