cv 3/5

$$\lim_{n \to \infty} \left(1 + \frac{k}{n}\right)^n = e^k \qquad ; k \in \mathbb{N}$$

$$\lim_{n \to \infty} \left(\left(1 + \frac{1}{\frac{1}{k}n}\right)^{\frac{1}{k}n}\right)^k = e^k$$

cv 3/7

POKAŽTE ŽE $\mathbb{N}$ A $\mathbb{Q}$ MAJÍ STEJNOU MOHUTNO

ST. ... $\exists$ BIJEKCE $f_1: \mathbb{N} \to \mathbb{Q}, \; f_2: \mathbb{Q} \to \mathbb{N}$

$$-\frac{1}{1}, \frac{2}{1}, \frac{1}{2}, \frac{3}{1}, \ldots$$

$$\frac{1}{1}, \frac{2}{1}, \frac{1}{2}, \frac{3}{1}, \ldots$$

	1	2	3
1	$\frac{1}{1}$	$\frac{2}{1}$	$\frac{3}{1}$
2	$\frac{1}{2}$	$\frac{2}{2}$	$\frac{3}{2}$
3	$\frac{1}{3}$	$\frac{2}{3}$	$\frac{3}{3}$

cv 4/6

(1) $\left(\dfrac{n}{e}\right)^n < \dfrac{n!}{e} < n\left(\dfrac{n}{e}\right)^n$

(2) $\lim_{n \to \infty} \dfrac{1}{n}\sqrt[n]{n!} = \dfrac{1}{e}$

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