

Algebraic Transformations Guide

Inside (horizontal change)

$$t(x) = a \cdot f(b(x - h)) + k$$

Suggested Order of Transformations

X y
(parent $x \div b$, fixed) so:
If $b > 1$, Then horizontal compression.
If $0 < b < 1$, Then horizontal stretch.

If $-b$, Then opposite x 's
reflects (flips) over y axis.

If $(_ - h)$, Then horizontal translation (shift) right.
If $(_ + h)$, Then horizontal translation (shift) left.

(factor so coefficient of $x = 1$)

$$t(x) = a \cdot f(b(x - h)) + k$$

X y
(fixed, parent $y \cdot a$) so:
If $a > 1$, Then vertical stretch.
If $0 < a < 1$, Then vertical compression.

If $-a$, Then opposite y 's
reflects (flips) over x axis.

If $+k$, Then vertical translation (shift) up.
If $-k$, Then vertical translation (shift) down.

$$t(x) = a \cdot f(b(x - h)) + k$$

Outside (vertical change)