

t111_aofa_000
(TMKZtC3irAuP8YpR4P8wV7kdhV73LjBv9QR)

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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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $m1_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r6_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r7_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k13_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ 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 $k2_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k21_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k18_aofa_000 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k12_aofa_000 : \iota \Rightarrow \iota$ be given. Let $k14_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_aofa_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge ((v3_aofa_000 X0) \wedge \\ & ((v4_aofa_000 X0) \wedge ((v5_aofa_000 X0) \wedge ((v6_aofa_000 X0) \wedge (l1_unialg_1 X0)))))))))) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X1))) \Rightarrow \\ & (\forall X3. (m1_aofa_000 X3 X0 X1 X2) \Rightarrow ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 X1 (u1_struct_0 X0)) X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X1 (u1_struct_0 X0)) X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(l1_unialg_1 X0) \Rightarrow (l1_struct_0 X0) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (((v1_funct_1 X3) \wedge (v1_funct_2 X3 (k2_zfmisc_1 X0 X1) X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2)))))) \wedge ((m1_subset_1 X4 X0) \wedge (m1_subset_1 X5 X1)))) \Rightarrow (m1_subset_1 (k2_binop_1 X0 X1 X2 X3 X4 X5) X2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge ((v3_aofa_000 X0) \wedge ((v4_aofa_000 X0) \wedge ((v5_aofa_000 X0) \wedge ((v6_aofa_000 X0) \wedge (l1_unialg_1 X0)))))))))) \wedge ((\neg v1_xboole_0 X1) \wedge ((m1_subset_1 X2 (k1_zfmisc_1 X1) \wedge (m1_aofa_000 X3 X0 X1 X2)))) \Rightarrow (m1_subset_1 (k21_aofa_000 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 X1 (u1_struct_0 X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v4_unialg_1 X0) \wedge ((v4_aofa_000 X0) \wedge (l1_unialg_1 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k13_aofa_000 X0 X1 X2) (u1_struct_0 X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge ((v3_aofa_000 X0) \wedge ((v4_aofa_000 X0) \wedge ((v5_aofa_000 X0) \wedge ((v6_aofa_000 X0) \wedge (l1_unialg_1 X0)))))))))) \Rightarrow \\ & (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 X1) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0) \Rightarrow (\forall X4. \\ & (m1_aofa_000 X4 X0 X1 X2) \Rightarrow (\forall X5.(r7_aofa_000 X0 X1 X2 X3 X4 X5) \Leftrightarrow (\forall X6.(m1_subset_1 X6 X1) \Rightarrow ((X6 \in X5) \Rightarrow (k2_binop_1 X1 (u1_struct_0 X0) X1 X4 X6 X3 \in X5)))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\
& X0) \wedge ((v4_unialg_1 X0) \wedge ((v3_aofa_000 X0) \wedge ((v4_aofa_000 X0) \wedge \\
& ((v5_aofa_000 X0) \wedge ((v6_aofa_000 X0) \wedge (l1_unialg_1 X0))))))) \Rightarrow \\
& (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4. \\
& (m1_aofa_000 X4 X0 X1 X2) \Rightarrow (\forall X5.(r6_aofa_000 X0 X1 X2 X3 X4 \\
& X5) \Leftrightarrow (\forall X6.(m1_subset_1 X6 X1) \Rightarrow ((X6 \in X5) \Rightarrow (k4_tarski X6 X3 \in \\
& k21_aofa_000 X0 X1 X2 X4)))))))
\end{aligned} \tag{8}$$

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.(m1_aofa_000 X3 X0 X1 X2) \Rightarrow (\forall X4.(m1_subset_1 \\
& X4 (k1_zfmisc_1 (k2_zfmisc_1 X1 (u1_struct_0 X0)))) \Rightarrow ((X4 = k21_aofa_000 \\
& X0 X1 X2 X3) \Leftrightarrow ((r1_tarski (k2_zfmisc_1 X1 (k18_aofa_000 X0)) X4) \wedge \\
& ((r1_tarski (k2_zfmisc_1 X1 (k1_tarski (k12_aofa_000 X0))) X4) \wedge \\
& ((\forall X5.(m1_subset_1 X5 X1) \Rightarrow (\forall X6.(m1_subset_1 X6 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X7.(m1_subset_1 X7 (u1_struct_0 X0)) \Rightarrow \\
& (\forall X8.(m1_subset_1 X8 (u1_struct_0 X0)) \Rightarrow (((k4_tarski \\
& X5 X7 \in X4) \wedge (k4_tarski (k2_binop_1 X1 (u1_struct_0 X0) X1 X3 X5 X7) \\
& X8 \in X4)) \Rightarrow (k4_tarski X5 (k13_aofa_000 X0 X7 X8) \in X4)) \wedge (((k4_tarski \\
& X5 X6 \in X4) \wedge ((k4_tarski (k2_binop_1 X1 (u1_struct_0 X0) X1 X3 X5 X6) \\
& X7 \in X4) \wedge (k2_binop_1 X1 (u1_struct_0 X0) X1 X3 X5 X6 \in X2))) \Rightarrow (k4_tarski \\
& X5 (k14_aofa_000 X0 X6 X7 X8) \in X4)) \wedge (((k4_tarski X5 X6 \in X4) \wedge (k4_tarski \\
& (k2_binop_1 X1 (u1_struct_0 X0) X1 X3 X5 X6) X8 \in X4)) \Rightarrow ((k2_binop_1 \\
& X1 (u1_struct_0 X0) X1 X3 X5 X6 \in X2) \vee (k4_tarski X5 (k14_aofa_000 \\
& X0 X6 X7 X8) \in X4)) \wedge ((k4_tarski X5 X6 \in X4) \Rightarrow ((\forall X9.((\neg v1_xboole_0 \\
& X9) \wedge (m2_finseq_1 X9 X1)) \Rightarrow (\neg (k1_funct_1 X9 np_1 = k2_binop_1 X1 \\
& (u1_struct_0 X0) X1 X3 X5 X6) \wedge ((\neg k1_funct_1 X9 (k3_finseq_1 X9) \in \\
& X2) \wedge (\forall X10.(v7_ordinal1 X10) \Rightarrow ((r1_xxreal_0 np_1 X10) \Rightarrow \\
& ((r1_xxreal_0 (k3_finseq_1 X9) X10) \vee ((k1_funct_1 X9 X10 \in X2) \wedge \\
& ((k4_tarski (k1_funct_1 X9 X10) (k13_aofa_000 X0 X7 X6) \in X4) \wedge (k1_funct_1 \\
& X9 (k1_nat_1 X10 np_1) = k1_binop_1 X3 (k1_funct_1 X9 X10) (k13_aofa_000 \\
& X0 X7 X6)))))))))) \vee (k4_tarski X5 (k16_aofa_000 X0 X6 X7) \in X4)))))) \wedge \\
& (\forall X5.(m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 X1 (u1_struct_0 \\
& X0)))) \Rightarrow (((r1_tarski (k2_zfmisc_1 X1 (k18_aofa_000 X0)) X5) \wedge (\\
& (r1_tarski (k2_zfmisc_1 X1 (k1_tarski (k12_aofa_000 X0))) X5) \wedge \\
& (\forall X6.(m1_subset_1 X6 X1) \Rightarrow (\forall X7.(m1_subset_1 X7 (\\
& u1_struct_0 X0)) \Rightarrow (\forall X8.(m1_subset_1 X8 (u1_struct_0 X0)) \Rightarrow \\
& (\forall X9.(m1_subset_1 X9 (u1_struct_0 X0)) \Rightarrow (((k4_tarski \\
& X6 X8 \in X5) \wedge (k4_tarski (k2_binop_1 X1 (u1_struct_0 X0) X1 X3 X6 X8) \\
& X9 \in X5)) \Rightarrow (k4_tarski X6 (k13_aofa_000 X0 X8 X9) \in X5)) \wedge (((k4_tarski \\
& X6 X7 \in X5) \wedge ((k4_tarski (k2_binop_1 X1 (u1_struct_0 X0) X1 X3 X6 X7) \\
& X8 \in X5) \wedge (k2_binop_1 X1 (u1_struct_0 X0) X1 X3 X6 X7 \in X2))) \Rightarrow (k4_tarski \\
& X6 (k14_aofa_000 X0 X7 X8 X9) \in X5)) \wedge (((k4_tarski X6 X7 \in X5) \wedge (k4_tarski \\
& (k2_binop_1 X1 (u1_struct_0 X0) X1 X3 X6 X7) X9 \in X5)) \Rightarrow ((k2_binop_1 \\
& X1 (u1_struct_0 X0) X1 X3 X6 X7 \in X2) \vee (k4_tarski X6 (k14_aofa_000 \\
& X0 X7 X8 X9) \in X5))) \wedge ((k4_tarski X6 X7 \in X5) \Rightarrow ((\forall X10.((\neg v1_xboole_0 \\
& X10) \wedge (m2_finseq_1 X10 X1)) \Rightarrow (\neg (k1_funct_1 X10 np_1 = k2_binop_1 \\
& X1 (u1_struct_0 X0) X1 X3 X6 X7) \wedge ((\neg k1_funct_1 X10 (k3_finseq_1 \\
& X10) \in X2) \wedge (\forall X11.(v7_ordinal1 X11) \Rightarrow ((r1_xxreal_0 np_1 \\
& X11) \Rightarrow ((r1_xxreal_0 (k3_finseq_1 X10) X11) \vee ((k1_funct_1 X10 X11 \in \\
& X2) \wedge ((k4_tarski (k1_funct_1 X10 X11) (k13_aofa_000 X0 X8 X7) \in X5) \wedge \\
& (k1_funct_1 X10 (k1_nat_1 X11 np_1) = k1_binop_1 X3 (k1_funct_1 \\
& X10 X11) (k13_aofa_000 X0 X8 X7)))))))))) \vee (k4_tarski X6 (k16_aofa_000 \\
& X0 X7 X8) \in X5)))))) \Rightarrow (r1_relset_1 X1 (u1_struct_0 X0) X4 X5)))))) \Rightarrow \\
& (9)
\end{aligned}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ & X0) \wedge ((v4_unialg_1 X0) \wedge ((v3_aofa_000 X0) \wedge ((v4_aofa_000 X0) \wedge \\ & ((v5_aofa_000 X0) \wedge ((v6_aofa_000 X0) \wedge (l1_unialg_1 X0)))))))))) \Rightarrow \\ & (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & X1)) \Rightarrow (\forall X3.(m1_aofa_000 X3 X0 X1 X2) \Rightarrow (\forall X4.\forall X5. \\ & (m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6.(m1_subset_1 X6 \\ & (u1_struct_0 X0)) \Rightarrow (((r6_aofa_000 X0 X1 X2 X5 X3 X4) \wedge ((r6_aofa_000 \\ & X0 X1 X2 X6 X3 X4) \wedge (r7_aofa_000 X0 X1 X2 X5 X3 X4))) \Rightarrow (r6_aofa_000 X0 \\ & X1 X2 (k13_aofa_000 X0 X5 X6) X3 X4))))))))) \end{aligned}$$