

## Homework 2 of Introduction to Analysis(II)

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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  $x \in E_L$ .