Given \( f(x) = \sqrt{6 - x} \)

1. Sketch a graph of \( f(x) \) by starting with the graph of \( y = \sqrt{x} \) and using the transformations of Section 1.2.
2. Use the graph of part 1. to sketch the graph of $f'(x)$.

3. Use the definition of the derivative to find $f'(x)$.

Note:

\[ f'(x) = \lim_{h \to 0} \frac{f(x + h) - f(x)}{h} \]

4. What are the domains of $f(x)$ and $f'(x)$? Are they the same? Can you suggest any reason why they are not?