let $y = \frac{1}{n}\left[(a+1)\cdots(a+n)\right]^{\frac{1}{n}}$

$$y = \left[\frac{(a+1)(a+2)\cdots(a+n)}{n^n}\right]^{\frac{1}{n}}$$

here let $a_n = \frac{(a+1)(a+2)\cdots(a+n)}{n^n}$

then

$$\frac{a_{n+1}}{a_n} = \frac{\cancel{(a+1)(a+2)\cdots(a+n)}(a+n+1)}{(n+1)^{n+1}} \times \frac{n^n}{\cancel{(a+1)\cdots(a+n)}}$$

$$= \frac{a+n+1}{\left(1+\frac{1}{n}\right)^n(1+n)} = \frac{\frac{a+1}{n}+1}{\left(1+\frac{1}{n}\right)^{n+1}}$$

$$\lim_{n\to\infty}\frac{a_{n+1}}{a_n} = \frac{0+1}{e\cdot 1} = \frac{1}{e}$$

Thus cauchy's second theorem on limit

$$\lim_{n\to\infty}(a_n)^{\frac{1}{n}} = \frac{1}{e}$$

So, $\boxed{x=1}$ Ans