Exercises

14.46 [198] Topics:Distance function, convex sets. Prerequisites:[OR9],[19C]. Let $A \subset \mathbb{R}^n$ be a closed nonempty set, and d_A the *distance function* defined in the exercise [OR9], that is $d_A(x) = \inf_{y \in A} |x - y|$. Prove that A is a convex set, if and only if d_A is a convex function.

Solution 1. *[199]*