Exercises

E13.2 [14K] Suppose that $f : (0,1] \to \mathbb{R}$ is a continuous function. Prove that, it is bounded from above [a] if and only if $\limsup_{x \to 0+} f(x) < +\infty$.

[a] i.e. there exists $c \in \mathbb{R}$ such that $\forall x \in (0,1]$ you have $f(x) < c$