

t34_mod_4

(TMLEPv9PPBvnfkANDzyX2F8KJv6hf12T8f8)

October 27, 2020

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 $v7_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v8_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $v5_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v36_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_mod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ be given. Let $v1_ringcat1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\
 & \quad X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))) \Rightarrow (\forall X1. ((\neg \\
 & v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v4_vectsp_1 X1) \wedge ((v3_rlvect_1 \\
 & \quad X1) \wedge ((v4_rlvect_1 X1) \wedge (l6_algstr_0 X1)))))) \Rightarrow (\forall X2. ((\\
 & v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
 & \quad X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
 & X0) (u1_struct_0 X1)))))) \Rightarrow ((v5_mod_4 X2 X0 X1) \Leftrightarrow (v6_mod_4 (k7_mod_4 \\
 & \quad X0 X1 X2) X0 (k2_mod_4 X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\
 & \quad X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))) \Rightarrow (\forall X1. ((\neg \\
 & v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v4_vectsp_1 X1) \wedge ((v3_rlvect_1 \\
 & \quad X1) \wedge ((v4_rlvect_1 X1) \wedge (l6_algstr_0 X1)))))) \Rightarrow (\forall X2. ((\\
 & v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
 & \quad X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
 & X0) (u1_struct_0 X1)))))) \Rightarrow ((v3_mod_4 X2 X0 X1) \Leftrightarrow (v4_mod_4 (k7_mod_4 \\
 & \quad X0 X1 X2) X0 (k2_mod_4 X1))))))
 \end{aligned} \tag{2}$$

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.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \wedge (((\neg v2_struct_0 X1) \wedge (l6_algstr_0 X1)) \wedge ((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1))))))) \Rightarrow \\ & ((v1_funct_1 (k7_mod_4 X0 X1 X2)) \wedge ((v1_funct_2 (k7_mod_4 X0 X1 X2) (u1_struct_0 X0) (u1_struct_0 (k2_mod_4 X1))) \wedge (m1_subset_1 \\ & (k7_mod_4 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 (k2_mod_4 X1))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow ((v36_algstr_0 (k2_mod_4 X0)) \wedge (l6_algstr_0 (k2_mod_4 X0))) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l6_algstr_0 X1)) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow \\ & ((v4_mod_4 X2 X0 X1) \Leftrightarrow ((v2_mod_4 X2 X0 X1) \wedge (v2_funct_1 X2)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l6_algstr_0 X1)) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow \\ & ((v3_mod_4 X2 X0 X1) \Leftrightarrow ((v1_ringcat1 X2 X0 X1) \wedge (v2_funct_1 X2)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l6_algstr_0 X1)) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow \\ & ((v8_mod_4 X2 X0 X1) \Leftrightarrow ((v4_mod_4 X2 X0 X1) \wedge (v2_funct_2 X2 (u1_struct_0 X1)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge (l6_algstr_0 X1)) \Rightarrow (\forall X2.((v1_funct_1 \\
& X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow \\
& ((v7_mod_4 X2 X0 X1) \Leftrightarrow ((v3_mod_4 X2 X0 X1) \wedge (v2_funct_2 X2 (u1_struct_0 \\
& X1))))))
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge (l6_algstr_0 X1)) \Rightarrow (\forall X2.((v1_funct_1 \\
& X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow \\
& ((v6_mod_4 X2 X0 X1) \Leftrightarrow ((v2_mod_4 X2 X0 X1) \wedge (v2_funct_2 X2 (u1_struct_0 \\
& X1))))))
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge (l6_algstr_0 X1)) \Rightarrow (\forall X2.((v1_funct_1 \\
& X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow \\
& ((v5_mod_4 X2 X0 X1) \Leftrightarrow ((v1_ringcat1 X2 X0 X1) \wedge (v2_funct_2 X2 (u1_struct_0 \\
& X1))))))
\end{aligned} \tag{11}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\
& X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow (\forall X1.((\neg \\
& v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v4_vectsp_1 X1) \wedge ((v3_rlvect_1 \\
& X1) \wedge ((v4_rlvect_1 X1) \wedge (l6_algstr_0 X1)))))) \Rightarrow (\forall X2.((\\
& v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
& X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X1)))))) \Rightarrow ((v7_mod_4 X2 X0 X1) \Leftrightarrow (v8_mod_4 (k7_mod_4 \\
& X0 X1 X2) X0 (k2_mod_4 X1))))))
\end{aligned}$$