

t64_filter_0
(TMajher8YLJyNqGzFp8vCi6W1iZbMjRCujZ)

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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v19_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v20_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v3_filter_0 : \iota \Rightarrow o$ be given. Let $r1_relat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_lattices : \iota \Rightarrow \iota$ be given. Let $v14_lattices : \iota \Rightarrow o$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relat_1 : \iota \Rightarrow \iota$ be given. Let $k7_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

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

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v3_filter_0 X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k4_filter_0 X0 X1 X1 = k6_lattices X0)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge ((v19_lattices X1 X0) \wedge ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v14_lattices X0) \wedge (l3_lattices X0)))) \Rightarrow (k6_lattices X0 \in X1))) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & ((\neg v1_xboole_0 X1)\wedge((m1_subset_1 X2 X0)\wedge(m1_subset_1 X3 X1))))\Rightarrow \\ & (k1_domain_1 X0 X1 X2 X3 = k4_tarski X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge \\ & ((v14_lattices X0)\wedge(l3_lattices X0))))\wedge(m1_subset_1 X1 (u1_struct_0 \\ & X0)))\Rightarrow(k4_lattices X0 (k6_lattices X0) X1 = X1) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(l3_lattices X0)\Rightarrow((l1_lattices X0)\wedge(l2_lattices X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge \\ & (l3_lattices X0)))\wedge((\neg v1_xboole_0 X1)\wedge((v19_lattices X1 X0)\wedge \\ & ((v20_lattices X1 X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))))\Rightarrow(v1_relat_1 (k8_filter_0 X0 X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l2_lattices X0))\Rightarrow(m1_subset_1 (k6_lattices X0) (u1_struct_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.k4_tarski X0 X1 = k2_tarski (k2_tarski X0 X1) (k1_tarski X0) \quad (10)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow(\forall X1.(r1_relat_2 X0 X1)\Leftrightarrow(\forall X2.(X2 \in X1)\Rightarrow(k4_tarski X2 X2 \in X0))) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices \\ & X0)))\Rightarrow(\forall X1.((\neg v1_xboole_0 X1)\wedge((v19_lattices X1 X0)\wedge \\ & ((v20_lattices X1 X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))))))\Rightarrow(\forall X2.(v1_relat_1 X2)\Rightarrow((X2 = k8_filter_0 X0 X1)\Leftrightarrow \\ & ((r1_tarski (k1_relat_1 X2) (u1_struct_0 X0))\wedge(\forall X3.(m1_subset_1 \\ & X3 (u1_struct_0 X0))\Rightarrow(\forall X4.(m1_subset_1 X4 (u1_struct_0 \\ & X0))\Rightarrow((k1_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X3 X4 \in X2)\Leftrightarrow \\ & (k7_filter_0 X0 X3 X4 \in X1)))))))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k7_filter_0 X0 X1 X2 = k4_lattices \\ & X0 (k4_filter_0 X0 X1 X2) (k4_filter_0 X0 X2 X1)))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.k2_tarski X0 X1 = k2_tarski X1 X0 \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l3_lattices X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v10_lattices \\ & X0) \wedge (v3_filter_0 X0))) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ & (v14_lattices X0) \wedge (v3_filter_0 X0)))))) \end{aligned} \quad (15)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v19_lattices X1 X0) \wedge \\ & ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (v3_filter_0 \\ & X0) \wedge (l3_lattices X0))) \Rightarrow (r1_relat_2 (k8_filter_0 X0 X1) (u1_struct_0 \\ & X0)))) \end{aligned}$$