Shifting and Stretching activity - 2012/11/29

Begin with the graph of $y = \sqrt{x}$ and successively perform each of the following transformations. Give the equation, graph, and domain for each step.

0) Beginning; domain $[0, \infty)$:

$$y = \sqrt{x}$$

i) Stretch vertically by a factor of 3; domain $[0, \infty)$:

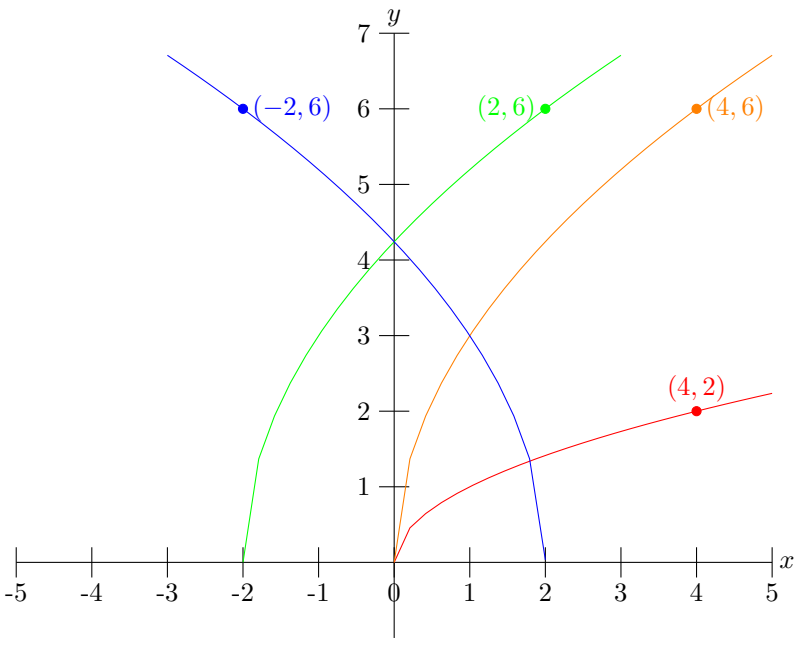
$$y = 3\sqrt{x}$$

ii) Shift left 2 units; domain $[-2, \infty)$:

$$y = 3\sqrt{x+2}$$

iii) Reflect over the y-axis; domain $(-\infty, 2]$:

$$y = 3\sqrt{(-x)+2}$$



To check your work, make sure $(x, y) = (-2, 6)$ satisfies the equation $y = 3\sqrt{(-x)+2}$.