

Exercises

E10.b.30 [OQ8] Prerequisites: [OPD], [OPP], [OGJ], [OP6]. Difficulty: *.

Let X be a metric space, and $A \subseteq X$. We want to study the "open-close" operation $\overline{A^\circ}$ (which is the closure of the interior of A).

- Show a simple example where $\overline{A^\circ}$ is not contained A .
- Then write a characterization of $\overline{A^\circ}$ using sequences and balls.
- Use it to show that the "open-close" operation is idempotent, that is, if $D = \overline{A^\circ}$ and then $E = \overline{D^\circ}$ then $E = D$.

Solution 1. [OQ9]