Homework 2 of Introduction to Analysis(II)

AM15 黃琦翔 111652028

February 27, 2024

1. Suppose $f_k(x) = \sum_{n=1}^{k} \frac{x}{n^\alpha(1+nx^2)}$ and $E_l = [-l, l]$ for $l \in \mathbb{N}$. Then, we want to proof that for all $\varepsilon > 0$, there exists $N \in \mathbb{N}$ s.t. $|f_k(x) - f_l(x)| < \varepsilon$ for all $k, l > N$ and all $x \in E_L$.