

t39_filter_2

(TMKUzSEdCH6RJ9u39VTEKHo94WrfnkASqU8)

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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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v18_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v21_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X1 \in k6_filter_2 X0 X2) \Leftrightarrow (r3_lattices X0 X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))))) \Rightarrow ((\neg v1_xboole_0 (k7_filter_2 X0 X1)) \wedge ((v18_lattices (k7_filter_2 X0 X1) X0) \wedge ((v21_lattices (k7_filter_2 \\ & X0 X1) X0) \wedge (m1_subset_1 (k7_filter_2 X0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow ((\neg v1_xboole_0 \\ & (k6_filter_2 X0 X1)) \wedge ((v18_lattices (k6_filter_2 X0 X1) X0) \wedge (v21_lattices (k6_filter_2 X0 X1) X0) \wedge (m1_subset_1 (k6_filter_2 \\ & X0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
& X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (u1_struct_0 X0)))) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v18_lattices \\
& X2 X0) \wedge ((v21_lattices X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))) \Rightarrow ((X2 = k7_filter_2 X0 X1) \Leftrightarrow ((r1_tarski X1 X2) \wedge (\forall X3. \\
& ((\neg v1_xboole_0 X3) \wedge ((v18_lattices X3 X0) \wedge ((v21_lattices X3 X0) \wedge \\
& (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow ((r1_tarski \\
& X1 X3) \Rightarrow (r1_tarski X2 X3))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0))) \Rightarrow ((v18_lattices X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (((r3_lattices \\
& X0 X2 X3) \wedge (X3 \in X1)) \Rightarrow (X2 \in X1))))))
\end{aligned} \tag{7}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& ((\neg v1_xboole_0 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))) \Rightarrow ((X1 \in X2) \Rightarrow (r1_tarski (k6_filter_2 X0 X1) (k7_filter_2 \\
& X0 X2))))))
\end{aligned}$$