

t63\_ordinal3 (TMbquL-  
whuMvrPfHka9gxR9GDsCCYwQ1WuGQ)

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Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k5\_ordinal3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k10\_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow ((k5\_ordinal3 X0 k1\_xboole\_0 = X0) \wedge (k5\_ordinal3 k1\_xboole\_0 X0 = k1\_xboole\_0)) \quad (1)$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow (k5\_ordinal3 (k10\_ordinal2 X0 X1) X0 = X1)) \quad (2)$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow (\forall X2.(v3\_ordinal1 X2) \Rightarrow (k11\_ordinal2 (k10\_ordinal2 X0 X1) X2 = k10\_ordinal2 (k11\_ordinal2 X0 X2) (k11\_ordinal2 X1 X2)))) \quad (3)$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (k11\_ordinal2 X0 k1\_xboole\_0 = k1\_xboole\_0) \quad (4)$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow (\forall X2.(v3\_ordinal1 X2) \Rightarrow ((r1\_ordinal1 (k11\_ordinal2 X0 X1) (k11\_ordinal2 X2 X1)) \Rightarrow ((X1 = k1\_xboole\_0) \vee (r1\_ordinal1 X0 X2)))))) \quad (5)$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (k11\_ordinal2 k1\_xboole\_0 X0 = k1\_xboole\_0) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v3\_ordinal1 X0) \wedge (v3\_ordinal1 X1)) \Rightarrow (v3\_ordinal1 (k5\_ordinal3 X0 X1)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v3\_ordinal1\ X0)\wedge(v3\_ordinal1\ X1))\Rightarrow(v3\_ordinal1\ (k11\_ordinal2\ X0\ X1)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(v3\_ordinal1\ X0)\Rightarrow(\forall X1.(v3\_ordinal1\ X1)\Rightarrow(\forall X2. \\ (v3\_ordinal1\ X2)\Rightarrow(((r1\_ordinal1\ X1\ X0)\Rightarrow((X2 = k5\_ordinal3\ X0\ X1)\Leftrightarrow \\ (X0 = k10\_ordinal2\ X1\ X2))))\wedge((\neg r1\_ordinal1\ X1\ X0)\Rightarrow((X2 = k5\_ordinal3 \\ X0\ X1)\Leftrightarrow(X2 = k1\_xboole\_0)))))) \quad (9) \end{aligned}$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v3\_ordinal1\ X0)\Rightarrow(\forall X1.(v3\_ordinal1\ X1)\Rightarrow(\forall X2. \\ (v3\_ordinal1\ X2)\Rightarrow(k5\_ordinal3\ (k11\_ordinal2\ X0\ X1)\ (k11\_ordinal2 \\ X2\ X1) = k11\_ordinal2\ (k5\_ordinal3\ X0\ X2)\ X1))) \end{aligned}$$