

Find the function that is finally graphed after the following transformations are applied to the graph of $y = \sqrt{x}$ in the order listed.

- (1) Shift down 9 units
 - (2) Reflect about the x -axis
 - (3) Reflect about the y -axis
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$$f(x) = \sqrt{x}.$$

Move down 9: $f(x) - 9 = \sqrt{x} - 9$

Reflect about x -axis: $-(f(x) - 9) = -f(x) + 9 = -\sqrt{x} + 9$ Replace previous by $-$ (previous)

Reflect about y -axis: $-f(-x) + 9 = -\sqrt{-x} + 9$ Replace x by $-x$.