2.2 Radical Functions and Transformations:

To determine how functions $y = f(x)$ and $y = \sqrt{f(x)}$ are related, we can observe how the square root function affects the $y$-values.

Example 1: Given $f(x) = 4 - 2x$, graph $y = f(x)$ and $y = \sqrt{f(x)}$ using a table of values.
Example 2: Given $f(x) = x - 2$, graph $y = f(x)$ and $y = \sqrt{f(x)}$ by using the graph of $y = f(x)$. State the domain and range of the square root function.
Example 3: Given $f(x) = x^2 - 4$, graph $y = f(x)$ and $y = \sqrt{f(x)}$ by using the graph of $y = f(x)$. State your domain and range of the square root function.
Try: Given \( f(x) = x^2 - 2x - 8 \), graph \( y = f(x) \) and \( y = \sqrt{f(x)} \) by using the graph of \( y = f(x) \). State your domain and range of the square root function.
Example 4: Given \( f(x) = x^2 - 20x + 75 \), determine the domain and range of the function \( y = \sqrt{f(x)} \) analytically.

Example 5: Given the function:

Graph the square root function, \( y = \sqrt{f(x)} \)

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