

① Suppose $a, b \in \mathbb{R}$ and $a \leq f(n) \leq b$ for all $n \in \mathbb{N}$. Prove that $f(1), f(2), f(3), \dots$ converges HW
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if and only if $\beta f(p) = \beta f(q)$ for all $p, q \in \beta \mathbb{N} - e(\mathbb{N})$ (where $e: \mathbb{N} \rightarrow e(\mathbb{N})$ is the Čech embedding), ~~where $f: \mathbb{N} \rightarrow [a, b]$ & $f(n) = a_n$~~

Hint: disjoint infinite subsets of \mathbb{N} are also disjoint closed sets because \mathbb{N} is discrete.