

Transformations of $\frac{1}{x}$ - Worksheet

MCR3U

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Key points of
 $y = \frac{1}{x}$

x	y

1) State the transformations to the parent function $f(x) = \frac{1}{x}$ in the order that you would do them.

a) $g(x) = \frac{2}{3(x-1)}$

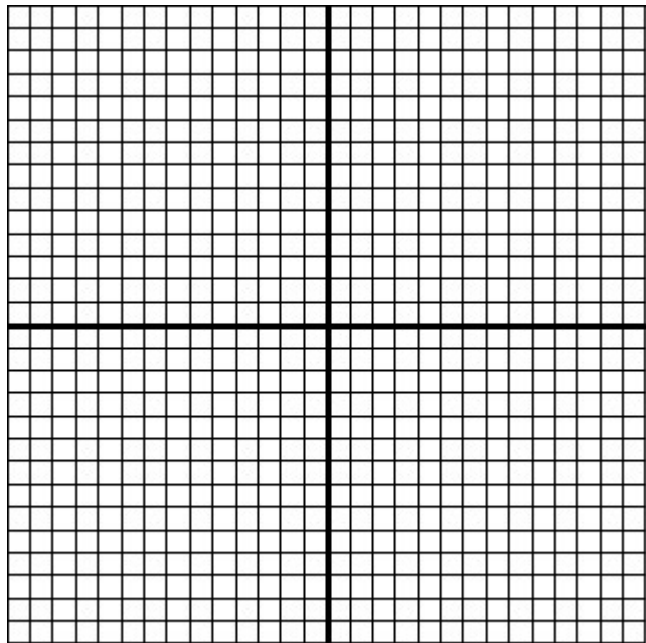
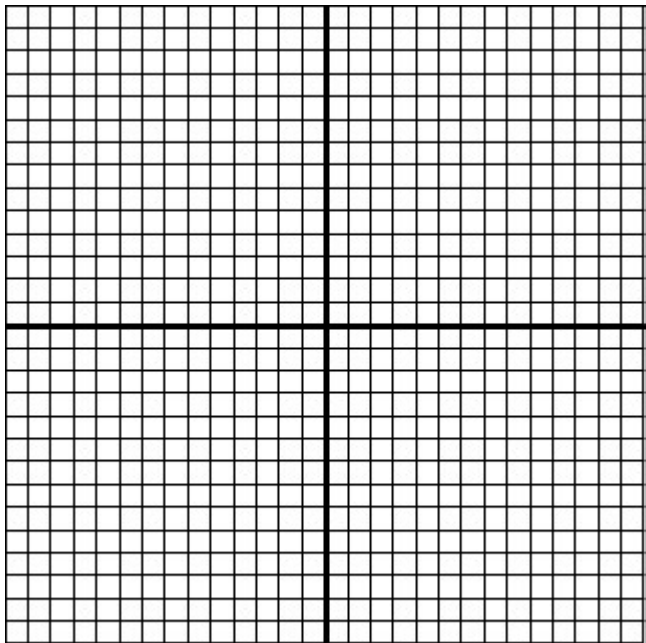
b) $g(x) = \frac{-1}{x+2} - 1$

c) $g(x) = \frac{1}{\frac{1}{2}(x+1)} - 0.5$

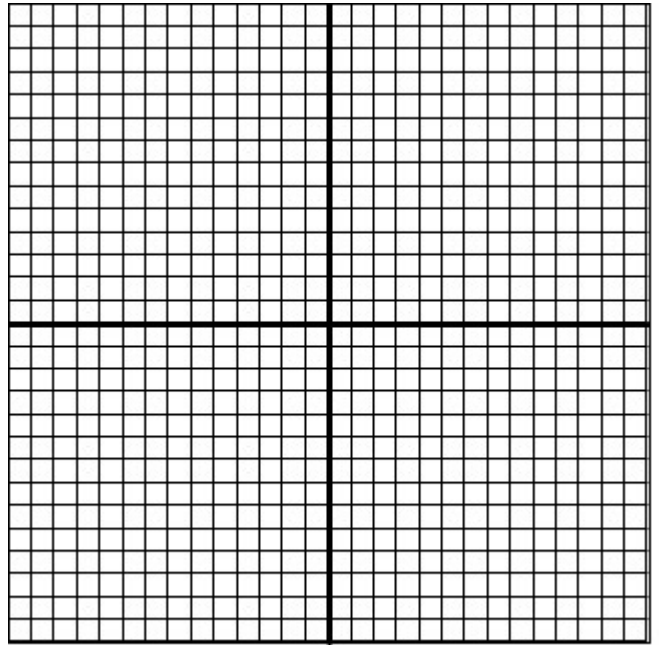
2) Describe the transformations to the parent function $f(x) = \frac{1}{x}$ in order, make a table of values of image points, write the equation of the transformed function and graph it.

a) $g(x) = f\left[\frac{1}{2}(x + 1)\right]$

b) $g(x) = 2f(-x)$



c) $g(x) = -f[-2(x - 0.5)] + 1$



3) Use the description to write the transformed function, $g(x)$.

a) The parent function, $f(x) = \frac{1}{x^2}$, is compressed vertically by a factor of $\frac{1}{3}$ and then translated (shifted) 3 units left.

b) The parent function, $f(x) = \frac{1}{x}$, is reflected over the x-axis, stretch horizontally by a factor of 3 and then translated 1 unit left and 4 units down.