Exercises

E9.2.3 [09T] Let $I = \{0, 2\}$ and $X = I^{\mathbb{N}}$, consider the map $F : X \to C$ given by

$$F(x) = \sum_{n=0}^{\infty} 3^{-n-1} x_n \, .$$

Show that it is a bijection.

Let's now equip X with the topology defined in [2F9]. [a]. Show that F is a homeomorphism.

Solution 1. [09V]

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[a] Note that the order topology on $I = \{0, 2\}$ is also the discrete topology.