

## l54\_orders\_1

(TMFY5WorHJrrrfuLxv61WDuMzQNwkqM1D8X)

October 27, 2020

Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $r6\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(r6\_relat\_2 X0 X1) \Leftrightarrow (\forall X2. \\ \forall X3. \neg(X2 \in X1) \wedge ((X3 \in X1) \wedge ((X2 \neq X3) \wedge ((\neg k4\_tarski X2 X3 \in X0) \wedge \\ (\neg k4\_tarski X3 X2 \in X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1.(r1\_tarski X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \quad (2)$$

**Theorem 1**

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1. \forall X2. ((r6\_relat\_2 X0 X1) \wedge (r1\_tarski X2 X1)) \Rightarrow (r6\_relat\_2 X0 X2))$$