

t69_filter_2

(TMXBpeRApi4dx3eiRSw5esAMzscqwRv4qqC)

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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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v19_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v20_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v21_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_nat_lat : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_realset1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Let $g3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ & (l3_lattices X0))) \wedge ((\neg v1_xboole_0 X1) \wedge ((v20_lattices X1 X0) \wedge \\ & ((v21_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow (m2_nat_lat (k10_filter_2 X0 X1) X0) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
& X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v19_lattices X1 X0) \wedge \\
& ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge ((v10_lattices X2) \wedge \\
& (l3_lattices X2))) \Rightarrow ((X2 = k6_filter_0 X0 X1) \Leftrightarrow (\exists X3.((v1_funct_1 \\
& X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 X1 X1) X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X1 X1) X1)))))) \wedge (\exists X4.((v1_funct_1 \\
& X4) \wedge ((v1_funct_2 X4 (k2_zfmisc_1 X1 X1) X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X1 X1) X1)))))) \wedge ((X3 = k1_realset1 (u2_lattices \\
& X0) X1) \wedge ((X4 = k1_realset1 (u1_lattices X0) X1) \wedge (X2 = g3_lattices \\
& X1 X3 X4))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
& X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v20_lattices X1 X0) \wedge \\
& ((v21_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.(m2_nat_lat X2 X0) \Rightarrow ((X2 = k10_filter_2 X0 \\
& X1) \Leftrightarrow (\exists X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 \\
& X1 X1) X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X1 X1) X1)))))) \wedge (\exists X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (\\
& k2_zfmisc_1 X1 X1) X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 X1 X1) X1)))))) \wedge ((X3 = k1_realset1 (u2_lattices X0) \\
& X1) \wedge ((X4 = k1_realset1 (u1_lattices X0) X1) \wedge (X2 = g3_lattices X1 \\
& X3 X4))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0))) \Rightarrow ((v19_lattices X1 X0) \Rightarrow (v21_lattices X1 X0)))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
& X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v19_lattices X1 X0) \wedge \\
& ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))) \Rightarrow (k6_filter_0 X0 X1 = k10_filter_2 X0 X1))
\end{aligned}$$