

$$a_n = \sqrt[n]{n} = 1 + b_n$$

check limit: $\lim_{n \rightarrow \infty} b_n = 0$

$$n = (1 + b_n)^n > \binom{n}{l} b_n^l$$

$$l = 0$$

$$l = 1$$

$$l = 2$$

$$l = 3$$

$$0 < b_n < \frac{2}{n} \rightarrow 0$$