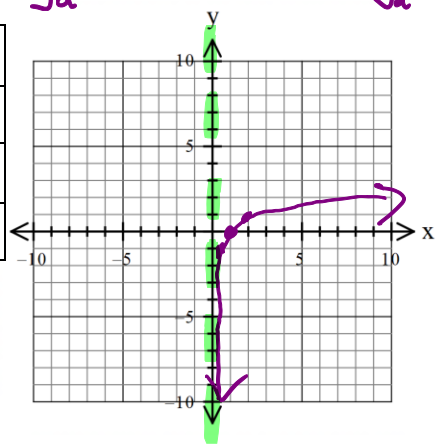
Parent Functions #9

Name of Graph: logarithm

Equation: $y = \log_a x$ or $f(x) = \log_a x$

x	$f(x)$
$\frac{1}{a}$	-1
1	0
a	1



a = base

$\log_2 x$

Key Features

Domain: $(0, \infty)$

Range: $(-\infty, \infty)$

x-intercept(s): $(1, 0)$

y-intercept: none

Increasing: $(0, \infty)$

Decreasing: N/A

Constant: N/A

Positive: $(1, \infty)$

Negative: $(0, 1)$

Maximums /Minimums N/A

Symmetry: N/A

End Behavior:

$\lim_{x \to 0} f(x) = -\infty$

$\lim_{x \to \infty} f(x) = \infty$

Asymptote: $x = 0$ $x = h$

asymptote changes if there is an h translation right + left

transformation eq.

$f(x) = b \log_a(c(x-h)) + k$

$\log_e$ = natural log = ln

$\log_{10}$ = log = common log

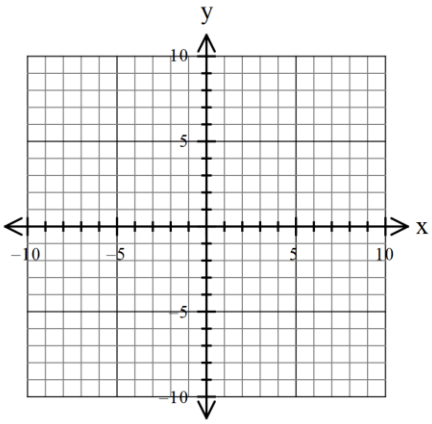
inverse function = exponential

Parent Functions #9

Name of Graph: _____

Equation: _____

x	$f(x)$



Key Features

Domain:

Range:

x-intercept(s):

y-intercept:

Increasing:

Decreasing:

Constant:

Positive:

Negative:

Maximums /Minimums

Symmetry:

End Behavior:

$\lim_{x \to -\infty} f(x) =$

$\lim_{x \to \infty} f(x) =$

Asymptote: _____

Steps for solving a logarithmic equation:

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