

t58_filter_0

(TMP2DdJrfvJKLg3kFNZMc4aJZmGsL7SZCbT)

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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 $v15_lattices : \iota \Rightarrow o$ be given. Let $k6_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v13_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v19_lattices X1 X0) \wedge \\ & ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow ((v14_lattices X0) \Rightarrow (v14_lattices (k6_filter_0 X0 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ & (l3_lattices X0))) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow ((\neg v2_struct_0 \\ & (k6_filter_0 X0 (k2_filter_0 X0 X1))) \wedge ((v10_lattices (k6_filter_0 \\ & X0 (k2_filter_0 X0 X1))) \wedge (v13_lattices (k6_filter_0 X0 (k2_filter_0 \\ & X0 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ & (l3_lattices X0))) \wedge ((\neg v1_xboole_0 X1) \wedge ((v19_lattices X1 X0) \wedge \\ & ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow ((\neg v2_struct_0 (k6_filter_0 X0 X1)) \wedge ((v10_lattices \\ & (k6_filter_0 X0 X1)) \wedge (l3_lattices (k6_filter_0 X0 X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge \\ (l3_lattices X0)))\wedge(m1_subset_1 X1 (u1_struct_0 X0)))\Rightarrow((\neg v1_xboole_0 \\ (k2_filter_0 X0 X1))\wedge((v19_lattices (k2_filter_0 X0 X1) X0)\wedge \\ (v20_lattices (k2_filter_0 X0 X1) X0)\wedge(m1_subset_1 (k2_filter_0 \\ X0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(l3_lattices X0)\Rightarrow(((\neg v2_struct_0 X0)\wedge((v13_lattices X0)\wedge(v14_lattices X0)))\Rightarrow((\neg v2_struct_0 X0)\wedge(v15_lattices X0))) \quad (5)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices \\ X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(((\neg v2_struct_0 \\ X0)\wedge((v10_lattices X0)\wedge((v14_lattices X0)\wedge(l3_lattices X0))))\Rightarrow \\ (v15_lattices (k6_filter_0 X0 (k2_filter_0 X0 X1)))) \end{aligned}$$