

## Exercises

E9.62 [OR9] Topics: distance function.

- (a) Show that  $d_A$  is a Lipschitz function.
- (b) Show that  $d_A \equiv d_{\bar{A}}$ .
- (c) Show that  $\{x, d_A(x) = 0\} = \bar{A}$ .
- (d) If  $M = \mathbb{R}^n$  and  $A$  is closed and non-empty, show that the infimum in [(9.62)] is a minimum.

See also [198] and [19B].

**Solution 1.** [ORB]