$$\sum \overbrace{e^{\frac{1}{n^2}} - \sin\frac{1}{n^2} - 1}^{a_n} \qquad \frac{1}{n^2}\to 0$$

- $x_n = \frac{1}{n^2}$; $\boxed{\frac{1}{n^2} \to 0}$
- $f(x) = e^x - \sin x - 1$

$$T^{f,0} = \cancel{1} + \cancel{x} + \frac{x^2}{2} + o(x^2) - \left(\cancel{x} - \frac{x^3}{6} + o(x^4)\right) - \cancel{1}$$
$$= \frac{x^2}{2} + o(x^2)$$

- $a_n \approx \frac{\left(\frac{1}{n^2}\right)^2}{2} \approx \frac{1}{n^4}$ LSK $b_n = \frac{1}{n^4}$

$\sum a_n$? $\qquad \sum \underbrace{|a_n|}_{\geq 0}$

$$\lim_{n\to\infty} \frac{|a_n|}{b_n} = \lim_{n\to\infty} \frac{\left|e^{1/n^2} - \sin 1/n^2 - 1\right|}{\frac{1}{n^4}} = \frac{1}{2}$$

Heine $x_n = 1/n^2$ $\quad x_n \to 0$ $\quad \in (0,\infty)$

$$\lim_{x\to 0} \frac{|e^x - \sin x - 1|}{x^2} = \left|\frac{1}{2}\right| = \frac{1}{2}$$

$$\lim_{x\to 0} \frac{\frac{x^2}{2} + o(x^2)}{x^2} = \underline{\underline{\frac{1}{2} + 0}}$$

$\sum |a_n|$ K $\iff \sum b_n$

$\sum \frac{1}{n^4}$ K

Závěr: $\sum |a_n|$ K