

t65_filter_2

(TMTmk4UFEL4T6EMGWsEKsfqf8p7wTXC9pw5)

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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 $r1_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_lattices : \iota \Rightarrow \iota$ be given. Let $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v19_lattices : \iota \Rightarrow \iota \Rightarrow o$ 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.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v14_lattices \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (r3_lattices X0 X1 (k6_lattices X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X1 \in k2_filter_0 X0 X2) \Leftrightarrow (r3_lattices \\ & X0 X2 X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 \\ & (u1_struct_0 X0)) \end{aligned} \quad (4)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l2_lattices\ X0)\Rightarrow(l1_struct_0\ X0) \quad (6)$$

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.

$$\forall X0.((\neg v2_struct_0\ X0)\wedge(l2_lattices\ X0))\Rightarrow(m1_subset_1 \\ (k6_lattices\ X0)\ (u1_struct_0\ X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0\ X0)\wedge((v10_lattices\ X0)\wedge \\ (l3_lattices\ X0)))\wedge(m1_subset_1\ X1\ (u1_struct_0\ X0)))\Rightarrow((\neg v1_xboole_0 \\ (k2_filter_0\ X0\ X1))\wedge((v19_lattices\ (k2_filter_0\ X0\ X1)\ X0)\wedge(\\ (v20_lattices\ (k2_filter_0\ X0\ X1)\ X0)\wedge(m1_subset_1\ (k2_filter_0 \\ X0\ X1)\ (k1_zfmisc_1\ (u1_struct_0\ X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ X0))\Rightarrow((r1_filter_2 \\ X0\ X1\ X2)\Leftrightarrow(\forall X3.(m1_subset_1\ X3\ X0)\Rightarrow((X3\in X1)\Leftrightarrow(X3\in X2)))))) \end{aligned} \quad (10)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge((v10_lattices\ X0)\wedge(l3_lattices \\ X0)))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0))\Rightarrow((v14_lattices \\ X0)\Rightarrow(r1_filter_2\ (u1_struct_0\ X0)\ (k2_filter_0\ X0\ X1)\ (k9_filter_2 \\ X0\ X1\ (k6_lattices\ X0)))) \end{aligned}$$