



U of I MAC Handouts: Graph Transformation Handout

Note: Graph transformation is the process by which existing graph are modified. There are a total of 6 transformations.

"Order of Operations" for Transformations		
Horizontal Shifts	Horizontal Stretch/Compression	Reflection About Y-axis
Shifts Left: $y = f(x + c)$ Shifts Right $y = f(x - c)$	$y = f(ax)$ Compress When: $a > 1$ Stretch When: $0 < a < 1$	$y = f(-x)$ Reflecting $y = f(x)$ about the y-axis
Vertical Stretch/Compression	Reflection About X-Axis	Vertical Shifts
$y = af(x)$ Compress When: $a > 1$ Stretch When: $0 < a < 1$	$y = -f(x)$ Reflecting $y = f(x)$ about the x-axis	Shifts Up: $y = f(x) + c$ Shifts Down: $y = f(x) - c$

*Note: Order of Transformations is horizontal stretch/compression, reflecting the y-axis, horizontal shifts, vertical stretch/compression, reflecting the x-axis and then vertical shifts.

Interactive Tool

To explore these transformations interactively, scan the QR code below, or visit the link directly:

