Exercise 6

Write a formula for the function obtained when the graph of $f(x) = \sqrt{x}$ is shifted up 1 unit and to the left 2 units.

Solution

To shift the graph up 1 unit, add 1 to the function.

$$y = \sqrt{x} + 1$$

To also shift the graph to the left 2 units, replace x with $x + 2$.

$$y = \sqrt{x + 2} + 1$$