Exercises

3.219 [086] Prerequisites: [07X], [08Z], [07V].

Let $(X, \leq_X)$ be a well-ordered non-empty set. Show that if $S \subseteq X$ is an initial segment and $(X, \leq_X)$ and $(S, \leq_X)$ are equiordinate from the map $f : S \to X$ then $X = S$ and f is the identity.

Solution 1. *[087]*

(Note the difference with cardinality theory: An infinite set is in one-to-one correspondence with some of its proper subsets, *cf* [04G] and [04M]. Moreover, if two sets have the same cardinality then there are many bijections between them.)