

t34_filter_2

(TMHHPp2VYpQiV1atwKc4ZFM6prvmsyRYLB3)

October 27, 2020

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 $k3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_lattice2 : \iota \Rightarrow \iota$ be given. Let $k1_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_boolealg : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k5_filter_2 : \iota \Rightarrow \iota$ be given. Let $v18_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v21_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v19_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v20_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((k6_filter_2 \\ X0 X1 = k2_filter_0 (k1_lattice2 X0) (k1_filter_2 X0 X1)) \wedge (k6_filter_2 \\ (k1_lattice2 X0) (k1_filter_2 X0 X1) = k2_filter_0 X0 X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X1 \in k2_filter_0 X0 X1) \wedge ((\\ k3_lattices X0 X1 X2 \in k2_filter_0 X0 X1) \wedge (k3_lattices X0 X2 X1 \in k2_filter_0 \\ X0 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v10_lattices \\ X0) \wedge (l3_lattices X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow ((r1_boolealg X0 X1 X2) \Leftrightarrow (X1 = \\ X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow ((\neg v1_xboole_0 (k5_filter_2 X0)) \wedge ((v18_lattices (k5_filter_2 X0) X0) \wedge ((v21_lattices (k5_filter_2 X0) X0) \wedge (m1_subset_1 (k5_filter_2 X0) (k1_zfmisc_1 (u1_struct_0 X0))))))) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow ((\neg v1_xboole_0 (k2_filter_0 X0 X1)) \wedge ((v19_lattices (k2_filter_0 X0 X1) X0) \wedge ((v20_lattices (k2_filter_0 X0 X1) X0) \wedge (m1_subset_1 (k2_filter_0 X0 X1) (k1_zfmisc_1 (u1_struct_0 X0))))))) \quad (6)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k6_filter_2 X0 X1 = ReplSep (toset (\lambda X2 : \iota. m1_subset_1 X2 (u1_struct_0 X0)) (\lambda X2 : \iota. r3_lattices X0 X2 X1) (\lambda X2 : \iota. X2)))) \quad (7)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (k5_filter_2 X0 = u1_struct_0 X0) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \quad (9)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((r1_boolealg X0 X1 X2) \Leftrightarrow ((r3_lattices X0 X1 X2) \wedge (r3_lattices X0 X2 X1)))))) \quad (10)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k1_filter_2 X0 X1 = X1)) \quad (11)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k2_filter_0 X0 X1 = ReplSep (toset (\lambda X2 : \iota. m1_subset_1 X2 (u1_struct_0 X0)) (\lambda X2 : \iota. r3_lattices X0 X1 X2) (\lambda X2 : \iota. X2)))) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \Rightarrow ((m1_subset_1 X1 X0) \Leftrightarrow \\ & (X1 \in X0))) \wedge ((v1_xboole_0 X0) \Rightarrow ((m1_subset_1 X1 X0) \Leftrightarrow (v1_xboole_0 \\ & X1))) \end{aligned} \tag{13}$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\neg(\neg \forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k3_lattices X0 X1 X2 = X1)) \wedge \\ & (k6_filter_2 X0 X1 = u1_struct_0 X0))) \end{aligned}$$