\[ f(x) = \sqrt{x - 4} \]
\[ \lim_{h \to 0} \frac{f(a+h) - f(a)}{h} = f'(a) \]

\[ f'(a) = \lim_{h \to 0} \frac{\sqrt{(a+h) - 4} - \sqrt{a-4}}{h} \]

\[ = \frac{1}{2\sqrt{a}} \cdot \frac{(a+h) - (a-4)}{h} \]
\[ = \frac{1}{2\sqrt{a}} \cdot \frac{h}{h} \cdot \frac{1}{\sqrt{a+h} + \sqrt{a-4}} \]
\[ = \frac{1}{2\sqrt{a}} \cdot \frac{1}{\sqrt{a+h} + \sqrt{a-4}} \]

\[ \lim_{h \to 0} \frac{1}{\sqrt{a+h} + \sqrt{a-4}} = \frac{1}{\sqrt{a+0} + \sqrt{a-4}} = \frac{1}{\sqrt{a} + \sqrt{a-4}} \]
\[ f(x) = \sqrt{x - 4} \]

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

\[ f'(a) = \lim_{{h \to 0}} \frac{\sqrt{(a+h) - 4} - \sqrt{a-4}}{h} \]

\[ = \lim_{{h \to 0}} \frac{(\sqrt{a+h} - 2)(\sqrt{a+h} + \sqrt{a})}{h} \left( \frac{\sqrt{a+h} + \sqrt{a}}{\sqrt{a+h} + \sqrt{a}} \right) \]

\[ = \lim_{{h \to 0}} \frac{(a+h) - 4}{h(\sqrt{a+h} + \sqrt{a})} \]

\[ = \lim_{{h \to 0}} \frac{a - 2}{h(\sqrt{a+h} + \sqrt{a})} \]

\[ = \frac{1}{\sqrt{a+0} + \sqrt{a}} = \frac{1}{\sqrt{2a}} = \frac{1}{2a^{1/2}} \]