

t51_ordinal6
(TMTBQ8kx7ueWk6cJohK14LZ3gaM8ogjG86F)

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Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v4_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $v3_ordinal6 : \iota \Rightarrow o$ be given. Let $r1_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k7_ordinal6 : \iota \Rightarrow \iota$ be given. Let $v1_ordinal2 : \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $r1_abian : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((\\ v1_funct_1 X1) \wedge ((v5_ordinal1 X1) \wedge (v3_ordinal6 X1)))) \Rightarrow (\neg(k9_xtuple_0 \\ X1 \neq k1_xboole_0) \wedge ((\forall X2.(v3_ordinal1 X2) \Rightarrow ((X2 \in k9_xtuple_0 \\ X1) \Rightarrow (r1_abian X0 (k1_funct_1 X1 X2)))) \wedge (\forall X2.(v3_ordinal1 \\ X2) \Rightarrow (\neg(X2 \in k9_xtuple_0 (k7_ordinal6 X1)) \wedge (X0 = k1_funct_1 (k7_ordinal6 \\ X1) X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.(v3_ordinal1 X1) \Rightarrow ((\\ r1_ordinal1 X0 X1) \Leftrightarrow (\neg X1 \in X0))) \tag{2}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v5_ordinal1 X0))) \Rightarrow \\ (v3_ordinal1 (k9_xtuple_0 X0)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_ordinal6 \\ X0))) \Rightarrow ((v5_ordinal1 (k1_funct_1 X0 X1)) \wedge (v1_ordinal2 (k1_funct_1 \\ X0 X1))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_ordinal6 \\ X0))) \Rightarrow ((v1_relat_1 (k1_funct_1 X0 X1)) \wedge (v1_funct_1 (k1_funct_1 \\ X0 X1))) \tag{5}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v5_ordinal1 X0) \wedge (v3_ordinal6 X0)))) \Rightarrow ((v1_relat_1 (k7_ordinal6 X0)) \wedge ((v1_funct_1 (k7_ordinal6 X0)) \wedge ((v5_ordinal1 (k7_ordinal6 X0)) \wedge (v1_ordinal2 (k7_ordinal6 X0)))))) \quad (6)$$

Assume the following.

$$\forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.(v3_ordinal1 X1) \Rightarrow ((r1_ordinal1 X0 X1) \Leftrightarrow (\forall X2.(v3_ordinal1 X2) \Rightarrow ((X2 \in X0) \Rightarrow (X2 \in X1)))))) \quad (7)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.(X1 = k10_xtuple_0 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.(X3 \in k9_xtuple_0 X0) \wedge (X2 = k1_funct_1 X0 X3)))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((r1_abian X0 X1) \Leftrightarrow ((X0 \in k9_xtuple_0 X1) \wedge (X0 = k1_funct_1 X1 X0))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (\neg X1 \in X0) \quad (10)$$

Theorem 1

$$\forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.((v3_ordinal1 X1) \wedge (v4_ordinal1 X1) \wedge (\neg v1_xboole_0 X1)) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge ((v5_ordinal1 X2) \wedge (v3_ordinal6 X2)))) \Rightarrow (((r1_ordinal1 X1 (k9_xtuple_0 (k7_ordinal6 X2))) \wedge (\forall X3. ((v1_relat_1 X3) \wedge (v1_funct_1 X3) \wedge ((v5_ordinal1 X3) \wedge (v1_ordinal2 X3)))) \Rightarrow ((X3 \in k10_xtuple_0 X2) \Rightarrow (r1_abian X0 X3))) \wedge (\forall X3. (X3 \in X1) \Rightarrow (k1_funct_1 (k7_ordinal6 X2) X3 \in X0)))) \Rightarrow ((k9_xtuple_0 X2 = k1_xboole_0) \vee (X1 \in k9_xtuple_0 (k7_ordinal6 X2))))))$$