

t5_lopclset

(TMdE9eqg2NNgzGh3mbSc7ndHrxWPM7wBLjE)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $g3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_lopclset : \iota \Rightarrow \iota$ be given. Let $k4_lopclset : \iota \Rightarrow \iota$ be given. Let $k5_lopclset : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_lopclset : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v3_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_funct_1 X1) \wedge ((v1_funct_2 \\ & X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0) X0)))))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 \\ & (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X3. \forall X4. \forall X5. \\ & (g3_lattices X0 X1 X2 = g3_lattices X3 X4 X5) \Rightarrow ((X0 = X3) \wedge ((X1 = X4) \wedge \\ & (X2 = X5)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 \\ & X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \wedge ((v1_funct_1 X2) \wedge ((\\ & v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow ((\neg v2_struct_0 (g3_lattices \\ & X0 X1 X2)) \wedge (v3_lattices (g3_lattices X0 X1 X2))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (\neg v1_xboole_0 (k1_lopclset X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l3_lattices\ X0)\Rightarrow((l1_lattices\ X0)\wedge(l2_lattices\ X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ X0)))\Rightarrow((v1_funct_1\ (k5_lopclset\ X0))\wedge((v1_funct_2\ (k5_lopclset \\ X0)\ (k2_zfmisc_1\ (k1_lopclset\ X0)\ (k1_lopclset\ X0))\ (k1_lopclset \\ X0))\wedge(m1_subset_1\ (k5_lopclset\ X0)\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ (k2_zfmisc_1\ (k1_lopclset\ X0)\ (k1_lopclset\ X0))\ (k1_lopclset \\ X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ X0)))\Rightarrow((v1_funct_1\ (k4_lopclset\ X0))\wedge((v1_funct_2\ (k4_lopclset \\ X0)\ (k2_zfmisc_1\ (k1_lopclset\ X0)\ (k1_lopclset\ X0))\ (k1_lopclset \\ X0))\wedge(m1_subset_1\ (k4_lopclset\ X0)\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ (k2_zfmisc_1\ (k1_lopclset\ X0)\ (k1_lopclset\ X0))\ (k1_lopclset \\ X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v1_funct_1\ X1)\wedge((v1_funct_2 \\ X1\ (k2_zfmisc_1\ X0\ X0)\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ (k2_zfmisc_1\ X0\ X0)\ X0))))))\wedge((v1_funct_1\ X2)\wedge((v1_funct_2\ X2 \\ (k2_zfmisc_1\ X0\ X0)\ X0)\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ (k2_zfmisc_1\ X0\ X0)\ X0))))))\Rightarrow((v3_lattices\ (g3_lattices\ X0\ X1 \\ X2))\wedge(l3_lattices\ (g3_lattices\ X0\ X1\ X2))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ X0)))\Rightarrow(\forall X1.((v1_funct_1\ X1)\wedge((v1_funct_2\ X1\ (k2_zfmisc_1 \\ (k1_lopclset\ X0)\ (k1_lopclset\ X0))\ (k1_lopclset\ X0))\wedge(m1_subset_1 \\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k2_zfmisc_1\ (k1_lopclset\ X0)\ (k1_lopclset \\ X0))\ (k1_lopclset\ X0))))))\Rightarrow((X1 = k5_lopclset\ X0)\Leftrightarrow(\forall X2. \\ (m2_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0))\ (k1_lopclset\ X0))\Rightarrow \\ (\forall X3.(m2_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0))\ (k1_lopclset \\ X0))\Rightarrow(k5_binop_1\ (k1_lopclset\ X0)\ X1\ X2\ X3 = k3_lopclset\ X0\ X2\ X3)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge(l1_lattices\ X0))\Rightarrow(\forall X1. \\ (m1_subset_1\ X1\ (u1_struct_0\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2 \\ (u1_struct_0\ X0))\Rightarrow(k2_lattices\ X0\ X1\ X2 = k5_binop_1\ (u1_struct_0 \\ X0)\ (u1_lattices\ X0)\ X1\ X2))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0. (l3_lattices\ X0) \Rightarrow ((v3_lattices\ X0) \Rightarrow (X0 = g3_lattices\ (u1_struct_0\ X0)\ (u2_lattices\ X0)\ (u1_lattices\ X0))) \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0\ X0) \wedge ((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0))) \Rightarrow (\forall X1. (m1_subset_1\ X1\ (u1_struct_0\ (g3_lattices\ (k1_lopclset\ X0)\ (k4_lopclset\ X0)\ (k5_lopclset\ X0)))) \Rightarrow (\forall X2. \\ & (m1_subset_1\ X2\ (u1_struct_0\ (g3_lattices\ (k1_lopclset\ X0)\ (k4_lopclset\ X0)\ (k5_lopclset\ X0)))) \Rightarrow (\forall X3. (m2_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0)\ (k1_lopclset\ X0))) \Rightarrow (\forall X4. (m2_subset_1\ X4\ (k1_zfmisc_1\ (u1_struct_0\ X0)\ (k1_lopclset\ X0))) \Rightarrow (((X1 = X3) \wedge (X2 = X4)) \Rightarrow (k2_lattices\ (g3_lattices\ (k1_lopclset\ X0)\ (k4_lopclset\ X0)\ (k5_lopclset\ X0))\ X1\ X2 = k3_lopclset\ X0\ X3\ X4)))))) \end{aligned}$$