

t37_yellow_0

(TMKL3uy21C9kvykyJAj2K6HQNxEsZkULRRs)

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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 $r2_yellow_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_yellow_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. r1_tarski\ X0\ (k2_xboole_0\ X0\ X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v4_orders_2\ X0) \wedge (l1_orders_2\ X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow (\forall X2. (m1_subset_1\ X2 \\ & (u1_struct_0\ X0)) \Rightarrow ((r1_orders_2\ X0\ X1\ X2) \Rightarrow (\forall X3. ((r1_lattice3 \\ & X0\ X3\ X2) \Rightarrow (r1_lattice3\ X0\ X3\ X1)) \wedge ((r2_lattice3\ X0\ X3\ X1) \Rightarrow (r2_lattice3 \\ & X0\ X3\ X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1_orders_2\ X0) \Rightarrow (\forall X1. \forall X2. ((r1_tarski \\ & X1\ X2) \wedge ((r2_yellow_0\ X0\ X1) \wedge (r2_yellow_0\ X0\ X2))) \Rightarrow (r1_orders_2 \\ & X0\ (k2_yellow_0\ X0\ X2)\ (k2_yellow_0\ X0\ X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v5_orders_2\ X0) \wedge (l1_orders_2\ X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow (\forall X2. (((X1 = k2_yellow_0 \\ & X0\ X2) \wedge (r2_yellow_0\ X0\ X2)) \Rightarrow ((r1_lattice3\ X0\ X2\ X1) \wedge (\forall X3. \\ & (m1_subset_1\ X3\ (u1_struct_0\ X0)) \Rightarrow ((r1_lattice3\ X0\ X2\ X3) \Rightarrow (r1_orders_2 \\ & X0\ X3\ X1)))))) \wedge (((r1_lattice3\ X0\ X2\ X1) \wedge (\forall X3. (m1_subset_1 \\ & X3\ (u1_struct_0\ X0)) \Rightarrow ((r1_lattice3\ X0\ X2\ X3) \Rightarrow (r1_orders_2\ X0\ X3 \\ & X1)))) \Rightarrow ((X1 = k2_yellow_0\ X0\ X2) \wedge (r2_yellow_0\ X0\ X2)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v5_orders_2 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\
& (((X3 = k11_lattice3 X0 X1 X2) \wedge (r2_yellow_0 X0 (k2_tarski X1 X2))) \Rightarrow \\
& ((r1_orders_2 X0 X3 X1) \wedge ((r1_orders_2 X0 X3 X2) \wedge (\forall X4.(m1_subset_1 \\
& X4 (u1_struct_0 X0)) \Rightarrow ((r1_orders_2 X0 X4 X1) \wedge (r1_orders_2 X0 \\
& X4 X2)) \Rightarrow (r1_orders_2 X0 X4 X3)))))) \wedge (((r1_orders_2 X0 X3 X1) \wedge (\\
& r1_orders_2 X0 X3 X2) \wedge (\forall X4.(m1_subset_1 X4 (u1_struct_0 \\
& X0)) \Rightarrow ((r1_orders_2 X0 X4 X1) \wedge (r1_orders_2 X0 X4 X2)) \Rightarrow (r1_orders_2 \\
& X0 X4 X3)))))) \Rightarrow ((X3 = k11_lattice3 X0 X1 X2) \wedge (r2_yellow_0 X0 (k2_tarski \\
& X1 X2))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_orders_2 X0) \Rightarrow (\forall X1.\forall X2.\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (((r1_lattice3 X0 X1 X3) \wedge (\\
& r1_lattice3 X0 X2 X3)) \Rightarrow (r1_lattice3 X0 (k2_xboole_0 X1 X2) X3)) \wedge \\
& (((r2_lattice3 X0 X1 X3) \wedge (r2_lattice3 X0 X2 X3)) \Rightarrow (r2_lattice3 \\
& X0 (k2_xboole_0 X1 X2) X3))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(l1_orders_2 X0) \Rightarrow (m1_subset_1 (k2_yellow_0 X0 X1) (u1_struct_0 X0)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \tag{8}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 \\
& X0))) \Rightarrow (\forall X1.\forall X2.((r2_yellow_0 X0 X1) \wedge ((r2_yellow_0 \\
& X0 X2) \wedge (r2_yellow_0 X0 (k2_xboole_0 X1 X2)))) \Rightarrow (k2_yellow_0 X0 \\
& (k2_xboole_0 X1 X2) = k11_lattice3 X0 (k2_yellow_0 X0 X1) (k2_yellow_0 \\
& X0 X2)))
\end{aligned}$$