

t22_real_lat
(TMJ6Sqzb972USbGv2pqyydsjypSbw3JUGLq)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_real_lat : \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_real_lat : \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_lattices : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_lattices : \iota \Rightarrow o$ be given. Let $v5_lattices : \iota \Rightarrow o$ be given. Let $v7_lattices : \iota \Rightarrow o$ be given. Let $v8_lattices : \iota \Rightarrow o$ be given. Let $v9_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $v3_lattices : \iota \Rightarrow o$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k4_real_lat : \iota \Rightarrow \iota$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X1) \wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \wedge ((m1_subset_1 X2 X0) \wedge \\ & (m1_subset_1 X3 X0))) \Rightarrow (k5_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v6_lattices \\ & X0) \wedge (l1_lattices X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge \\ & (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k4_lattices X0 X1 X2 = k2_lattices \\ & X0 X1 X2) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1)\wedge((v1_funct_2 \\ & X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0) X0))))\wedge((v1_funct_1 X2)\wedge((v1_funct_2 X2 \\ & (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0) X0))))))\Rightarrow(\forall X3.\forall X4.\forall X5. \\ & (g3_lattices X0 X1 X2 = g3_lattices X3 X4 X5)\Rightarrow((X0 = X3)\wedge((X1 = X4)\wedge \\ & (X2 = X5)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow((\neg v2_struct_0 (k6_real_lat X0))\wedge \\ & ((v4_lattices (k6_real_lat X0))\wedge((v5_lattices (k6_real_lat \\ & X0))\wedge((v6_lattices (k6_real_lat X0))\wedge((v7_lattices (k6_real_lat \\ & X0))\wedge((v8_lattices (k6_real_lat X0))\wedge(v9_lattices (k6_real_lat \\ & X0)))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(l3_lattices X0)\Rightarrow((l1_lattices X0)\wedge(l2_lattices X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow((\neg v2_struct_0 (k6_real_lat X0))\wedge \\ & ((v3_lattices (k6_real_lat X0))\wedge(l3_lattices (k6_real_lat X0)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow((v1_funct_1 (k5_real_lat X0))\wedge \\ & ((v1_funct_2 (k5_real_lat X0) (k2_zfmisc_1 (k9_funct_2 X0 k1_numbers) \\ & (k9_funct_2 X0 k1_numbers)) (k9_funct_2 X0 k1_numbers))\wedge(m1_subset_1 \\ & (k5_real_lat X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k9_funct_2 \\ & X0 k1_numbers) (k9_funct_2 X0 k1_numbers)) (k9_funct_2 X0 k1_numbers)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow((v1_funct_1 (k4_real_lat X0))\wedge \\ & ((v1_funct_2 (k4_real_lat X0) (k2_zfmisc_1 (k9_funct_2 X0 k1_numbers) \\ & (k9_funct_2 X0 k1_numbers)) (k9_funct_2 X0 k1_numbers))\wedge(m1_subset_1 \\ & (k4_real_lat X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k9_funct_2 \\ & X0 k1_numbers) (k9_funct_2 X0 k1_numbers)) (k9_funct_2 X0 k1_numbers)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(k6_real_lat X0 = g3_lattices (k9_funct_2 X0 k1_numbers) (k4_real_lat X0) (k5_real_lat X0)) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l1_lattices X0)) \Rightarrow (\forall X1. \\ (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ (u1_struct_0 X0)) \Rightarrow (k2_lattices X0 X1 X2 = k5_binop_1 (u1_struct_0 \\ X0) (u1_lattices X0) X1 X2))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge (v6_lattices \\ X0) \wedge (l1_lattices X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ m1_subset_1 X2 (u1_struct_0 X0))) \Rightarrow (k4_lattices X0 X1 X2 = k4_lattices \\ X0 X2 X1) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_lattices X0) \Rightarrow ((v3_lattices X0) \Rightarrow (X0 = g3_lattices \\ (u1_struct_0 X0) (u2_lattices X0) (u1_lattices X0))) \end{aligned} \quad (12)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ (k6_real_lat X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ (k6_real_lat X0))) \Rightarrow (k1_binop_1 (k5_real_lat X0) X1 X2 = k1_binop_1 \\ (k5_real_lat X0) X2 X1))) \end{aligned}$$