

Remark 14.50. [\[23N\]](#) *The vice versa is also true: given $A \subset \mathbb{R}^n$ a closed convex set, a convex function $f : \mathbb{R}^n \rightarrow \mathbb{R}$ such that $A = \{x : f(x) \leq 0\}$ always exists: For example, you can use $f = d_A$, as seen in [\[19B\]](#) in the previous section.*