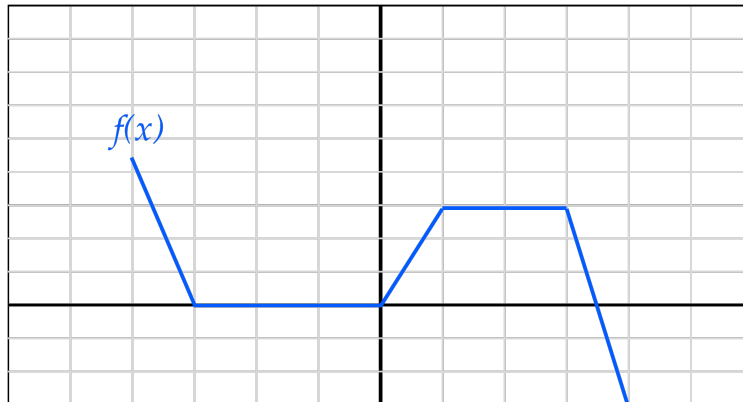


Function Translation

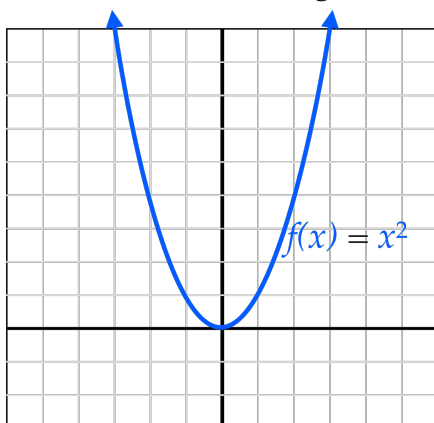
Moving a function up, down, left or right...



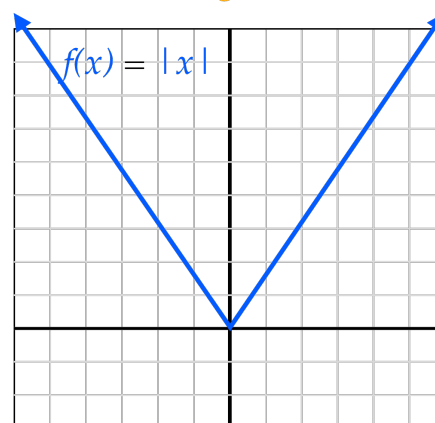
Notice: the basic shape of the function does not change with translation.

Function Translation

Moving a function up, down, left or right...



Quadratic Function



Absolute Value Function

Notice: the basic shape of the function does not change with translation.

Function Translation

Moving a function up, down, left or right...

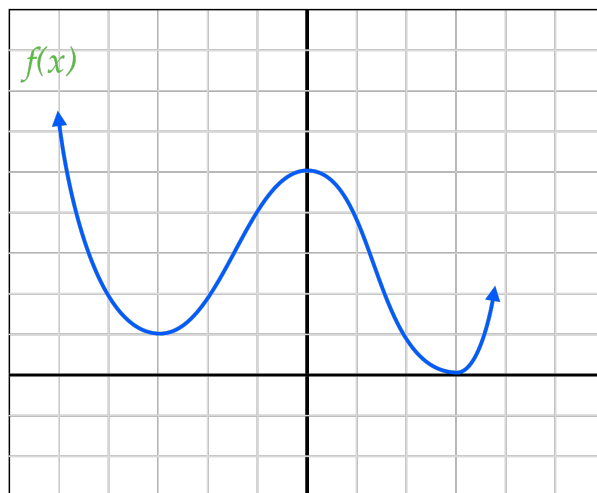
Horizontal Translation, h

If $y = f(x)$, then $y_2 = f(x - h)$ creates a horizontal translation of $f(x)$ h units.

$f(x - h)$ moves h units to the right.

$f(x + h)$ moves h units to the left.

Given $f(x)$ graph $f(x - 2)$



Function Translation

Moving a function up, down, left or right...

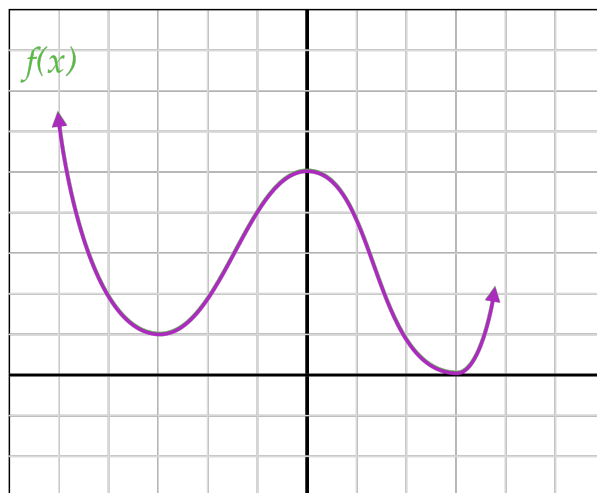
Horizontal Translation, h

If $y = f(x)$, then $y_2 = f(x - h)$ creates a horizontal translation of $f(x)$ h units.

$f(x - h)$ moves h units to the right.

$f(x + h)$ moves h units to the left.

Given $f(x)$ graph $f(x + 1)$



Function Translation

Moving a function up, down, left or right...

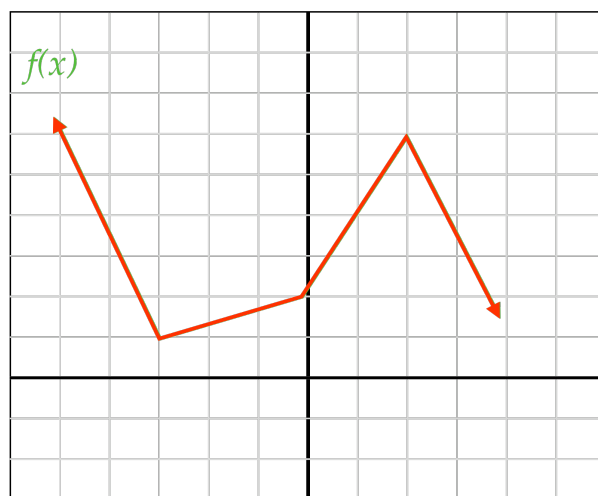
Vertical Translation, k

If $y = f(x)$, then $y_2 = f(x) + k$ creates a vertical translation of $f(x)$ k units.

$f(x) + k$ moves k units up.

$f(x) - k$ moves k units down.

Given $f(x)$ graph $f(x) + 3$



Function Translation

Moving a function up, down, left or right...

Vertical Translation, k

If $y = f(x)$, then $y_2 = f(x) + k$ creates a vertical translation of $f(x)$ k units.

$f(x) + k$ moves k units up.

$f(x) - k$ moves k units down.

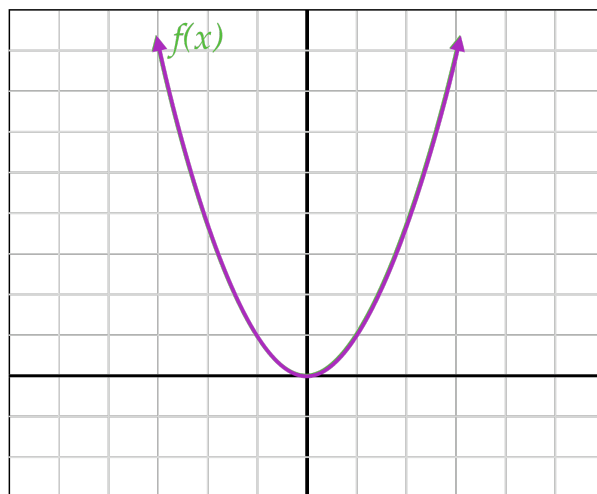
Given $f(x)$ graph $f(x) - 2$



Function Translation

Moving a function up, down, left or right...

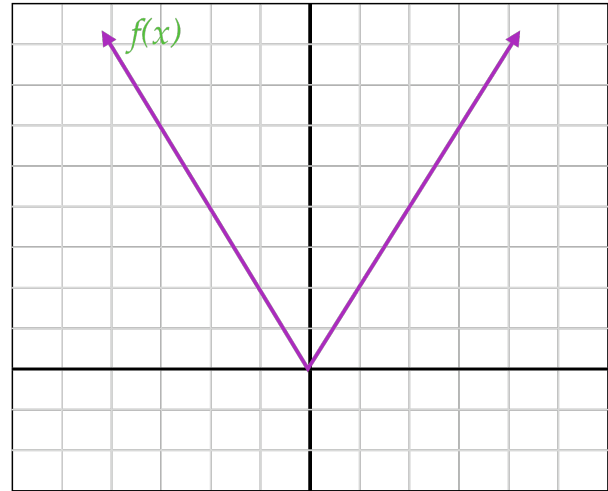
Given $f(x)$ graph $f(x + 3) - 2$



Function Translation

Moving a function up, down, left or right...

Given $f(x)$ graph $f(x - 1) + 3$



Function Translation	
Horizontal Translation, h	
$f(x + h)$; h to the left	$f(x - h)$; h to the right
Vertical Translation, k	
$f(x) + k$; k units up	$f(x) - k$; k units down