

Transformations of \sqrt{x} - Worksheet

MCR3U

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Key points of
 $y = \sqrt{x}$

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

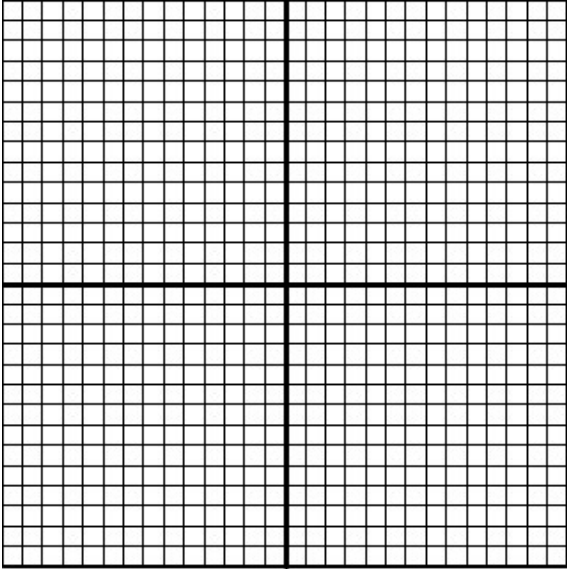
a) $g(x) = 2\sqrt{x+1} - 3$

b) $g(x) = 3\sqrt{\frac{1}{2}(x-5)} + 4$

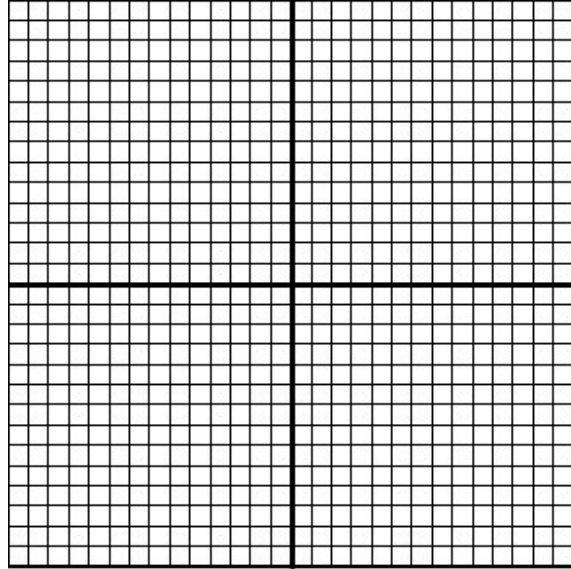
c) $g(x) = -\frac{1}{2}\sqrt{-3(x)} - 6$

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

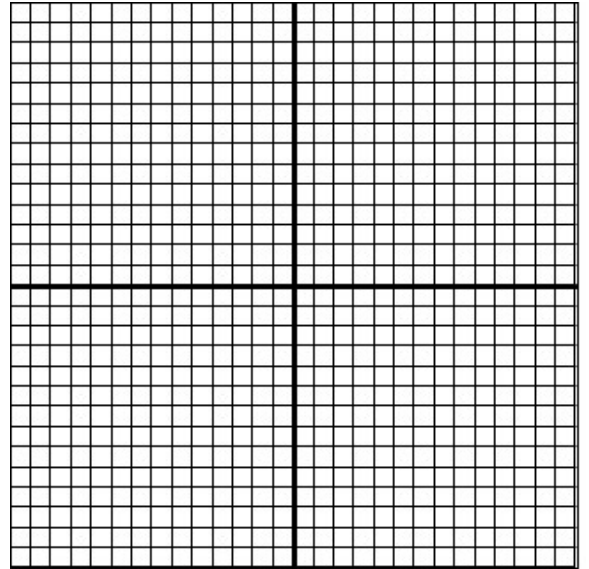
a) $g(x) = f[3(x + 5)]$



b) $g(x) = \frac{1}{4}f(-x)$



c) $g(x) = -4f[-2(x - 3)] + 1$



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

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

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