$$z = ax + \frac{b}{x} \qquad \frac{\mathrm{d}\,z}{\mathrm{d}\,x} = a - \frac{b}{x^2} = 0 \qquad \boxed{x^* = \sqrt{\frac{b}{a}}} \qquad \boxed{\begin{aligned} z^* &= a\sqrt{\frac{b}{a}} + b\sqrt{\frac{a}{b}} = \sqrt{ab} + \sqrt{ab} = \\ &= 2\sqrt{ab} \end{aligned}}$$

$$\begin{cases} z_1 = ax \\ z_2 = \dfrac{b}{x} \end{cases} \qquad z_1 = z_2: \qquad a\hat{x} = \frac{b}{\hat{x}} \qquad \hat{x} = \sqrt{\frac{b}{a}} \equiv x^*$$