$$\sum_{n=1}^{\infty} \left[e - \left(1+\frac{1}{n}\right)^n \right]$$

a_n

$a_n \geq 0 \quad \left(1+\frac{1}{n}\right)^n \to e$ MONOTONA CRESCENTE

$$\left(1+\frac{1}{n}\right)^n = e^{n \log\left(1+\frac{1}{n}\right)} = e^{n\left(\frac{1}{n} - \frac{1}{2n^2} + o\left(\frac{1}{n^2}\right)\right)} =$$

$$= e^{1 - \frac{1}{2n} + o\left(\frac{1}{n}\right)} = e\left(1 - \frac{1}{2n} + o\left(\frac{1}{n}\right)\right)$$

$$b_n = \frac{1}{n} \qquad \frac{a_n}{b_n} = \frac{e - \left(1+\frac{1}{n}\right)^n}{\frac{1}{n}} = \frac{\frac{1}{2n} + o\left(\frac{1}{n}\right)}{\frac{1}{n}} \to \frac{1}{2}$$

$\rightsquigarrow \sum a_n$ DIVERGE $\times$ CRIT. ASINTOTICO