

t6_msinst_1 (TM-
RRf9SmGobLcLvKWYeR8ZDjY47ye1NQDUUn)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v2_altcat_1 : \iota \Rightarrow o$ be given. Let $v11_altcat_1 : \iota \Rightarrow o$ be given. Let $v12_altcat_1 : \iota \Rightarrow o$ be given. Let $l2_altcat_1 : \iota \Rightarrow o$ be given. Let $k4_msinst_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_msualg_6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6_altcat_1 : \iota \Rightarrow o$ be given. Let $k2_msinst_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_altcat_1 : \iota \Rightarrow \iota$ be given. Let $k3_msinst_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funcop_1 : \iota \Rightarrow o$ be given. Let $k4_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_altcat_1 : \iota \Rightarrow \iota$ be given. Let $k8_pboole : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 X0))) \wedge (\neg v1_xboole_0 X1)) \Rightarrow ((\neg v2_struct_0 (k4_msinst_1 X0 X1)) \wedge ((v2_altcat_1 (k4_msinst_1 X0 X1)) \wedge (v6_altcat_1 (k4_msinst_1 X0 X1)) \wedge ((v11_altcat_1 (k4_msinst_1 X0 X1)) \wedge (v12_altcat_1 (k4_msinst_1 X0 X1)))))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 X0))) \wedge (\neg v1_xboole_0 X1)) \Rightarrow (\neg v1_xboole_0 (k2_msinst_1 X0 X1)) \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& X0))) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2.((\neg v2_struct_0 \\
& X2) \wedge ((v6_altcat_1 X2) \wedge (l2_altcat_1 X2))) \Rightarrow ((X2 = k4_msinst_1 \\
& X0 X1) \Leftrightarrow ((u1_struct_0 X2 = k2_msinst_1 X0 X1) \wedge ((\forall X3.(m1_subset_1 \\
& X3 (k2_msinst_1 X0 X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 (k2_msinst_1 \\
& X0 X1)) \Rightarrow (k1_binop_1 (u1_altcat_1 X2) X3 X4 = k3_msinst_1 X0 X1 X3 \\
& X4))) \wedge (\forall X3.(m1_subset_1 X3 (u1_struct_0 X2)) \Rightarrow (\forall X4. \\
& (m1_subset_1 X4 (u1_struct_0 X2)) \Rightarrow (\forall X5.(m1_subset_1 X5 \\
& (u1_struct_0 X2)) \Rightarrow (\forall X6.((v1_relat_1 X6) \wedge ((v1_funct_1 \\
& X6) \wedge (v1_funcop_1 X6))) \Rightarrow (\forall X7.((v1_relat_1 X7) \wedge ((v1_funct_1 \\
& X7) \wedge (v1_funcop_1 X7)))) \Rightarrow (((X6 \in k1_binop_1 (u1_altcat_1 X2) X3 \\
& X4) \wedge (X7 \in k1_binop_1 (u1_altcat_1 X2) X4 X5)) \Rightarrow (k1_binop_1 (k4_altcat_1 \\
& (u1_struct_0 X2) (u1_altcat_1 X2) (u2_altcat_1 X2) X3 X4 X5) X7 X6 = \\
& k8_pboole X6 X7)))))))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& X0))) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2.(X2 = k2_msinst_1 \\
& X0 X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow (\exists X4.((v3_msualg_1 X4 X0) \wedge \\
& ((v1_msualg_6 X4 X0) \wedge (l3_msualg_1 X4 X0))) \wedge ((X3 = X4) \wedge (\forall X5. \\
& (m1_subset_1 X5 (k10_xtuple_0 (u3_msualg_1 X0 X4))) \Rightarrow (r1_tarski \\
& X5 X1)))))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& ((\neg v11_struct_0 X1) \wedge (l1_msualg_1 X1))) \Rightarrow (\forall X2.((\neg v2_struct_0 \\
& X2) \wedge ((v2_altcat_1 X2) \wedge ((v11_altcat_1 X2) \wedge ((v12_altcat_1 X2) \wedge \\
& (l2_altcat_1 X2)))))) \Rightarrow ((X2 = k4_msinst_1 X1 X0) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 X2)) \Rightarrow ((v3_msualg_1 X3 X1) \wedge ((v1_msualg_6 X3 X1) \wedge \\
& (l3_msualg_1 X3 X1)))))))))
\end{aligned}$$