

Absolute Value Transformation Chart

Parent Function

$$y = |x|$$

Transformation	f(x) Notation	Example	Translation	Effect
Vertical Translation	$f(x) + k$	$y = x + 3$ $y = x - 4$	3 units up 4 units down	+k shift up -k shift down
Horizontal Translation	$f(x-h)$	$y = x - 2 $ $y = x + 3 $	2 units right <hr/> 3 units left	-h shift right +h shift left
Vertical stretch or compression	$af(x)$	$y = 6 x $ $y = \frac{1}{2} x $	Vertical Stretch by 6 <hr/> Horizontal compression	$ a > 1$ stretch $ a < 1$ compression
Horizontal stretch or compression	$f\left(\frac{1}{b}x\right)$	$y = \left \frac{1}{2}x\right $ $y = 2x $	Horizontal Stretch Horizontal compression	$ b > 1$ compression $ b < 1$ stretch
<hr/> Reflection	$-f(x)$	$Y = -a x $	<hr/> Reflection across x-axis	-a= reflection across x axis