Basic transformations of a function $f(x)$:
For each of the functions below, let $k, h > 0$ and $a, b > 1$.

Function	Transformation	Point on graph of function	Input/output change?
$f(x)$	Base Function	$(-1, 3)$	N/A
$f(x) + k$	Shift $f(x)$ up by k units	$(-1, 3 + k)$	Output
$f(x) - k$	Shift $f(x)$ down by k units	$(-1, 3 - k)$	Output
$f(x + h)$	Shift $f(x)$ to the left by h units	$(-1 - h, 3)$	Input
$f(x - h)$	Shift $f(x)$ to the right by h units	$(-1 + h, 3)$	Input
$af(x)$	Vertically stretch $f(x)$ by a factor of a	$(-1, 3a)$	Output
$\frac{1}{a}f(x)$	Vertically compress $f(x)$ by a factor of a	$(-1, 3/a)$	Output
$f(bx)$	Horizontally compress $f(x)$ by a factor of b	$(-1/b, 3)$	Input
$f\left(\frac{1}{b}x\right)$	Horizontally stretch $f(x)$ by a factor of b	$(-1b, 3)$	Input
$-f(x)$	Reflect $f(x)$ across the x-axis	$(-1, -3)$	Output
$f(-x)$	Reflect $f(x)$ across the y-axis	$(1, 3)$	Input