

t58_filter_2 (TM-
cmXRZQjR2WCyTE25D1TgMD7saW5XTpa6r)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v17_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v18_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v21_lattices : \iota \Rightarrow \iota \Rightarrow o$ 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 $r2_filter_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_lattices : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v14_lattices : \iota \Rightarrow o$ be given. Let $k6_lattices : \iota \Rightarrow \iota$ be given. Let $r1_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_filter_2 : \iota \Rightarrow \iota$ be given. Let $k3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v11_lattices : \iota \Rightarrow o$ be given. Let $v15_lattices : \iota \Rightarrow o$ be given. Let $v16_lattices : \iota \Rightarrow o$ be given. Let $v13_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v18_lattices \\ & X1 X0) \wedge ((v21_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow ((r2_filter_2 X0 X1) \Leftrightarrow ((X1 \neq u1_struct_0 X0) \wedge (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X2 \in X1) \vee (k7_lattices X0 X2 \in \\ & X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v18_lattices X1 X0) \wedge \\ & ((v21_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow (((v14_lattices X0) \wedge (k6_lattices X0 \in X1)) \Rightarrow ((r1_filter_2 \\ & (u1_struct_0 X0) X1 (k5_filter_2 X0)) \wedge (X1 = u1_struct_0 X0)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (k3_lattices X0 (k7_lattices X0 X1) X1 = k6_lattices X0)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
& X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v18_lattices X1 X0) \wedge \\
& ((v21_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))) \Rightarrow ((r2_filter_2 X0 X1) \Leftrightarrow ((X1 \neq u1_struct_0 X0) \wedge (\forall X2. \\
& ((\neg v1_xboole_0 X2) \wedge ((v18_lattices X2 X0) \wedge ((v21_lattices X2 X0) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow ((r1_tarSKI \\
& X1 X2) \Rightarrow ((X2 = u1_struct_0 X0) \vee (r1_filter_2 (u1_struct_0 X0) X1 \\
& X2))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0))) \Rightarrow ((v21_lattices X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (((X2 \in X1) \wedge \\
& (X3 \in X1)) \Rightarrow (k3_lattices X0 X2 X3 \in X1))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l3_lattices X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v17_lattices \\
& X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v11_lattices X0) \wedge ((v15_lattices \\
& X0) \wedge (v16_lattices X0))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l3_lattices X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v15_lattices \\
& X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v13_lattices X0) \wedge (v14_lattices X0))))
\end{aligned} \tag{8}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices \\
& X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v18_lattices \\
& X1 X0) \wedge ((v21_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))) \Rightarrow ((r2_filter_2 X0 X1) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow ((X2 \in X1) \Leftrightarrow (\neg k7_lattices X0 X2 \in X1))))))
\end{aligned}$$