

t57_ordinal3 (TMY-
cFJTER7qhYVaGoN5pHeXLSitVmcQqcg8)

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Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k5_ordinal3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $r1_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1_xboole_0 X0) \wedge ((X0 \neq X1) \wedge (v1_xboole_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. (v3_ordinal1 X0) \Rightarrow ((k5_ordinal3 X0 k1_xboole_0 = X0) \wedge (k5_ordinal3 k1_xboole_0 X0 = k1_xboole_0)) \quad (2)$$

Assume the following.

$$\forall X0. (v3_ordinal1 X0) \Rightarrow (\forall X1. (v3_ordinal1 X1) \Rightarrow (k5_ordinal3 (k10_ordinal2 X0 X1) X0 = X1)) \quad (3)$$

Assume the following.

$$\forall X0. (v3_ordinal1 X0) \Rightarrow (\forall X1. (v3_ordinal1 X1) \Rightarrow (\forall X2. (v3_ordinal1 X2) \Rightarrow ((r1_ordinal1 X0 X1) \Rightarrow (r1_ordinal1 (k10_ordinal2 X2 X0) (k10_ordinal2 X2 X1)))))) \quad (4)$$

Assume the following.

$$\forall X0. (v3_ordinal1 X0) \Rightarrow (\forall X1. (v3_ordinal1 X1) \Rightarrow (\forall X2. (v3_ordinal1 X2) \Rightarrow (k10_ordinal2 (k10_ordinal2 X0 X1) X2 = k10_ordinal2 X0 (k10_ordinal2 X1 X2)))))) \quad (5)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (6)$$

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.

$$\forall X0.\forall X1.((v3_ordinal1\ X0)\wedge(v3_ordinal1\ X1))\Rightarrow(v3_ordinal1\ (k10_ordinal2\ X0\ X1)) \quad (8)$$

Assume the following.

$$\begin{aligned} &\forall X0.(v3_ordinal1\ X0)\Rightarrow(\forall X1.(v3_ordinal1\ X1)\Rightarrow(\forall X2. \\ &(v3_ordinal1\ X2)\Rightarrow(((r1_ordinal1\ X1\ X0)\Rightarrow((X2 = k5_ordinal3\ X0\ X1)\Leftrightarrow \\ &(X0 = k10_ordinal2\ X1\ X2))))\wedge((\neg r1_ordinal1\ X1\ X0)\Rightarrow((X2 = k5_ordinal3 \\ &X0\ X1)\Leftrightarrow(X2 = k1_xboole_0)))))) \quad (9) \end{aligned}$$

Assume the following.

$$\forall X0.(v1_xboole_0\ X0)\Rightarrow(v3_ordinal1\ X0) \quad (10)$$

Theorem 1

$$\begin{aligned} &\forall X0.(v3_ordinal1\ X0)\Rightarrow(\forall X1.(v3_ordinal1\ X1)\Rightarrow(\forall X2. \\ &(v3_ordinal1\ X2)\Rightarrow(k5_ordinal3\ X0\ (k10_ordinal2\ X1\ X2) = k5_ordinal3 \\ &(k5_ordinal3\ X0\ X1)\ X2))) \end{aligned}$$