

l61\_orders\_1  
(TMWE6Vy7g28aSpGRY9bJ5fVafEFodBe2yCj)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $r6\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (v1\_relat\_1 (k2\_relat\_1 X0)) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(v1\_relat\_1 X1) \Rightarrow ((X1 = k2\_relat\_1 X0) \Leftrightarrow (\forall X2.\forall X3.(k4\_tarski X2 X3 \in X1) \Leftrightarrow (k4\_tarski X3 X2 \in X0)))) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(r6\_relat\_2 X0 X1) \Leftrightarrow (\forall X2.\forall X3.\neg(X2 \in X1) \wedge (X3 \in X1) \wedge (X2 \neq X3) \wedge (\neg k4\_tarski X2 X3 \in X0) \wedge (\neg k4\_tarski X3 X2 \in X0)))) \quad (3)$$

**Theorem 1**

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(r6\_relat\_2 X0 X1) \Rightarrow (r6\_relat\_2 (k2\_relat\_1 X0) X1))$$