$$x = \frac{1}{\sqrt{a}}$$

$$f(x) = \frac{1}{x^2} - a$$

$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)} = x_n - \frac{x_n^{-2} - a}{-2 x_n^{-3}} =$$

$$= x_n + \left(x_n^{-2} - a\right) \cdot \frac{1}{2} \cdot x_n^3 =$$

$$= x_n + \frac{1}{2}\left(x_n - a x_n^3\right) =$$

$$= \frac{3}{2} x_n - \frac{1}{2} a x_n^3$$