



次の極限を求めよ。

$$\lim_{n \rightarrow \infty} \sqrt[n]{\frac{2^n + 1}{3^n + 1}}$$

[東海大大]

$$\begin{aligned} & \lim_{n \rightarrow \infty} \left(\frac{2^n + 1}{3^n + 1} \right)^{\frac{1}{n}} \\ &= \lim_{n \rightarrow \infty} \left\{ \frac{2^{-n} \left(1 + \frac{1}{2^n} \right)}{2^{-n} \left(1 + \frac{1}{3^n} \right)} \right\}^{\frac{1}{n}} \\ &= \lim_{n \rightarrow \infty} \left\{ \left(\frac{2}{3} \right)^{-n} \frac{1 + \frac{1}{2^n}}{1 + \frac{1}{3^n}} \right\}^{\frac{1}{n}} \\ &= \lim_{n \rightarrow \infty} \frac{2}{3} \left\{ \frac{1 + \frac{1}{2^n}}{1 + \frac{1}{3^n}} \right\}^{\frac{1}{n}} \\ &= \frac{2}{3} \end{aligned}$$

+