

t35_filter_2 (TM-
PZRKefHAc71epx2G9dNXAU6SRHommo8k9)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v14_lattices : \iota \Rightarrow o$ be given. Let $k6_lattices : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v18_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v21_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r2_filter_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_lattices : \iota \Rightarrow \iota$ be given. Let $k1_lattice2 : \iota \Rightarrow \iota$ be given. Let $v13_lattices : \iota \Rightarrow o$ be given. Let $v1_filter_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v19_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v20_lattices : \iota \Rightarrow \iota \Rightarrow o$ 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 $g3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(X0 \in X1) \wedge (v1_xboole_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v14_lattices X0) \wedge (l3_lattices X0)))) \Rightarrow (k6_lattices X0 = k5_lattices (k1_lattice2 X0)) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow ((v14_lattices X0) \Leftrightarrow (v13_lattices (k1_lattice2 X0))) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge ((v18_lattices X1 X0) \wedge ((v21_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow ((r2_filter_2 X0 X1) \Leftrightarrow (v1_filter_0 (k3_filter_2 X0 X1) (k1_lattice2 X0)))) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\neg((\neg v2_struct_0 \\ X0) \wedge ((v10_lattices X0) \wedge ((v13_lattices X0) \wedge (l3_lattices X0)))) \wedge \\ ((X1 \neq k5_lattices X0) \wedge (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v19_lattices \\ X2 X0) \wedge ((v20_lattices X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ X0)))))) \Rightarrow (\neg(X1 \in X2) \wedge (v1_filter_0 X2 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1) \wedge ((v1_funct_2 \\ X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ (k2_zfmisc_1 X0 X0) X0)))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 \\ (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X3.\forall X4.\forall X5. \\ (g3_lattices X0 X1 X2 = g3_lattices X3 X4 X5) \Rightarrow ((X0 = X3) \wedge ((X1 = X4) \wedge \\ (X2 = X5)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ (l3_lattices X0))) \wedge ((v19_lattices X1 (k1_lattice2 X0)) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 (u1_struct_0 (k1_lattice2 X0)))))) \Rightarrow (v18_lattices \\ (k4_filter_2 X0 X1) X0) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ X0))) \Rightarrow ((v3_lattices (k1_lattice2 X0)) \wedge (v10_lattices (k1_lattice2 \\ X0))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ (l3_lattices X0))) \wedge ((v20_lattices X1 (k1_lattice2 X0)) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 (u1_struct_0 (k1_lattice2 X0)))))) \Rightarrow (v21_lattices \\ (k4_filter_2 X0 X1) X0) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l3_lattices X0)) \Rightarrow ((\neg v2_struct_0 \\ (k1_lattice2 X0)) \wedge (v3_lattices (k1_lattice2 X0))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(l2_lattices X0) \Rightarrow ((v1_funct_1 (u2_lattices X0)) \wedge \\ ((v1_funct_2 (u2_lattices X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ u1_struct_0 X0)) (u1_struct_0 X0)) \wedge (m1_subset_1 (u2_lattices \\ X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (\\ u1_struct_0 X0)) (u1_struct_0 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_lattices\ X0) \Rightarrow & ((v1_funct_1\ (u1_lattices\ X0)) \wedge \\ & ((v1_funct_2\ (u1_lattices\ X0)\ (k2_zfmisc_1\ (u1_struct_0\ X0)\ (\\ & u1_struct_0\ X0))\ (u1_struct_0\ X0)) \wedge (m1_subset_1\ (u1_lattices \\ & X0)\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0\ X0)\ (\\ & u1_struct_0\ X0))\ (u1_struct_0\ X0)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(l3_lattices\ X0) \Rightarrow ((l1_lattices\ X0) \wedge (l2_lattices\ X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l3_lattices\ X0) \Rightarrow ((v3_lattices\ (k1_lattice2\ X0)) \wedge (l3_lattices\ (k1_lattice2\ X0))) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0) \wedge ((v10_lattices\ X0) \wedge (l3_lattices \\ X0))) \Rightarrow & (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0 \\ (k1_lattice2\ X0)))) \Rightarrow (k4_filter_2\ X0\ X1 = X1)) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0) \wedge ((v10_lattices\ X0) \wedge (l3_lattices \\ X0))) \Rightarrow & (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0 \\ X0))) \Rightarrow (k3_filter_2\ X0\ X1 = X1)) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.(l3_lattices\ X0) \Rightarrow (k1_lattice2\ X0 = g3_lattices\ (u1_struct_0\ X0)\ (u1_lattices\ X0)\ (u2_lattices\ X0)) \quad (17)$$

Assume the following.

$$\forall X0.(l3_lattices\ X0) \Rightarrow ((v3_lattices\ X0) \Rightarrow (X0 = g3_lattices\ (u1_struct_0\ X0)\ (u2_lattices\ X0)\ (u1_lattices\ X0))) \quad (18)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0) \wedge ((v10_lattices\ X0) \wedge (l3_lattices \\ X0))) \Rightarrow & (\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow (\neg (v14_lattices \\ X0) \wedge ((X1 \neq k6_lattices\ X0) \wedge (\forall X2.((\neg v1_xboole_0\ X2) \wedge (\\ v18_lattices\ X2\ X0) \wedge ((v21_lattices\ X2\ X0) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1 \\ (u1_struct_0\ X0)))))) \Rightarrow (\neg (X1 \in X2) \wedge (r2_filter_2\ X0\ X2)))))) \end{aligned}$$