Logic and Foundations I, Autumn 2023

Homework No.11
Due:
Name:

Problem 1
Show that $\mathsf{Q} \nvdash \forall x(0 + x = x)$.

(Hint) Consider a non-standard model of Peano arithmetic PA in which only the non-standard part is divided into two kinds of numbers in the same way as Problem 1-2 of lec04-01 in the course *Logic and Foundation I*. Show it satisfies Q but does not satisfy $\forall x(0 + x = x)$.

Solution: