

t13_ff_siec

(TMa33qD7YSWzk5vQje47DUTa3dK5FNPCZUw)

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Let $v1_net_1 : \iota \Rightarrow o$ be given. Let $l1_petri : \iota \Rightarrow o$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_relat_1 : \iota \Rightarrow \iota$ be given. Let $k1_net_1 : \iota \Rightarrow \iota$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_relat_1 : \iota \Rightarrow \iota$ be given. Let $k2_net_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_petri : \iota \Rightarrow \iota$ be given. Let $u2_petri : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. ((v1_net_1 X2) \wedge (l1_petri X2)) \Rightarrow \\
 & (((k4_tarski X0 X1 \in k1_net_1 X2) \wedge (X0 \in u4_struct_0 X2)) \Rightarrow ((\neg X0 \in \\
 & u1_struct_0 X2) \wedge ((\neg X1 \in u4_struct_0 X2) \wedge (X1 \in u1_struct_0 X2)))) \wedge \\
 & (((k4_tarski X0 X1 \in k1_net_1 X2) \wedge (X1 \in u4_struct_0 X2)) \Rightarrow ((\neg X1 \in \\
 & u1_struct_0 X2) \wedge ((\neg X0 \in u4_struct_0 X2) \wedge (X0 \in u1_struct_0 X2)))) \wedge \\
 & (((k4_tarski X0 X1 \in k1_net_1 X2) \wedge (X0 \in u1_struct_0 X2)) \Rightarrow ((\neg X1 \in \\
 & u1_struct_0 X2) \wedge ((\neg X0 \in u4_struct_0 X2) \wedge (X1 \in u4_struct_0 X2)))) \wedge \\
 & (((k4_tarski X0 X1 \in k1_net_1 X2) \wedge (X1 \in u1_struct_0 X2)) \Rightarrow ((\neg X0 \in \\
 & u1_struct_0 X2) \wedge ((\neg X1 \in u4_struct_0 X2) \wedge (X0 \in u4_struct_0 X2))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. (v1_relat_1 X0) \Rightarrow ((\forall X1. \forall X2. \neg k4_tarski \\
 & X1 X2 \in X0) \Rightarrow (X0 = k1_xboole_0))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. (v1_relat_1 X0) \Rightarrow (k2_relat_1 (k2_relat_1 X0) = X0) \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 X0) \Rightarrow (v1_relat_1 (k3_xboole_0 X0 X1)) \tag{4}$$

Assume the following.

$$\forall X0. (l1_petri X0) \Rightarrow (v1_relat_1 (k1_net_1 X0)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 X0)\Rightarrow(v1_relat_1 (k5_relat_1 X0 X1)) \quad (6)$$

Assume the following.

$$\forall X0.v1_relat_1 (k4_relat_1 X0) \quad (7)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow(v1_relat_1 (k2_relat_1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(r1_xboole_0 X0 X1)\Leftrightarrow(k3_xboole_0 X0 X1 = k1_xboole_0) \quad (9)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow(\forall X1.(v1_relat_1 X1)\Rightarrow((X1 = k2_relat_1 X0)\Leftrightarrow(\forall X2.\forall X3.(k4_tarski X2 X3 \in X1)\Leftrightarrow(k4_tarski X3 X2 \in X0)))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k3_xboole_0 X0 X1)\Leftrightarrow(\forall X3.(X3 \in X2)\Leftrightarrow((X3 \in X0)\wedge(X3 \in X1))) \quad (11)$$

Assume the following.

$$\forall X0.(l1_petri X0)\Rightarrow(k2_net_1 X0 = k2_xboole_0 (u1_struct_0 X0) (u4_struct_0 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l1_petri X0)\Rightarrow(k1_net_1 X0 = k2_xboole_0 (u1_petri X0) (u2_petri X0)) \quad (13)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow(\forall X1.\forall X2.(v1_relat_1 X2)\Rightarrow((X2 = k5_relat_1 X0 X1)\Leftrightarrow(\forall X3.\forall X4.(k4_tarski X3 X4 \in X2)\Leftrightarrow((X3 \in X1)\wedge(k4_tarski X3 X4 \in X0)))))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 X1)\Rightarrow((X1 = k4_relat_1 X0)\Leftrightarrow(\forall X2.\forall X3.(k4_tarski X2 X3 \in X1)\Leftrightarrow((X2 \in X0)\wedge(X2 = X3)))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.k3_xboole_0 X0 X1 = k3_xboole_0 X1 X0 \quad (16)$$

Theorem 1

$$\begin{aligned} \forall X0.((v1_net_1 X0) \wedge (l1_petri X0)) \Rightarrow & ((r1_xboole_0 (k5_relat_1 \\ (k2_relat_1 (k1_net_1 X0)) (u4_struct_0 X0)) (k4_relat_1 (k2_net_1 \\ X0))) \wedge ((r1_xboole_0 (k5_relat_1 (k1_net_1 X0) (u4_struct_0 X0)) \\ (k4_relat_1 (k2_net_1 X0))) \wedge ((r1_xboole_0 (k5_relat_1 (k2_relat_1 \\ (k1_net_1 X0)) (u1_struct_0 X0)) (k4_relat_1 (k2_net_1 X0))) \wedge \\ (r1_xboole_0 (k5_relat_1 (k1_net_1 X0) (u1_struct_0 X0)) (k4_relat_1 \\ (k2_net_1 X0)))))) \end{aligned}$$