

t8_petri

(TMW3tJooZWfxGdJWPTufpqqRu8rsu8VGWf1)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v2_petri : \iota \Rightarrow o$ be given. Let $v3_petri : \iota \Rightarrow o$ be given. Let $l1_petri : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k9_petri : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_petri : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u2_petri : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_petri : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (k1_xtuple_0 (k4_tarski X0 X1) = X0) \wedge (k2_xtuple_0 (k4_tarski X0 X1) = X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow (\forall X3. (m1_petri X3 X0 X1 X2) \Leftrightarrow (m1_subset_1 X3 X2)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_petri X0) \wedge ((v3_petri X0) \wedge (l1_petri X0)))))) \wedge (m1_subset_1 X1 (u2_petri X0)) \Rightarrow (k5_petri X0 X1 = k2_xtuple_0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X1)))) \Rightarrow (k1_domain_1 X0 X1 X2 X3 = k4_tarski X2 X3) \quad (4)$$

Assume the following.

$$\forall X0. ((v3_petri X0) \wedge (l1_petri X0)) \Rightarrow (\neg v1_xboole_0 (u2_petri X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l1_petri\ X0)\Rightarrow(m1_subset_1\ (u2_petri\ X0)\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u4_struct_0\ X0)\ (u1_struct_0\ X0)))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0\ X0)\wedge((\neg v11_struct_0\ X0)\wedge((v2_petri\ X0)\wedge((v3_petri\ X0)\wedge(l1_petri\ X0))))))\wedge(m1_subset_1\ X1\ (u2_petri\ X0))\Rightarrow(m1_subset_1\ (k5_petri\ X0\ X1)\ (u1_struct_0\ X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0)\wedge((\neg v11_struct_0\ X0)\wedge((v2_petri\ X0)\wedge((v3_petri\ X0)\wedge(l1_petri\ X0))))))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u4_struct_0\ X0)))\Rightarrow(k9_petri\ X0\ X1 = ReplSep\ (toset\ (\lambda X2 : \iota.m1_subset_1\ X2\ (u1_struct_0\ X0))\ (\lambda X2 : \iota.\exists X3. \\ & (m1_petri\ X3\ (u4_struct_0\ X0)\ (u1_struct_0\ X0)\ (u2_petri\ X0))\wedge \\ & (\exists X4.(m1_subset_1\ X4\ (u4_struct_0\ X0))\wedge((X4 \in X1)\wedge(X3 = k1_domain_1\ (u4_struct_0\ X0)\ (u1_struct_0\ X0)\ X4\ X2))))\ (\lambda X2 : \iota.X2))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(v1_xboole_0\ X0)\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X1\ X0)))\Rightarrow(v1_xboole_0\ X2)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(v1_xboole_0\ X0)\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))\Rightarrow(v1_xboole_0\ X2)) \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0)\wedge((\neg v11_struct_0\ X0)\wedge((v2_petri\ X0)\wedge((v3_petri\ X0)\wedge(l1_petri\ X0))))))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u4_struct_0\ X0)))\Rightarrow(\forall X2.(X2 \in k9_petri\ X0\ X1)\Leftrightarrow(\exists X3.(m1_petri\ X3\ (u4_struct_0\ X0)\ (u1_struct_0\ X0)\ (u2_petri\ X0))\wedge(\exists X4.(m1_subset_1\ X4\ (u4_struct_0\ X0))\wedge \\ & ((X4 \in X1)\wedge(X3 = k4_tarski\ X4\ X2)))))) \end{aligned}$$