

t37_orders_2

(TMRDZxPJAFqhXy5aZ1PkepmX3ohxCy1ePJj)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_orders_2 : \iota \Rightarrow o$ be given. Let $v4_orders_2 : \iota \Rightarrow o$ be given. Let $v5_orders_2 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $m1_orders_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_orders_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m2_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_wellord1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_orders_2 : \iota \Rightarrow \iota$ be given. Let $r2_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6_orders_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

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

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1. (m1_orders_1 X1 (k1_orders_1 (u1_struct_0 X0))) \Rightarrow (m2_orders_2 (k1_tarski (k1_funct_1 X1 (u1_struct_0 X0))) X0 X1)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\ & X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\neg(r1_tarski X1 X2) \wedge ((r2_wellord1 \\ & (u1_orders_2 X0) X2) \wedge (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (((X4 \in X1) \wedge \\ & (r2_orders_2 X0 X3 X4)) \Rightarrow (X3 \in X1)))))) \wedge ((X1 \neq X2) \wedge (\neg m1_orders_2 X1 \\ & X0 X2)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.r1_tarski k1_xboole_0 X0 \quad (6)$$

Assume the following.

$$\forall X0.\exists X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \wedge (v1_xboole_0 X1) \quad (7)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge \\ & ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \wedge (\\ & m1_orders_1 X1 (k1_orders_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m2_orders_2 X2 X0 X1) \Rightarrow ((v6_orders_2 X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge \\ & ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \wedge (\\ & m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m1_orders_2 X2 X0 X1) \Rightarrow (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1_tarski X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\
& X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1.(m1_orders_1 \\
& X1 (k1_orders_1 (u1_struct_0 X0))) \Rightarrow (\forall X2.((v6_orders_2 \\
& X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow ((m2_orders_2 \\
& X2 X0 X1) \Leftrightarrow ((X2 \neq k1_xboole_0) \wedge ((r2_wellord1 (u1_orders_2 X0) X2) \wedge \\
& (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((X3 \in X2) \Rightarrow (k1_funct_1 \\
& X1 (k1_orders_2 X0 (k3_orders_2 X0 X2 X3)) = X3))))))))) \\
& \hspace{15em} (12)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\
& X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((X1 \neq k1_xboole_0) \Rightarrow ((m1_orders_2 \\
& X2 X0 X1) \Leftrightarrow (\exists X3.(m1_subset_1 X3 (u1_struct_0 X0)) \wedge ((X3 \in \\
& X1) \wedge (X2 = k3_orders_2 X0 X1 X3)))))) \wedge ((X1 = k1_xboole_0) \Rightarrow ((m1_orders_2 \\
& X2 X0 X1) \Leftrightarrow (X2 = k1_xboole_0)))))) \\
& \hspace{15em} (13)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\
& X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1.(m1_orders_1 \\
& X1 (k1_orders_1 (u1_struct_0 X0))) \Rightarrow (\forall X2.(m2_orders_2 \\
& X2 X0 X1) \Rightarrow (k1_funct_1 X1 (u1_struct_0 X0) \in X2)))
\end{aligned}$$