

Math 131
Warm-up 34

Name:

For each $n \in \mathbf{N}$, define $f_n : \mathbb{R} \rightarrow \mathbb{R}$ by

$$f_n(x) = \begin{cases} 0 & \text{if } |x| > \frac{1}{n} \\ 1 & \text{if } |x| \leq \frac{1}{n} \end{cases}$$

Determine whether $\{f_n\}$ converges pointwise and/or uniformly. Prove your assertions.