Name _____

Reflections of Functions (Horizontal and Vertical)

Date _____ Period _____

Given the parent function
$y = f(x)$,

if $a < 0$; vertical reflection over x-axis

$$y = a \cdot f(bx)$$

if $b < 0$; horizontal reflection over the y-axis

a and b can cause a vertical or horizontal reflection of $f(x)$

Given the parent function
$y = f(x)$,

Given the following functions, determine the value of a and b.

$y = -f(x)$

$y = f(-x)$

Given the parent function
$y = f(x)$,

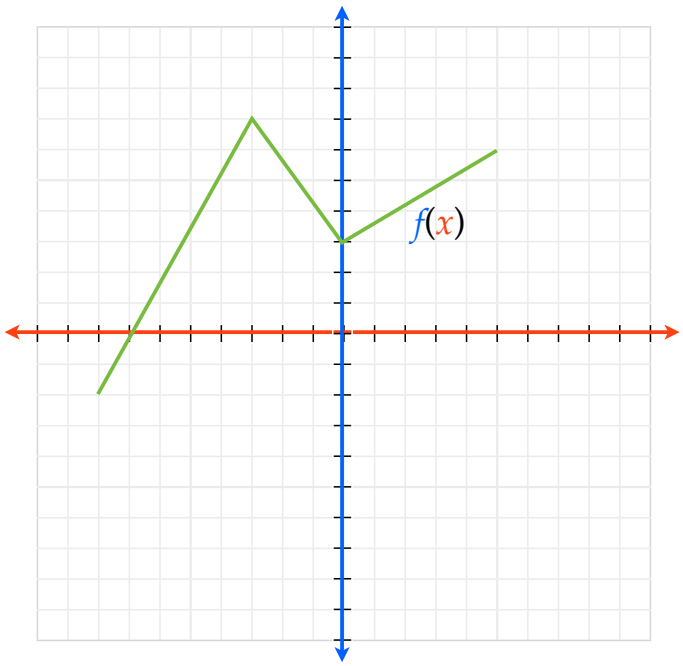
Given the following functions, determine the value of a and b.

$y = -x^2$ $y = (-x)^2$ $y = -|x|$ $y = \sqrt{-x}$

Graphing functions with reflections

Given the parent function
$y = f(x)$,

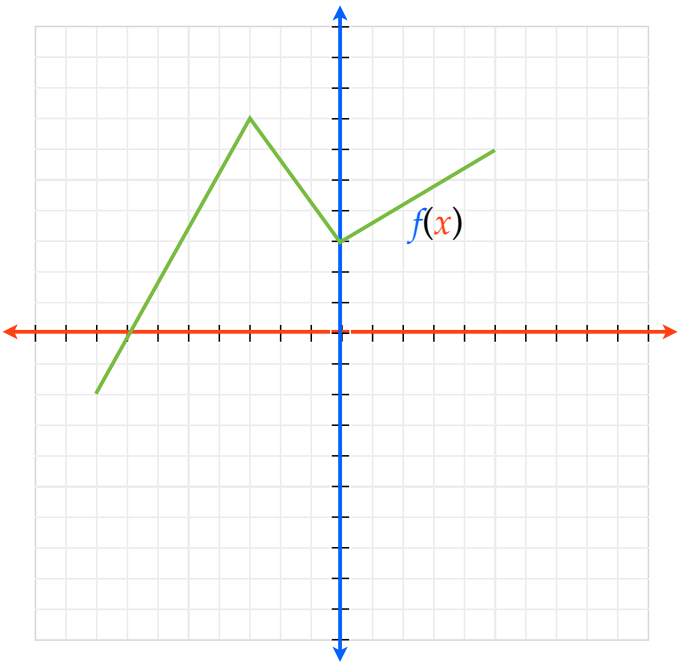
Graph: $y = -f(x)$



Graphing functions with reflections

Given the parent function
$y = f(x)$,

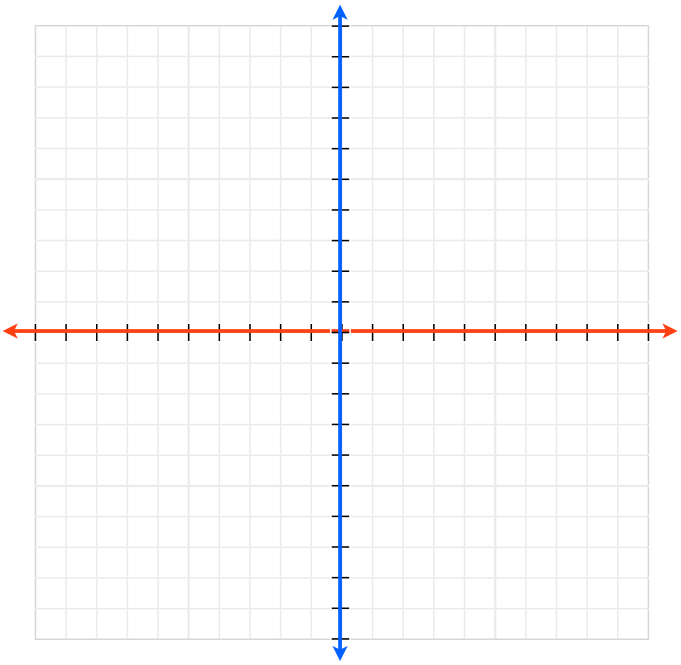
Graph: $y = f(-x)$



Graphing functions with reflections

Given the quadratic parent function
$y = x^2$

Graph: $y = -x^2$

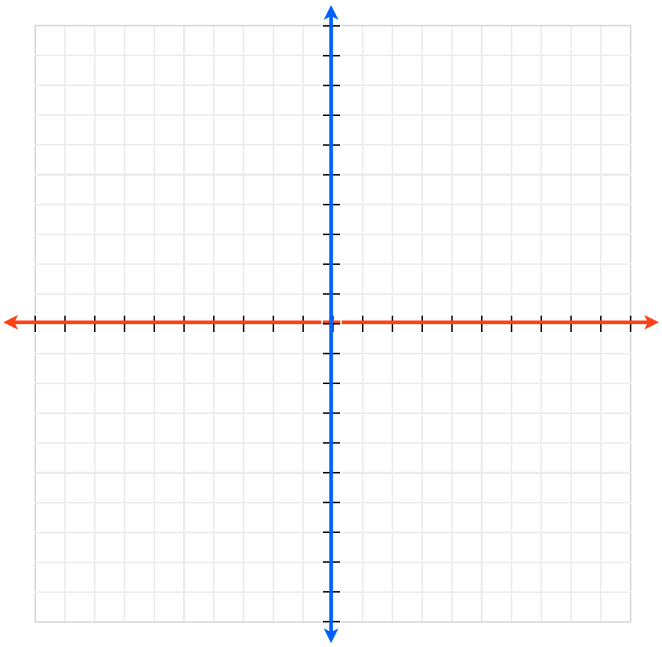


Graphing functions with reflections

Given the square root parent function

$y = \sqrt{x}$

Graph: $y = \sqrt{-x}$



Given the parent function

$y = f(x)$,

if $a < 0$; vertical reflection over x-axis

$$y = a \cdot f(bx)$$

if $b < 0$; horizontal reflection over the y-axis

a and b can cause a vertical or horizontal reflection of $f(x)$