

t80_aofa_000

(TMSXKdHTuqY1TjobjFi3rA12Rpv4QuPHLhi)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_unialg_1 : \iota \Rightarrow o$ be given. Let $v3_unialg_1 : \iota \Rightarrow o$ be given. Let $v4_unialg_1 : \iota \Rightarrow o$ be given. Let $v3_aofa_000 : \iota \Rightarrow o$ be given. Let $v4_aofa_000 : \iota \Rightarrow o$ be given. Let $v5_aofa_000 : \iota \Rightarrow o$ be given. Let $v6_aofa_000 : \iota \Rightarrow o$ be given. Let $l1_unialg_1 : \iota \Rightarrow o$ 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 $v1_funct_1 : \iota \Rightarrow o$ 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 $v13_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k12_aofa_000 : \iota \Rightarrow \iota$ be given. Let $k14_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (1)$$

Assume the following.

$$\forall X0.(l1_unialg_1 X0) \Rightarrow (l1_struct_0 X0) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (((v1_funct_1 X3) \wedge (v1_funct_2 X3 (k2_zfmisc_1 X0 X1) X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2)))) \wedge ((m1_subset_1 X4 X0) \wedge (m1_subset_1 X5 X1)))))) \Rightarrow (m1_subset_1 (k2_binop_1 X0 X1 X2 X3 X4 X5) X2) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.((v4_unialg_1 X0) \wedge ((v3_aofa_000 X0) \wedge (l1_unialg_1 X0))) \Rightarrow (m1_subset_1 (k12_aofa_000 X0) (u1_struct_0 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\
& X0) \wedge ((v4_unialg_1 X0) \wedge ((v3_aofa_000 X0) \wedge ((v4_aofa_000 X0) \wedge \\
& ((v5_aofa_000 X0) \wedge ((v6_aofa_000 X0) \wedge (l1_unialg_1 X0)))))))))) \Rightarrow \\
& (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& X1) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 \\
& X1 (u1_struct_0 X0)) X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 X1 (u1_struct_0 X0)) X1)))))) \Rightarrow ((r2_aofa_000 X0 X1 \\
& X2 X3) \Leftrightarrow (\forall X4.(m1_subset_1 X4 X1) \Rightarrow (\forall X5.(m1_subset_1 \\
& X5 (u1_struct_0 X0) \Rightarrow (\forall X6.(m1_subset_1 X6 (u1_struct_0 \\
& X0) \Rightarrow (\forall X7.(m1_subset_1 X7 (u1_struct_0 X0) \Rightarrow (((k2_binop_1 \\
& X1 (u1_struct_0 X0) X1 X3 X4 X5 \in X2) \Rightarrow (k2_binop_1 X1 (u1_struct_0 \\
& X0) X1 X3 X4 (k14_aofa_000 X0 X5 X6 X7) = k2_binop_1 X1 (u1_struct_0 \\
& X0) X1 X3 (k2_binop_1 X1 (u1_struct_0 X0) X1 X3 X4 X5) X6)) \wedge ((\neg k2_binop_1 \\
& X1 (u1_struct_0 X0) X1 X3 X4 X5 \in X2) \Rightarrow (k2_binop_1 X1 (u1_struct_0 \\
& X0) X1 X3 X4 (k14_aofa_000 X0 X5 X6 X7) = k2_binop_1 X1 (u1_struct_0 \\
& X0) X1 X3 (k2_binop_1 X1 (u1_struct_0 X0) X1 X3 X4 X5) X7))))))))))))) \\
& \tag{5}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\
& X0) \wedge ((v4_unialg_1 X0) \wedge ((v3_aofa_000 X0) \wedge ((v4_aofa_000 X0) \wedge \\
& ((v5_aofa_000 X0) \wedge ((v6_aofa_000 X0) \wedge (l1_unialg_1 X0)))))))))) \Rightarrow \\
& (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 (k2_zfmisc_1 X1 (u1_struct_0 X0)) X1) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X1 (u1_struct_0 X0)) \\
& X1)))))) \Rightarrow ((v13_aofa_000 X2 X0 X1) \Leftrightarrow (\forall X3.(m1_subset_1 X3 \\
& X1) \Rightarrow (k2_binop_1 X1 (u1_struct_0 X0) X1 X2 X3 (k12_aofa_000 X0) = \\
& X3)))))) \\
& \tag{6}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v4_unialg_1 X0) \wedge ((v3_aofa_000 X0) \wedge ((v5_aofa_000 \\
& X0) \wedge (l1_unialg_1 X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
& X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0) \Rightarrow (k15_aofa_000 \\
& X0 X1 X2 = k14_aofa_000 X0 X1 X2 (k12_aofa_000 X0)))))) \\
& \tag{7}
\end{aligned}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ & X0) \wedge ((v4_unialg_1 X0) \wedge ((v3_aofa_000 X0) \wedge ((v4_aofa_000 X0) \wedge \\ & ((v5_aofa_000 X0) \wedge ((v6_aofa_000 X0) \wedge (l1_unialg_1 X0)))))))))) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(\neg v1_xboole_0 X3) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 (k1_zfmisc_1 X3)) \Rightarrow (\forall X5.((v1_funct_1 X5) \wedge \\ & ((v1_funct_2 X5 (k2_zfmisc_1 X3 (u1_struct_0 X0)) X3) \wedge (m1_subset_1 \\ & X5 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X3 (u1_struct_0 X0)) \\ & X3)))))) \Rightarrow (((v13_aofa_000 X5 X0 X3) \wedge (r2_aofa_000 X0 X3 X4 X5)) \Rightarrow (\\ & \forall X6.(m1_subset_1 X6 X3) \Rightarrow ((\neg k2_binop_1 X3 (u1_struct_0 \\ & X0) X3 X5 X6 X1 \in X4) \Rightarrow (k2_binop_1 X3 (u1_struct_0 X0) X3 X5 X6 (k15_aofa_000 \\ & X0 X1 X2) = k2_binop_1 X3 (u1_struct_0 X0) X3 X5 X6 X1)))))))))) \end{aligned}$$