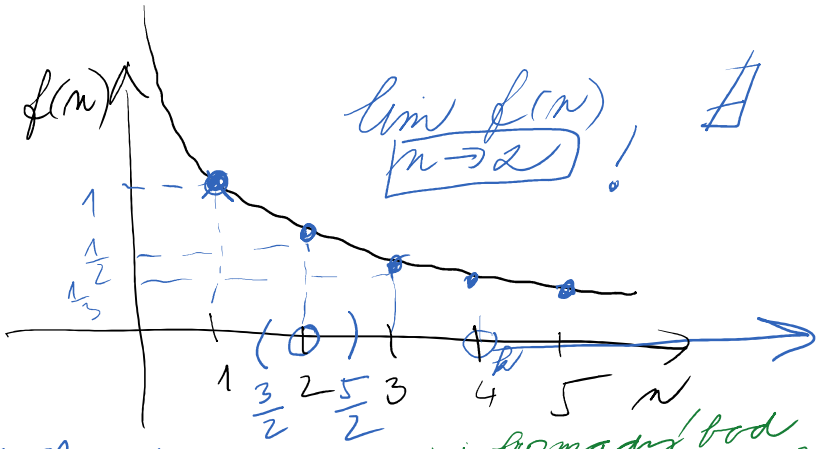
Postupnosti

utorok 24. októbra 2023 16:58

$f: \mathbb{N} \to \mathbb{R}$

$a_n = f(n)$

1) $a_n = \frac{1}{n}$



$\lim_{n \to 2} f(n)$!

2) $a_n = 3 \cdot 2^{n-1}$ ✓

$a_1 = 3 \cdot 1$

$a_2 = 3 \cdot 2$

$a_3 = 3 \cdot 2^2$

$S_{10} = \overset{=3}{a_1} \cdot \frac{1-2^{10}}{1-2}$

$\mathring{O}_{\frac{1}{2}}(2) = \left(\frac{3}{2}, \frac{5}{2}\right) - \{2\}$ nie je hromadný bod $\mathbb{N}$

$O_k(\infty) = (k, \infty)$

$a = \infty$ jediný hromadný bod $\mathbb{N}$

$a_n = \underset{q}{2} \cdot a_{n-1}$

GEOMETRICKÁ $\frac{a_{n+1}}{a_n} = q$ (KVOCIENT)

ARITMETICKÁ $a_{n+1} - a_n = d$ (DIFERENCIA)

LIMITA POSTUPNOSTI

$\lim_{n \to \infty} \left(1 + \frac{5}{n}\right)^n =$

$\lim_{n \to \infty} \left(1 + \frac{1}{\frac{n}{5}}\right)^{n}$ $=$

$\lim_{n \to \infty} \left(1 + \frac{1}{\frac{n}{5}}\right)^{\frac{n}{5} \cdot 5} = \left[\lim_{n \to \infty} \left(1 + \frac{1}{\frac{n}{5}}\right)^{\frac{n}{5}}\right]^5$

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

$n \to \infty$ $\quad$ $\lfloor n \to \infty$

$t = \frac{n}{5}$ $\quad$ $n \to \infty$

$\left[\lim_{t \to \infty} \left(1 + \frac{1}{t}\right)^t\right]^5 = e^5$ $\quad$ $t = \frac{n}{5} \to \infty$

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