Exercise 14.46. *Topics:Distance function, convex sets. Prerequisites:[0R9],[17D].* [19B]

    Given $A \subset \mathbb{R}^n$ a closed convex set, we define the distance function $d_A(x)$ *as in [0R9]; let $z \notin A$ and x^* the projection of z on A (i.e. the point of minimum distance in the definition of $d_A(z)$). Having fixed $v = (z - x^*)/|z - x^*|$, show that $v \in \partial f(z)$; where ∂f is the* subdifferential *defined in [188].*