

(ラスト由望) ニュートン法.
追加相乗

$$a_{n+1} = \frac{1}{2} \left(a_n + \frac{A}{a_n} \right) \geq \sqrt{A}$$

$$a_n^2 - A \geq 0$$

$$\begin{aligned} a_{n+1} - a_n &= \frac{1}{2} \left(a_n + \frac{A}{a_n} \right) - a_n \\ &= \frac{1}{2} \left(-a_n + \frac{A}{a_n} \right) = \frac{1}{2} \left(\frac{-a_n^2 + A}{a_n} \right) \leq 0 \end{aligned}$$