

t46_tdlat_3 (TMUPJVQDTNsgDKRdL- SJc8hVSgC5BcwuwUxq)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $v4_tdlat_3 : \iota \Rightarrow o$ 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 $k4_tdlat_1 : \iota \Rightarrow \iota$ be given. Let $k1_tdlat_1 : \iota \Rightarrow \iota$ be given. Let $k3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tdlat_1 : \iota \Rightarrow \iota$ be given. Let $k3_tdlat_1 : \iota \Rightarrow \iota$ be given. Let $v6_lattices : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $k2_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $k1_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $g3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v15_lattices : \iota \Rightarrow o$ be given. Let $v16_lattices : \iota \Rightarrow o$ be given. Let $v3_lattices : \iota \Rightarrow o$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ 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. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge ((v4_tdlat_3 \\
& X0) \wedge (l1_pre_topc X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_tdlat_1 \\
& X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_tdlat_1 X0)) \Rightarrow ((k5_binop_1 \\
& (k1_tdlat_1 X0) (k2_tdlat_1 X0) X1 X2 = k2_xboole_0 X1 X2) \wedge (k5_binop_1 \\
& (k1_tdlat_1 X0) (k3_tdlat_1 X0) X1 X2 = k3_xboole_0 X1 X2))))
\end{aligned} \tag{1}$$

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.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(v4_lattices \\ X0)\wedge(l2_lattices X0)))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(\\ m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow(k3_lattices X0 X1 X2 = k1_lattices \\ X0 X1 X2) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1)\wedge(v1_funct_2 \\ X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ (k2_zfmisc_1 X0 X0) X0))))\wedge((v1_funct_1 X2)\wedge(v1_funct_2 X2 \\ (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ (k2_zfmisc_1 X0 X0) X0))))))\Rightarrow(\forall X3.\forall X4.\forall X5. \\ (g3_lattices X0 X1 X2 = g3_lattices X3 X4 X5)\Rightarrow((X0 = X3)\wedge((X1 = X4)\wedge \\ (X2 = X5)))) \end{aligned} \quad (4)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.((v2_pre_topc X0)\wedge(l1_pre_topc X0))\Rightarrow((\neg v2_struct_0 \\ (k4_tdlat_1 X0))\wedge((v10_lattices (k4_tdlat_1 X0))\wedge((v15_lattices \\ (k4_tdlat_1 X0))\wedge((v16_lattices (k4_tdlat_1 X0))\wedge(l3_lattices \\ (k4_tdlat_1 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((v2_pre_topc X0)\wedge(l1_pre_topc X0))\Rightarrow((v1_funct_1 \\ (k3_tdlat_1 X0))\wedge((v1_funct_2 (k3_tdlat_1 X0) (k2_zfmisc_1 (\\ k1_tdlat_1 X0) (k1_tdlat_1 X0)) (k1_tdlat_1 X0))\wedge(m1_subset_1 \\ (k3_tdlat_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k1_tdlat_1 \\ X0) (k1_tdlat_1 X0)) (k1_tdlat_1 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((v2_pre_topc X0)\wedge(l1_pre_topc X0))\Rightarrow((v1_funct_1 \\ (k2_tdlat_1 X0))\wedge((v1_funct_2 (k2_tdlat_1 X0) (k2_zfmisc_1 (\\ k1_tdlat_1 X0) (k1_tdlat_1 X0)) (k1_tdlat_1 X0))\wedge(m1_subset_1 \\ (k2_tdlat_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k1_tdlat_1 \\ X0) (k1_tdlat_1 X0)) (k1_tdlat_1 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_funct_1 X1) \wedge ((v1_funct_2 \\ & X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0) X0)))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 \\ & (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow ((v3_lattices (g3_lattices X0 X1 \\ & X2)) \wedge (l3_lattices (g3_lattices X0 X1 X2))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (k4_tdlat_1 \\ & X0 = g3_lattices (k1_tdlat_1 X0) (k2_tdlat_1 X0) (k3_tdlat_1 X0)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_lattices X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 \\ & (u1_struct_0 X0)) \Rightarrow (k2_lattices X0 X1 X2 = k5_binop_1 (u1_struct_0 \\ & X0) (u1_lattices X0) X1 X2))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l2_lattices X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 \\ & (u1_struct_0 X0)) \Rightarrow (k1_lattices X0 X1 X2 = k5_binop_1 (u1_struct_0 \\ & X0) (u2_lattices X0) X1 X2))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l3_lattices X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v10_lattices \\ & X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v4_lattices X0) \wedge ((v5_lattices X0) \wedge \\ & ((v6_lattices X0) \wedge ((v7_lattices X0) \wedge ((v8_lattices X0) \wedge (v9_lattices \\ & X0)))))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l3_lattices X0) \Rightarrow ((v3_lattices X0) \Rightarrow (X0 = g3_lattices \\ & (u1_struct_0 X0) (u2_lattices X0) (u1_lattices X0))) \end{aligned} \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge ((v4_tdlat_3 \\ & X0) \wedge (l1_pre_topc X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ & (k4_tdlat_1 X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 (\\ & k4_tdlat_1 X0))) \Rightarrow (\forall X3. (m1_subset_1 X3 (k1_tdlat_1 X0)) \Rightarrow \\ & (\forall X4. (m1_subset_1 X4 (k1_tdlat_1 X0)) \Rightarrow (((X1 = X3) \wedge (X2 = \\ & X4)) \Rightarrow ((k3_lattices (k4_tdlat_1 X0) X1 X2 = k2_xboole_0 X3 X4) \wedge (\\ & k4_lattices (k4_tdlat_1 X0) X1 X2 = k3_xboole_0 X3 X4))))))))) \end{aligned}$$