BY GIMUSI 08/04/17

(c) $(x_n)^n$ $\qquad x_{n+1} = \frac{5x_n}{4+x_n} + \frac{a}{n} \to 1$

"BRUTAL MODE"

PONIAMO $x_n \sim 1 + \frac{c}{n}$ $\qquad c \in \mathbb{R}/\{0\}$

$$\Rightarrow x_{n+1} \sim 1 + \frac{c}{(n+1)} \sim \frac{5n+5c}{5n+c} + \frac{a}{n}$$

$$\frac{c}{(n+1)} \sim \frac{5n+5c}{5n+c} - 1 + \frac{a}{n} \sim \frac{4c}{5n+c} + \frac{a}{n}$$

$$\frac{n}{(n+1)}\, c \sim \frac{4cn}{5n+c} + a \qquad c \sim \frac{4}{5}c + a$$

$$c \sim 5a \quad \Rightarrow x_n \sim 1 + \frac{5a}{n}$$

$$\Rightarrow (x_n)^n \sim \left(1 + \frac{5a}{n}\right)^n \to e^{5a} = \sqrt[20]{a}$$