

Given the parent function

$$y = f(x),$$

h gives the horizontal translation
if $h > 0$; move right, if $h < 0$; move left

$$y = f(x - h) + k$$

k gives the vertical translation
if $k > 0$; move up, if $k < 0$; move down

h and k will cause a horizontal and vertical translation of $f(x)$

Given the parent function

$$y = f(x),$$

Given the following functions, determine the value of h and k .

$$y = f(x - 5) + 7$$

$$y = f(x + 2) - 4$$

$$y = f(x - 8) - 1$$

$$y = f(x) + 1$$

Given the parent function

$$y = f(x),$$

Given the following functions, determine the value of h and k .

$$y = (x + 6) - 4$$

$$y = (x - 3)^2 + 1$$

$$y = |x + 1| + 8$$

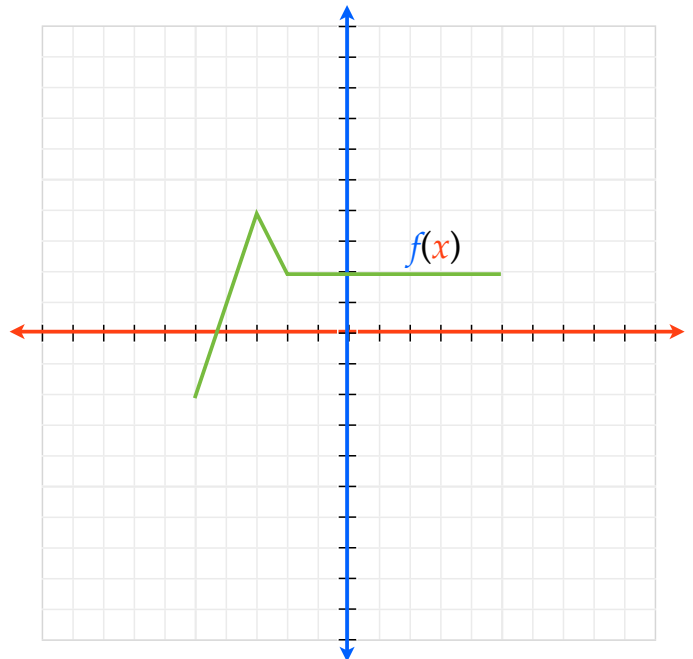
$$y = \sqrt{x - 4} - 5$$

Graphing functions with translations

Given the parent function

$$y = f(x),$$

Graph: $y = f(x + 2) - 5$

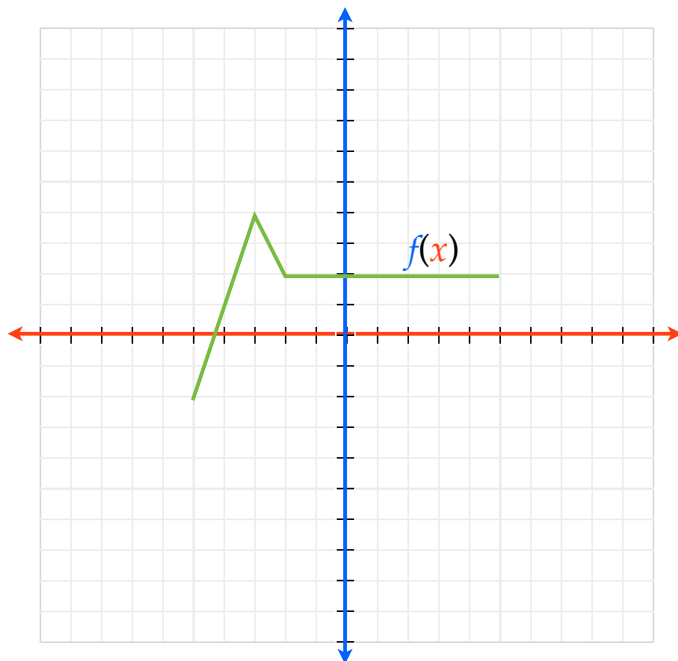


Graphing functions with translations

Given the **parent function**

$$y = f(x),$$

Graph: $y = f(x - 4) + 6$

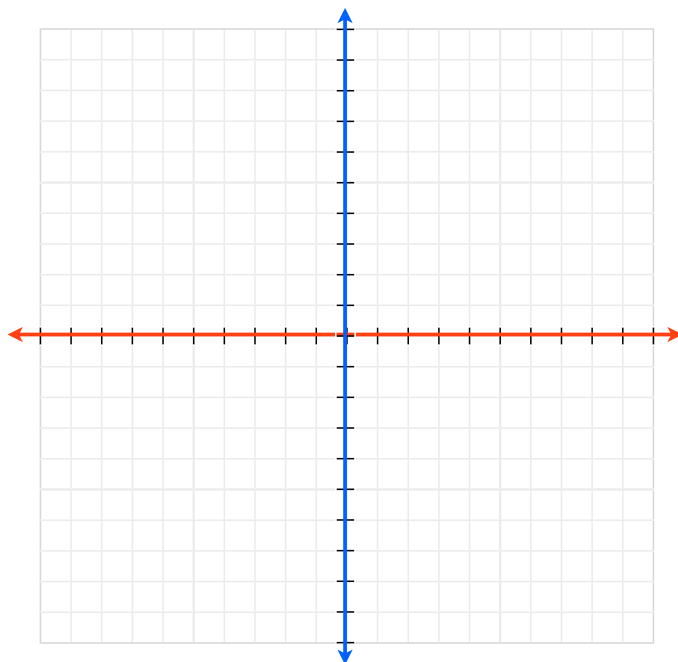


Graphing functions with translations

Given the **quadratic parent function**

$$y = x^2$$

Graph: $y = (x - 5)^2 - 1$

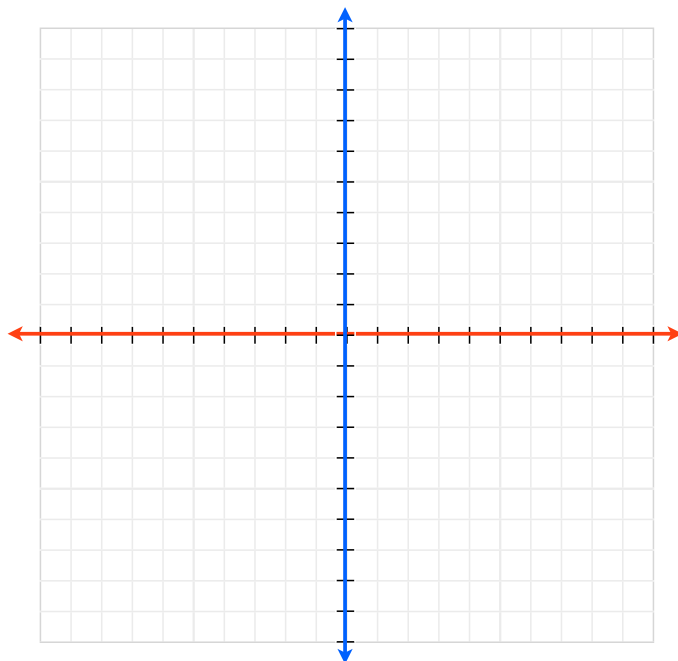


Graphing functions with translations

Given the absolute value parent function

$$y = |x|$$

Graph: $y = |x + 4| + 2$

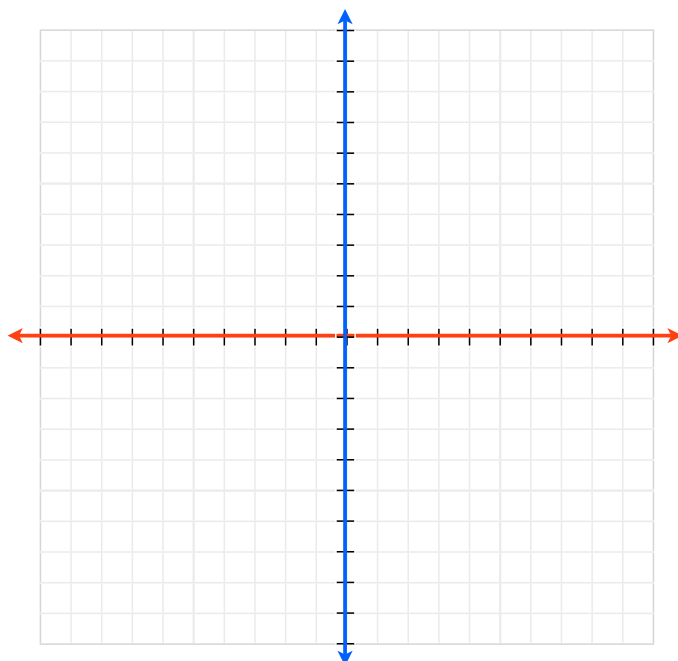


Graphing functions with translations

Given the square root parent function

$$y = \sqrt{x}$$

Graph: $y = \sqrt{x} - 4$



Given the parent function

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k gives the vertical translation
if $k > 0$; move up, if $k < 0$; move down

h and k will cause a horizontal and vertical translation of $f(x)$