

## l34\_orders\_1

(TMUyVt34ViLaRCEUyDAFQkqdA43i5EPKeQq)

October 27, 2020

Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_2 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_wellord1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(k4\_tarski\ X0\ X1 \in k2\_zfmisc\_1\ X2\ X3) \Leftrightarrow ((X0 \in X2) \wedge (X1 \in X3)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1\_relat\_1\ X2) \Rightarrow ((k4\_tarski\ X0\ X1 \in X2) \Rightarrow ((X0 \in k1\_relat\_1\ X2) \wedge (X1 \in k1\_relat\_1\ X2))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1\_relat\_1\ X2) \Rightarrow ((X0 \in k1\_relat\_1\ (k2\_wellord1\ X2\ X1)) \Rightarrow ((X0 \in k1\_relat\_1\ X2) \wedge (X0 \in X1))) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ X0) \Rightarrow (v1\_relat\_1\ (k2\_wellord1\ X0\ X1)) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0) \Rightarrow ((v1\_relat\_2\ X0) \Leftrightarrow (r1\_relat\_2\ X0\ (k1\_relat\_1\ X0))) \quad (5)$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0) \Rightarrow (\forall X1.k2\_wellord1\ X0\ X1 = k3\_xboole\_0\ X0\ (k2\_zfmisc\_1\ X1\ X1)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k3\_xboole\_0\ X0\ X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (X3 \in X1))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarSKI X0 X1)\Leftrightarrow(\forall X2.(X2 \in X0)\Rightarrow (X2 \in X1)) \quad (8)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(\forall X1.(r1\_relat\_2 X0 X1)\Leftrightarrow(\forall X2.(X2 \in X1)\Rightarrow(k4\_tarSKI X2 X2 \in X0))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1)\Leftrightarrow((r1\_tarSKI X0 X1)\wedge(r1\_tarSKI X1 X0)) \quad (10)$$

**Theorem 1**

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(\forall X1.((v1\_relat\_2 X0)\wedge(r1\_tarSKI X1 (k1\_relat\_1 X0)))\Rightarrow(k1\_relat\_1 (k2\_wellord1 X0 X1) = X1))$$