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## Hartogs' Lemma

We continue with the final result for this chapter, a lemma originally stated by Hartogs in 1915, restated in this form in our main paper [?].

**Lemma o.o.i.** [?] *Let  $A$  be an arbitrary set. Then there exists an ordinal  $\alpha$ , such that no injective map from any subset of  $A$  to  $\alpha$  exists.*