Exercises

9.115 [OW1] Reflect on the statements:

- A closed set C inside a complete metric space (X, d) is complete (when viewed as a metric space (C, d)).
- The set $C = \{0\} \cup \{1/n : n \in \mathbb{N}\}$ is closed in $\mathbb{R}$, so C is complete with distance $d(x, y) = |x - y|$.
- C is composed of countably many points.
- A singleton $\{x\}$ is a closed set with an empty internal part.

Why is there no contradiction?

Solution 1. *[OW2]*