

t12_yellow_1

(TMYC9R7g58AtmxM9xSvvFWLVVLZ5fC3v4UFM)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_lattice3 : \iota \Rightarrow o$ be given. Let $k2_yellow_1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k11_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $r1_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_orders_2 : \iota \Rightarrow o$ be given. Let $r2_yellow_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_orders_2 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_orders_2 : \iota \Rightarrow o$ be given. Let $v4_orders_2 : \iota \Rightarrow o$ be given. Let $v1_relat_2 : \iota \Rightarrow o$ be given. Let $k1_yellow_1 : \iota \Rightarrow \iota$ be given. Let $v4_relat_2 : \iota \Rightarrow o$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_orders_2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ (k2_yellow_1 X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 \\ (k2_yellow_1 X0))) \Rightarrow ((k3_xboole_0 X1 X2 \in X0) \Rightarrow (k11_lattice3 (k2_yellow_1 \\ X0) X1 X2 = k3_xboole_0 X1 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0. (l1_orders_2 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\ (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (((r1_lattice3 X0 (k2_tarski \\ X2 X3) X1) \Rightarrow ((r1_orders_2 X0 X1 X2) \wedge (r1_orders_2 X0 X1 X3))) \wedge (((\\ (r1_orders_2 X0 X1 X2) \wedge (r1_orders_2 X0 X1 X3)) \Rightarrow (r1_lattice3 X0 \\ (k2_tarski X2 X3) X1)) \wedge (((r2_lattice3 X0 (k2_tarski X2 X3) X1) \Rightarrow \\ ((r1_orders_2 X0 X2 X1) \wedge (r1_orders_2 X0 X3 X1))) \wedge (((r1_orders_2 \\ X0 X2 X1) \wedge (r1_orders_2 X0 X3 X1)) \Rightarrow (r2_lattice3 X0 (k2_tarski X2 \\ X3) X1)))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ (k2_yellow_1 X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ (k2_yellow_1 X0))) \Rightarrow ((r3_orders_2 (k2_yellow_1 X0) X1 X2) \Leftrightarrow (r1_tarski \\ X1 X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((v5_orders_2 X0) \wedge (l1_orders_2 X0)) \Rightarrow ((v2_lattice3 \\ X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (r2_yellow_0 X0 (k2_tarski \\ X1 X2)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1_tarski X0 X1) \wedge (r1_tarski X0 X2)) \Rightarrow (r1_tarski X0 (k3_xboole_0 X1 X2)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski (k3_xboole_0 X0 X1) X0 \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((v5_orders_2 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ (r2_yellow_0 X0 X1) \Leftrightarrow (\exists X2.(m1_subset_1 X2 (u1_struct_0 \\ X0)) \wedge ((r1_lattice3 X0 X1 X2) \wedge (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ X0)) \Rightarrow ((r1_lattice3 X0 X1 X3) \Rightarrow (r1_orders_2 X0 X3 X2)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v3_orders_2 \\ X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow ((r3_orders_2 X0 X1 X2) \Leftrightarrow (r1_orders_2 \\ X0 X1 X2)) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.k3_xboole_0 X0 X0 = X0 \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 X0))) \Rightarrow (\forall X2.\forall X3.(g1_orders_2 X0 X1 = g1_orders_2 \\ X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow ((\neg v2_struct_0 (k2_yellow_1 X0)) \wedge (v1_orders_2 (k2_yellow_1 X0))) \quad (12)$$

Assume the following.

$$\forall X0.(v1_orders_2 (k2_yellow_1 X0) \wedge (v3_orders_2 (k2_yellow_1 X0)) \wedge ((v4_orders_2 (k2_yellow_1 X0)) \wedge (v5_orders_2 (k2_yellow_1 X0)))) \quad (13)$$

Assume the following.

$$\forall X0.(v1_orders_2 (k2_yellow_1 X0) \wedge (l1_orders_2 (k2_yellow_1 X0))) \quad (14)$$

Assume the following.

$$\forall X0.(v1_relat_2 (k1_yellow_1 X0) \wedge (v4_relat_2 (k1_yellow_1 X0)) \wedge ((v8_relat_2 (k1_yellow_1 X0)) \wedge ((v1_partfun1 (k1_yellow_1 X0) X0) \wedge (m1_subset_1 (k1_yellow_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1_orders_2 X0) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k11_lattice3 X0 X1 X2) (u1_struct_0 X0)) \quad (16)$$

Assume the following.

$$\forall X0.k2_yellow_1 X0 = g1_orders_2 X0 (k1_yellow_1 X0) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.k3_xboole_0 X0 X1 = k3_xboole_0 X1 X0 \quad (18)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow ((v1_orders_2 X0) \Rightarrow (X0 = g1_orders_2 (u1_struct_0 X0) (u1_orders_2 X0))) \quad (19)$$

Theorem 1

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow ((\forall X1.\forall X2.((X1 \in X0) \wedge (X2 \in X0)) \Rightarrow (k3_xboole_0 X1 X2 \in X0)) \Rightarrow (v2_lattice3 (k2_yellow_1 X0)))$$