

t39_orders_2 (TMSRNDnTU- VSxQZZF6JPBTSeEb2iUHHDRNAN)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_orders_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_orders_1 : \iota \Rightarrow \iota$ 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 $k3_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v6_orders_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg(X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\neg(r1_tarski X1 X2) \wedge ((r2_wellord1 (u1_orders_2 X0) X2) \wedge ((\forall X3. (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (((X4 \in X1) \wedge (r2_orders_2 X0 X3 X4)) \Rightarrow (X3 \in X1)))))) \wedge ((X1 \neq X2) \wedge (\neg m1_orders_2 X1 X0 X2))))))) \quad (4) \end{aligned}$$

Assume the following.

$$\forall X0.r1_tarSKI\ k1_xboole_0\ X0 \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0\ X0) \wedge ((v3_orders_2\ X0) \wedge ((v4_orders_2\ X0) \wedge ((v5_orders_2\ X0) \wedge (l1_orders_2\ X0)))))) \Rightarrow (k1_orders_2\ X0 \wedge (k1_struct_0\ X0 = u1_struct_0\ X0)) \quad (6)$$

Assume the following.

$$v1_xboole_0\ k1_xboole_0 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0\ X0) \wedge ((v3_orders_2\ X0) \wedge ((v4_orders_2\ X0) \wedge ((v5_orders_2\ X0) \wedge (l1_orders_2\ X0)))))) \wedge (m1_orders_1\ X1\ (k1_orders_1\ (u1_struct_0\ X0)))) \Rightarrow (\forall X2.(m2_orders_2\ X2\ X0\ X1) \Rightarrow ((v6_orders_2\ X2\ X0) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0)))))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0\ X0) \wedge ((v3_orders_2\ X0) \wedge ((v4_orders_2\ X0) \wedge ((v5_orders_2\ X0) \wedge (l1_orders_2\ X0)))))) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow (\forall X2.(m1_orders_2\ X2\ X0\ X1) \Rightarrow (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \quad (9)$$

Assume the following.

$$\forall X0.(l1_orders_2\ X0) \Rightarrow (l1_struct_0\ X0) \quad (10)$$

Assume the following.

$$\forall X0.(l1_struct_0\ X0) \Rightarrow (k1_struct_0\ X0 = k1_xboole_0) \quad (11)$$

Assume the following.

$$\forall X0.(((\neg v2_struct_0\ X0) \wedge ((v3_orders_2\ X0) \wedge ((v4_orders_2\ X0) \wedge ((v5_orders_2\ X0) \wedge (l1_orders_2\ X0)))))) \Rightarrow (\forall X1.(m1_orders_1\ X1\ (k1_orders_1\ (u1_struct_0\ X0)))) \Rightarrow (\forall X2.(((v6_orders_2\ X2\ X0) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0)))))) \Rightarrow ((m2_orders_2\ X2\ X0\ X1) \Leftrightarrow ((X2 \neq k1_xboole_0) \wedge ((r2_wellord1\ (u1_orders_2\ X0)\ X2) \wedge (\forall X3.(m1_subset_1\ X3\ (u1_struct_0\ X0) \Rightarrow ((X3 \in X2) \Rightarrow (k1_funct_1\ X1\ (k1_orders_2\ X0\ (k3_orders_2\ X0\ X2\ X3)) = X3)))))))))) \quad (12)$$

Assume the following.

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

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\
& X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_orders_1 X2 (k1_orders_1 \\
& (u1_struct_0 X0))) \Rightarrow (\forall X3.(m2_orders_2 X3 X0 X2) \Rightarrow ((X1 = k1_funct_1 \\
& X2 (u1_struct_0 X0)) \Rightarrow (k3_orders_2 X0 X3 X1 = k1_xboole_0))))))
\end{aligned}$$