

t66_filter_2 (TMLPF- SAmqQBZy5bpn1d5tcMNaecRXikZhBw)

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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 $v13_lattices : \iota \Rightarrow o$ be given. Let $r1_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_lattices : \iota \Rightarrow \iota$ be given. Let $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $v20_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v21_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v18_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow ((r3_lattices X0 X1 X2) \Rightarrow ((X3 \in k9_filter_2 X0 \\ & X1 X2) \Leftrightarrow ((r3_lattices X0 X1 X3) \wedge (r3_lattices X0 X3 X2))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg (X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X1 \in k6_filter_2 X0 X2) \Leftrightarrow (r3_lattices \\ & X0 X1 X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v13_lattices \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (r3_lattices X0 (k5_lattices X0) X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(l3_lattices\ X0)\Rightarrow((l1_lattices\ X0)\wedge(l2_lattices\ X0)) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0\ X0)\wedge((v10_lattices\ X0)\wedge(l3_lattices\ X0)))\wedge((m1_subset_1\ X1\ (u1_struct_0\ X0))\wedge(m1_subset_1\ X2\ (u1_struct_0\ X0))))\Rightarrow((\neg v1_xboole_0\ (k9_filter_2\ X0\ X1\ X2))\wedge((v20_lattices\ (k9_filter_2\ X0\ X1\ X2)\ X0)\wedge((v21_lattices\ (k9_filter_2\ X0\ X1\ X2)\ X0)\wedge(m1_subset_1\ (k9_filter_2\ X0\ X1\ X2)\ (k1_zfmisc_1\ (u1_struct_0\ X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0\ X0)\wedge((v10_lattices\ X0)\wedge(l3_lattices\ X0)))\wedge(m1_subset_1\ X1\ (u1_struct_0\ X0)))\Rightarrow((\neg v1_xboole_0\ (k6_filter_2\ X0\ X1))\wedge((v18_lattices\ (k6_filter_2\ X0\ X1)\ X0)\wedge((v21_lattices\ (k6_filter_2\ X0\ X1)\ X0)\wedge(m1_subset_1\ (k6_filter_2\ X0\ X1)\ (k1_zfmisc_1\ (u1_struct_0\ X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0\ X0)\wedge(l1_lattices\ X0))\Rightarrow(m1_subset_1\ (k5_lattices\ X0)\ (u1_struct_0\ X0)) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0\ X0)\Rightarrow((m1_subset_1\ X1\ X0)\Leftrightarrow(X1 \in X0)))\wedge((v1_xboole_0\ X0)\Rightarrow((m1_subset_1\ X1\ X0)\Leftrightarrow(v1_xboole_0\ X1))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ X0))\Rightarrow((r1_filter_2\ X0\ X1\ X2)\Leftrightarrow(\forall X3.(m1_subset_1\ X3\ X0)\Rightarrow((X3 \in X1)\Leftrightarrow(X3 \in X2)))))) \end{aligned} \quad (11)$$

Theorem 1

$$\begin{aligned} \forall X0.(((\neg v2_struct_0\ X0)\wedge((v10_lattices\ X0)\wedge(l3_lattices\ X0)))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0))\Rightarrow((v13_lattices\ X0)\Rightarrow(r1_filter_2\ (u1_struct_0\ X0)\ (k6_filter_2\ X0\ X1)\ (k9_filter_2\ X0\ (k5_lattices\ X0)\ X1)))) \end{aligned}$$