

## Exercises

E9.4 [OMX] We generalize the definition of *metric space* assuming that  $d : X \rightarrow [0, \infty]$  (the other axioms are the same). Show that the relation  $x \sim y$  defined by

$$x \sim y \iff d(x, y) < \infty$$

is an equivalence relation, and that equivalence classes are open, and therefore are disconnected from each other.

**Solution 1.** [OMY]