$$f^0(x) = \sqrt{x}$$

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

$$f^2(x) = \frac{1}{2} \cdot -\frac{1}{2}\, x^{-\frac{3}{2}} = -\frac{1}{4} \cdot x^{-\frac{3}{1} \cdot \frac{1}{2}} = -\frac{1}{4} \cdot (\sqrt{x})^3$$

$$\underline{a_0 = \sqrt{x_0}}$$

$$a_1 = \left(\frac{3}{2} - 1\right) \cdot \left(\frac{x}{x_0} - 1\right) \cdot \sqrt{x_0}$$

$$= \frac{1}{2} \cdot \sqrt{x_0} \cdot \left(\frac{x}{x_0} - 1\right)$$

$$= \frac{1}{2} \sqrt{x_0} \cdot \frac{x}{x_0} - \frac{1}{2} \cdot \sqrt{x_0}$$

$$\frac{1}{2} \cdot \sqrt{x_0} = \frac{1}{2} \sqrt{x_0} \cdot \frac{x}{x_0} \quad \Big| : \frac{1}{2}\sqrt{x_0}$$

$$1 = \frac{x}{x_0} \quad \Big| \cdot x_0$$

$$\underline{x_0 = x}$$

$$\Longleftrightarrow \underline{y_0^2 = x}$$

$a_0 = y_0 = \sqrt{x_0}$

$$\Rightarrow y_0 = \sqrt{x}$$

$\blacksquare$