

t54_ordinal6

(TMYe4xnEDa1XCHTLis7vZ6xttAuqDbgbum6)

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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 $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v2_ordinal6 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_ordinal2 : \iota \Rightarrow o$ be given. Let $k7_ordinal6 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $r1_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_ordinal2 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_ordinal6 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $r1_abian : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_ordinal6 : \iota \Rightarrow \iota$ be given. Let $k3_wellord1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_wellord2 : \iota \Rightarrow \iota$ be given. Let $k1_ordinal6 : \iota \Rightarrow \iota$ be given. Let $k2_ordinal1 : \iota \Rightarrow \iota$ be given. Let $v3_ordinal2 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 \\ & X0) \wedge (v1_ordinal2 X0)))) \Rightarrow (\forall X1.(v3_ordinal1 X1) \Rightarrow (\forall X2. \\ & (v3_ordinal1 X2) \Rightarrow (((v2_ordinal2 X0) \wedge ((r1_ordinal1 X1 X2) \wedge (X2 \in \\ & k9_xtuple_0 X0)))) \Rightarrow (r1_ordinal1 (k1_funct_1 X0 X1) (k1_funct_1 \\ & X0 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge ((v5_ordinal1 \\ & X1) \wedge (v3_ordinal6 X1)))) \Rightarrow ((X0 \in k9_xtuple_0 (k7_ordinal6 X1)) \Rightarrow \\ & (r1_tarski X0 (k1_funct_1 (k7_ordinal6 X1) X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v5_ordinal1 \\ & X0) \wedge (v3_ordinal6 X0)))) \Rightarrow (v1_ordinal6 (ReplSep (toset (\lambda X1 : \\ & \iota. m1_subset_1 X1 (k9_xtuple_0 (k1_funct_1 X0 k6_numbers)))) \\ & (\lambda X1 : \iota. (X1 \in k9_xtuple_0 (k1_funct_1 X0 k6_numbers)) \wedge (\forall X2. \\ & ((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge ((v5_ordinal1 X2) \wedge (v1_ordinal2 \\ & X2)))) \Rightarrow ((X2 \in k10_xtuple_0 X0) \Rightarrow (r1_abian X1 X2)))) (\lambda X1 : \iota. \\ & X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (4)$$

Assume the following.

$$\forall X0.(v1_ordinal6 X0) \Rightarrow (k10_xtuple_0 (k2_ordinal6 X0) = X0) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v3_ordinal1 X0) \wedge (v3_ordinal1 X1)) \Rightarrow (r1_ordinal1 X0 X1) \Leftrightarrow (r1_tarski X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v5_ordinal1 X0))) \Rightarrow (v3_ordinal1 (k9_xtuple_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((v5_ordinal1 X0) \wedge ((v1_relat_1 X0) \wedge (v1_funct_1 X0) \wedge (v1_ordinal2 X0)))) \wedge (v3_ordinal1 X1) \Rightarrow (v3_ordinal1 (k1_funct_1 X0 X1)) \quad (8)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v5_ordinal1 X0) \wedge (v3_ordinal6 X0)))) \Rightarrow ((v1_relat_1 (k7_ordinal6 X0)) \wedge ((v1_funct_1 (k7_ordinal6 X0)) \wedge ((v5_ordinal1 (k7_ordinal6 X0)) \wedge (v1_ordinal2 (k7_ordinal6 X0)))))) \quad (9)$$

Assume the following.

$$\forall X0.k2_ordinal6 X0 = k3_wellord1 (k1_wellord2 (k1_ordinal6 X0)) (k1_wellord2 (k2_ordinal1 X0)) \quad (10)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.(X1 = k10_xtuple_0 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.(X3 \in k9_xtuple_0 X0) \wedge (X2 = k1_funct_1 X0 X3)))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((r1_abian X0 X1) \Leftrightarrow ((X0 \in k9_xtuple_0 X1) \wedge (X0 = k1_funct_1 X1 X0))) \quad (12)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v5_ordinal1 \\
& X0) \wedge (v3_ordinal6 X0)))) \Rightarrow (k7_ordinal6 X0 = k2_ordinal6 (ReplSep \\
& (toset (\lambda X1 : \iota.m1_subset_1 X1 (k9_xtuple_0 (k1_funct_1 X0 \\
& k6_numbers)))) (\lambda X1 : \iota.(X1 \in k9_xtuple_0 (k1_funct_1 X0 k6_numbers))) \wedge \\
& (\forall X2.((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge ((v5_ordinal1 \\
& X2) \wedge (v1_ordinal2 X2)))) \Rightarrow ((X2 \in k10_xtuple_0 X0) \Rightarrow (r1_abian X1 \\
& X2)))) (\lambda X1 : \iota.X1))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v5_ordinal1 \\
& X0) \wedge ((v1_ordinal2 X0) \wedge (v2_ordinal6 X0)))) \Rightarrow ((v1_relat_1 X0) \wedge \\
& ((v1_funct_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_ordinal2 X0) \wedge ((v2_ordinal2 \\
& X0) \wedge (v3_ordinal2 X0))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v3_ordinal1 X1)) \tag{15}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v5_ordinal1 \\
& X0) \wedge (v3_ordinal6 X0)))) \Rightarrow ((\forall X1.(v3_ordinal1 X1) \Rightarrow ((X1 \in \\
& k9_xtuple_0 X0) \Rightarrow (v2_ordinal6 (k1_funct_1 X0 X1)))) \Rightarrow ((k9_xtuple_0 \\
& X0 = k1_xboole_0) \vee (\forall X1.(v3_ordinal1 X1) \Rightarrow (\forall X2.(\\
& (v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge ((v5_ordinal1 X2) \wedge (v1_ordinal2 \\
& X2)))) \Rightarrow (((X1 \in k9_xtuple_0 (k7_ordinal6 X0)) \wedge (X2 \in k10_xtuple_0 \\
& X0)) \Rightarrow (r1_ordinal1 (k1_funct_1 X2 X1) (k1_funct_1 (k7_ordinal6 \\
& X0) X1))))))
\end{aligned}$$