Exercises

13.17 [15J] Prerequisites:[15F]. Let $A \subset \mathbb{R}^n$ be bounded and $f : A \to \mathbb{R}$ a continuous function. Show that f is uniformly continuous if and only there exists a continuous function $g : \overline{A} \to \mathbb{R}$ extending f; In addition, the extension g is unique.

Solution 1. *[15K]*