t31_relat_1 (TMVZy8UnGjqz6hKz2mHyp2Gh3YGytDBDWMe)

October 27, 2020

Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1\ (k3\_relat\_1\ X0\ X1) \tag{1}$$

Assume the following.

$$\begin{gathered}\forall X0.\forall X1.\forall X2.(v1\_relat\_1\ X2) \Rightarrow ((X2 = k3\_relat\_1 \\ X0\ X1) \Leftrightarrow (\forall X3.\forall X4.(k4\_tarski\ X3\ X4 \in X2) \Leftrightarrow (\exists X5. \\ (k4\_tarski\ X3\ X5 \in X0) \wedge (k4\_tarski\ X5\ X4 \in X1))))\end{gathered} \tag{2}$$

Assume the following.

$$\begin{gathered}\forall X0.(v1\_relat\_1\ X0) \Rightarrow (\forall X1.(r1\_tarski\ X0\ X1) \Leftrightarrow (\forall X2. \\ \forall X3.(k4\_tarski\ X2\ X3 \in X0) \Rightarrow (k4\_tarski\ X2\ X3 \in X1)))\end{gathered} \tag{3}$$

Theorem 1

$$\begin{gathered}\forall X0.(v1\_relat\_1\ X0) \Rightarrow (\forall X1.(v1\_relat\_1\ X1) \Rightarrow (\forall X2. \\ (v1\_relat\_1\ X2) \Rightarrow (\forall X3.(v1\_relat\_1\ X3) \Rightarrow (((r1\_tarski\ X0 \\ X1) \wedge (r1\_tarski\ X2\ X3)) \Rightarrow (r1\_tarski\ (k3\_relat\_1\ X0\ X2)\ (k3\_relat\_1 \\ X1\ X3))))))\end{gathered}$$