l93_orders_1 (TMEyoDZ9NsTvLme7XvJfSpynJuR3vCRo4Z8)

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Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $r2\_wellord1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r8\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r6\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_wellord1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_wellord1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1\_relat\_1\ X2) \Rightarrow (((r4\_relat\_2\ X2\ X0) \wedge (r1\_tarski\ X1\ X0)) \Rightarrow (r4\_relat\_2\ X2\ X1)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1\_relat\_1\ X2) \Rightarrow (((r1\_relat\_2\ X2\ X0) \wedge (r1\_tarski\ X1\ X0)) \Rightarrow (r1\_relat\_2\ X2\ X1)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarski\ X0\ X1) \wedge (r1\_tarski\ X1\ X2)) \Rightarrow (r1\_tarski\ X0\ X2) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1\_relat\_1\ X2) \Rightarrow (((r8\_relat\_2\ X2\ X0) \wedge (r1\_tarski\ X1\ X0)) \Rightarrow (r8\_relat\_2\ X2\ X1)) \tag{4}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0) \Rightarrow (\forall X1.\forall X2.((r6\_relat\_2\ X0\ X1) \wedge (r1\_tarski\ X2\ X1)) \Rightarrow (r6\_relat\_2\ X0\ X2)) \tag{5}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0) \Rightarrow (\forall X1.(r2\_wellord1\ X0\ X1) \Leftrightarrow ((r1\_relat\_2\ X0\ X1) \wedge ((r8\_relat\_2\ X0\ X1) \wedge ((r4\_relat\_2\ X0\ X1) \wedge ((r6\_relat\_2\ X0\ X1) \wedge (r1\_wellord1\ X0\ X1)))))) \tag{6}$$

Assume the following.

$$\begin{array}{c}\forall X0.(v1\_relat\_1\ X0)\Rightarrow(\forall X1.(r1\_wellord1\ X0\ X1)\Leftrightarrow(\\ \forall X2.\neg(r1\_tarski\ X2\ X1)\wedge((X2\neq k1\_xboole\_0)\wedge(\forall X3.\\ \neg(X3\in X2)\wedge(r1\_xboole\_0\ (k1\_wellord1\ X0\ X3)\ X2)))))\end{array} \tag{7}$$

Theorem 1

$$\begin{array}{c}\forall X0.(v1\_relat\_1\ X0)\Rightarrow(\forall X1.\forall X2.((r2\_wellord1\\ X0\ X1)\wedge(r1\_tarski\ X2\ X1))\Rightarrow(r2\_wellord1\ X0\ X2))\end{array}$$