

t33_mod_4

(TMUHu3HYsjDC3PxAy1HKmk6ehVzQbNuWFK7)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ 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 $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_mod_4 : \iota \Rightarrow \iota$ be given. Let $v2_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_ringcat1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $g6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v36_algstr_0 : \iota \Rightarrow o$ be given. Let $l3_struct_0 : \iota \Rightarrow o$ be given. Let $u3_struct_0 : \iota \Rightarrow \iota$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $u2_struct_0 : \iota \Rightarrow \iota$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $u2_algstr_0 : \iota \Rightarrow \iota$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_struct_0 : \iota \Rightarrow o$ be given. Let $k1_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $v2_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\
 & \quad X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))) \Rightarrow (\forall X1. ((\neg \\
 & v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v4_vectsp_1 X1) \wedge ((v3_rlvect_1 \\
 & \quad X1) \wedge ((v4_rlvect_1 X1) \wedge (l6_algstr_0 X1)))))) \Rightarrow (\forall X2. ((\\
 & \quad v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
 & \quad X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
 & \quad X0) (u1_struct_0 X1)))))) \Rightarrow ((v2_mod_4 X2 X0 X1) \Leftrightarrow (v1_ringcat1 (\\
 & \quad k7_mod_4 X0 X1 X2) X0 (k2_mod_4 X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((v1_funct_1 \\ & X1)\wedge((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0))))\wedge(((v1_funct_1 X2)\wedge(\\ & (v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0))))\wedge((m1_subset_1 X3 X0)\wedge \\ & (m1_subset_1 X4 X0))))\Rightarrow(\forall X5.\forall X6.\forall X7.\forall X8. \\ & \forall X9.(g6_algstr_0 X0 X1 X2 X3 X4 = g6_algstr_0 X5 X6 X7 X8 X9)\Rightarrow \\ & ((X0 = X5)\wedge((X1 = X6)\wedge((X2 = X7)\wedge((X3 = X8)\wedge(X4 = X9)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l6_algstr_0 X0))\Rightarrow((\neg v2_struct_0 (k2_mod_4 X0))\wedge(v36_algstr_0 (k2_mod_4 X0))) \quad (3)$$

Assume the following.

$$\forall X0.(l3_struct_0 X0)\Rightarrow(m1_subset_1 (u3_struct_0 X0) (u1_struct_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0)\Rightarrow(m1_subset_1 (u2_struct_0 X0) (u1_struct_0 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l3_algstr_0 X0)\Rightarrow(((v1_funct_1 (u2_algstr_0 X0))\wedge \\ & ((v1_funct_2 (u2_algstr_0 X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0))\wedge(m1_subset_1 (u2_algstr_0 \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_algstr_0 X0)\Rightarrow(((v1_funct_1 (u1_algstr_0 X0))\wedge \\ & ((v1_funct_2 (u1_algstr_0 X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0))\wedge(m1_subset_1 (u1_algstr_0 \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0)\Rightarrow((l2_algstr_0 X0)\wedge(l5_algstr_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l5_algstr_0 X0)\Rightarrow((l4_algstr_0 X0)\wedge(l4_struct_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l4_algstr_0 X0) \Rightarrow ((l3_struct_0 X0) \wedge (l3_algstr_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l6_algstr_0 \\ & X0)) \wedge (((\neg v2_struct_0 X1) \wedge (l6_algstr_0 X1)) \wedge ((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1))))))) \Rightarrow \\ & ((v1_funct_1 (k7_mod_4 X0 X1 X2)) \wedge ((v1_funct_2 (k7_mod_4 X0 X1 \\ & X2) (u1_struct_0 X0) (u1_struct_0 (k2_mod_4 X1))) \wedge (m1_subset_1 \\ & (k7_mod_4 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) \\ & (u1_struct_0 (k2_mod_4 X1))))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow ((v36_algstr_0 (k2_mod_4 X0)) \wedge (l6_algstr_0 (k2_mod_4 X0))) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (k2_mod_4 X0 = \\ & g6_algstr_0 (u1_struct_0 X0) (u1_algstr_0 X0) (k1_mod_4 (u1_struct_0 \\ & X0) (u1_struct_0 X0) (u1_struct_0 X0) (u2_algstr_0 X0)) (k5_struct_0 \\ & X0) (k4_struct_0 X0)) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l6_algstr_0 X1)) \Rightarrow (\forall X2. ((v1_funct_1 \\ & X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow \\ & (k7_mod_4 X0 X1 X2 = X2))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l6_algstr_0 X1)) \Rightarrow (\forall X2. ((v1_funct_1 \\ & X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow \\ & ((v6_mod_4 X2 X0 X1) \Leftrightarrow ((v2_mod_4 X2 X0 X1) \wedge (v2_funct_2 X2 (u1_struct_0 \\ & X1)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge (l6_algstr_0 X1)) \Rightarrow (\forall X2. ((v1_funct_1 \\
& X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow \\
& ((v5_mod_4 X2 X0 X1) \Leftrightarrow ((v1_ringcat1 X2 X0 X1) \wedge (v2_funct_2 X2 (u1_struct_0 \\
& X1))))))
\end{aligned} \tag{17}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l6_algstr_0 X0) \Rightarrow ((v36_algstr_0 X0) \Rightarrow (X0 = g6_algstr_0 \\
& (u1_struct_0 X0) (u1_algstr_0 X0) (u2_algstr_0 X0) (u3_struct_0 \\
& X0) (u2_struct_0 X0)))
\end{aligned} \tag{18}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\
& X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow (\forall X1.((\neg \\
& v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v4_vectsp_1 X1) \wedge ((v3_rlvect_1 \\
& X1) \wedge ((v4_rlvect_1 X1) \wedge (l6_algstr_0 X1)))))) \Rightarrow (\forall X2.((\\
& v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
& X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X1)))))) \Rightarrow ((v6_mod_4 X2 X0 X1) \Leftrightarrow (v5_mod_4 (k7_mod_4 \\
& X0 X1 X2) X0 (k2_mod_4 X1))))))
\end{aligned}$$