3.6 Transformations of Graphs of Linear Functions PART 3

Essential Question How does the graph of the linear function $f(x) = x$ compare to the graphs of $g(x) = f(x) + c$ and $h(x) = f(cx)$?
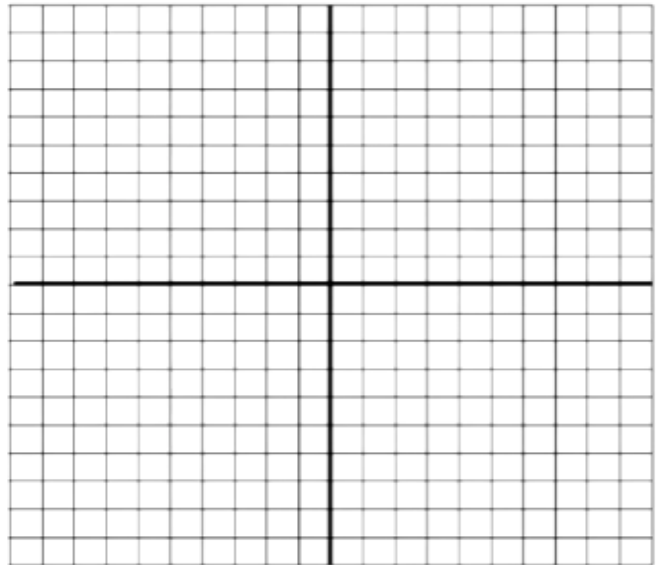
| EXAMPLE 3 | Horizontal and Vertical Stretches

(a)

Let $f(x) = x - 1$.

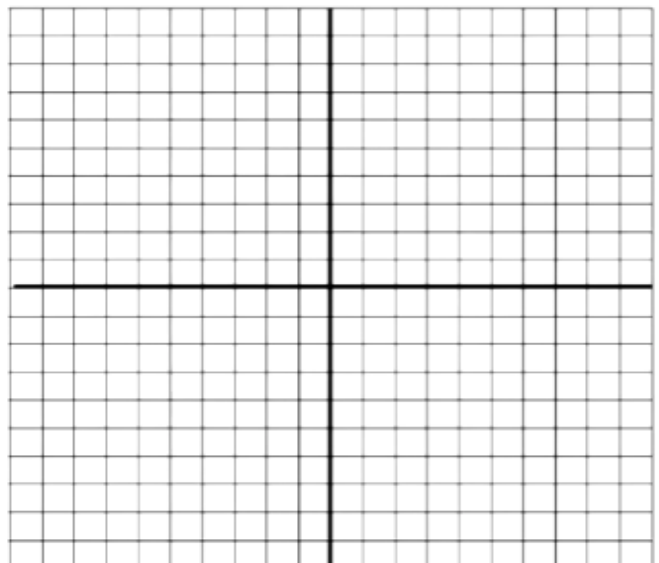$g(x) = f\left(\frac{1}{3}x\right)$

Rule for Horizontal Stretches:

| EXAMPLE 3 | Horizontal and Vertical Stretches

(b)

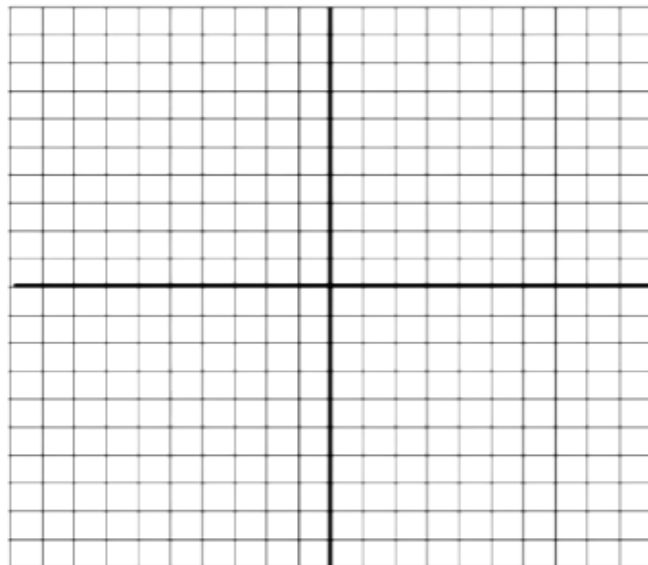Let $f(x) = x - 1$.

$h(x) = 3f(x)$

Rule for Vertical Stretches:

EXAMPLE 4 **Horizontal and Vertical Shrinks**

(a)

Let $f(x) = x + 2$.

$g(x) = f(4x)$

Rule for Horizontal Shrinks:

(b)

Let $f(x) = x + 2$.

$h(x) = \frac{1}{4}f(x)$.

Rule for Vertical Shrinks: