

t4_lattice5 (TMVHoYJyMsfDTRBXHfxaK- WkwW4ocdyGeMa)

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Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_lattice5 : \iota \Rightarrow \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_relat_2 : \iota \Rightarrow o$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $k2_msualg_5 : \iota \Rightarrow \iota$ be given. Let $v3_lattices : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $k2_lattice3 : \iota \Rightarrow \iota$ be given. Let $v1_relat_2 : \iota \Rightarrow o$ be given. Let $v4_relat_2 : \iota \Rightarrow o$ be given. Let $v1_orders_2 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Let $k4_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ be given. Let $k5_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_lattice3 : \iota \Rightarrow \iota$ be given. Let $u1_orders_2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 X0))) \Rightarrow (\forall X2. \forall X3. (g1_orders_2 X0 X1 = g1_orders_2 \\ X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (\neg v2_struct_0 (k2_msualg_5 X0)) \wedge ((v3_lattices (k2_msualg_5 \\ X0)) \wedge ((v10_lattices (k2_msualg_5 X0)) \wedge (l3_lattices (k2_msualg_5 \\ X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ X0))) \Rightarrow ((v1_partfun1 (k2_lattice3 X0) (u1_struct_0 X0)) \wedge ((v1_relat_2 \\ (k2_lattice3 X0)) \wedge ((v4_relat_2 (k2_lattice3 X0)) \wedge ((v8_relat_2 \\ (k2_lattice3 X0)) \wedge (m1_subset_1 (k2_lattice3 X0) (k1_zfmisc_1 \\ (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))\Rightarrow((v1_orders_2 (g1_orders_2 X0 X1))\wedge(l1_orders_2 (g1_orders_2 X0 X1))) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v2_struct_0 X1)\wedge((v3_lattices X1)\wedge \\ & ((v10_lattices X1)\wedge(l3_lattices X1))))\Rightarrow((X1 = k2_msualg_5 X0)\Leftrightarrow \\ & ((u1_struct_0 X1 = ReplSep (toset (\lambda X2 : \iota.m1_subset_1 X2 (\\ & k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))) (\lambda X2 : \iota.(v1_partfun1 \\ & X2 X0)\wedge((v3_relat_2 X2)\wedge((v8_relat_2 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0)))))) (\lambda X2 : \iota.X2))\wedge(\forall X2.((v1_partfun1 \\ & X2 X0)\wedge((v3_relat_2 X2)\wedge((v8_relat_2 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0))))))\Rightarrow(\forall X3.((v1_partfun1 X3 X0)\wedge((\\ & v3_relat_2 X3)\wedge((v8_relat_2 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0))))))\Rightarrow((k1_binop_1 (u1_lattices X1) X2 X3 = \\ & k4_eqrel_1 X0 X2 X3)\wedge(k1_binop_1 (u2_lattices X1) X2 X3 = k5_eqrel_1 \\ & X0 X2 X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices X0)))\Rightarrow(k3_lattice3 X0 = g1_orders_2 (u1_struct_0 X0) (k2_lattice3 X0)) \quad (6)$$

Assume the following.

$$\forall X0.k1_lattice5 X0 = k3_lattice3 (k2_msualg_5 X0) \quad (7)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0)\Rightarrow((v1_orders_2 X0)\Rightarrow(X0 = g1_orders_2 (u1_struct_0 X0) (u1_orders_2 X0))) \quad (8)$$

Theorem 1

$$\forall X0.\forall X1.(X1 \in u1_struct_0 (k1_lattice5 X0))\Leftrightarrow((v1_partfun1 X1 X0)\wedge((v3_relat_2 X1)\wedge((v8_relat_2 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0))))))$$