

t11_mod_2

(TMM9qC6KU3963yYv9Enw2UVewnTJ5qHqw1r)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ 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 $v3_mod_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_mod_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_mod_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_mod_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v8_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v9_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v10_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v11_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_mod_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
 & X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
 & ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\
 & (\forall X1. ((v3_mod_2 X1 X0) \wedge (l1_mod_2 X1 X0)) \Rightarrow (\exists X2. (\\
 & (\neg v2_struct_0 X2) \wedge ((v13_algstr_0 X2) \wedge ((v8_vectsp_1 X2 X0) \wedge (\\
 & (v9_vectsp_1 X2 X0) \wedge ((v10_vectsp_1 X2 X0) \wedge ((v11_vectsp_1 X2 X0) \wedge \\
 & ((v2_rlvect_1 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge (l1_vectsp_1 \\
 & X2 X0)))))))))) \wedge (\exists X3. ((\neg v2_struct_0 X3) \wedge ((v13_algstr_0 \\
 & X3) \wedge ((v8_vectsp_1 X3 X0) \wedge ((v9_vectsp_1 X3 X0) \wedge ((v10_vectsp_1 \\
 & X3 X0) \wedge ((v11_vectsp_1 X3 X0) \wedge ((v2_rlvect_1 X3) \wedge ((v3_rlvect_1 \\
 & X3) \wedge ((v4_rlvect_1 X3) \wedge (l1_vectsp_1 X3 X0)))))))))) \wedge (m1_mod_2 \\
 & X1 X0 X2 X3)))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge \\
& ((v3_group_1 X0) \wedge (v4_vectsp_1 X0) \wedge (v5_vectsp_1 X0) \wedge (v2_rlvect_1 \\
& X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))) \wedge \\
& (l1_mod_2 X1 X0) \Rightarrow ((\neg v2_struct_0 (k2_mod_2 X0 X1)) \wedge (v13_algstr_0 \\
& (k2_mod_2 X0 X1)) \wedge (v8_vectsp_1 (k2_mod_2 X0 X1) X0) \wedge (v9_vectsp_1 \\
& (k2_mod_2 X0 X1) X0) \wedge (v10_vectsp_1 (k2_mod_2 X0 X1) X0) \wedge (v11_vectsp_1 \\
& (k2_mod_2 X0 X1) X0) \wedge (v2_rlvect_1 (k2_mod_2 X0 X1)) \wedge (v3_rlvect_1 \\
& (k2_mod_2 X0 X1)) \wedge (v4_rlvect_1 (k2_mod_2 X0 X1)) \wedge (l1_vectsp_1 \\
& (k2_mod_2 X0 X1) X0))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v3_group_1 \\
& X0) \wedge (v4_vectsp_1 X0) \wedge (v5_vectsp_1 X0) \wedge (v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow \\
& (\forall X1. ((\neg v2_struct_0 X1) \wedge (v13_algstr_0 X1) \wedge (v8_vectsp_1 \\
& X1 X0) \wedge (v9_vectsp_1 X1 X0) \wedge (v10_vectsp_1 X1 X0) \wedge (v11_vectsp_1 \\
& X1 X0) \wedge (v2_rlvect_1 X1) \wedge (v3_rlvect_1 X1) \wedge (v4_rlvect_1 X1) \wedge \\
& (l1_vectsp_1 X1 X0)))))) \Rightarrow (\forall X2. ((\neg v2_struct_0 X2) \wedge \\
& (v13_algstr_0 X2) \wedge (v8_vectsp_1 X2 X0) \wedge (v9_vectsp_1 X2 X0) \wedge \\
& (v10_vectsp_1 X2 X0) \wedge (v11_vectsp_1 X2 X0) \wedge (v2_rlvect_1 X2) \wedge \\
& ((v3_rlvect_1 X2) \wedge (v4_rlvect_1 X2) \wedge (l1_vectsp_1 X2 X0)))))) \Rightarrow \\
& (\forall X3. ((v3_mod_2 X3 X0) \wedge (l1_mod_2 X3 X0)) \Rightarrow ((m1_mod_2 X3 \\
& X0 X1 X2) \Leftrightarrow ((k2_mod_2 X0 X3 = X1) \wedge (k3_mod_2 X0 X3 = X2))))))
\end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v3_group_1 \\
& X0) \wedge (v4_vectsp_1 X0) \wedge (v5_vectsp_1 X0) \wedge (v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow \\
& (\forall X1. ((v3_mod_2 X1 X0) \wedge (l1_mod_2 X1 X0)) \Rightarrow (\forall X2. (\\
& (v3_mod_2 X2 X0) \wedge (l1_mod_2 X2 X0)) \Rightarrow (\neg (k2_mod_2 X0 X1 = k3_mod_2 \\
& X0 X2)) \wedge (\forall X3. ((\neg v2_struct_0 X3) \wedge (v13_algstr_0 X3) \wedge (\\
& v8_vectsp_1 X3 X0) \wedge (v9_vectsp_1 X3 X0) \wedge (v10_vectsp_1 X3 X0) \wedge \\
& ((v11_vectsp_1 X3 X0) \wedge (v2_rlvect_1 X3) \wedge (v3_rlvect_1 X3) \wedge (\\
& v4_rlvect_1 X3) \wedge (l1_vectsp_1 X3 X0)))))) \Rightarrow (\forall X4. (\\
& (\neg v2_struct_0 X4) \wedge (v13_algstr_0 X4) \wedge (v8_vectsp_1 X4 X0) \wedge (\\
& v9_vectsp_1 X4 X0) \wedge (v10_vectsp_1 X4 X0) \wedge (v11_vectsp_1 X4 X0) \wedge \\
& ((v2_rlvect_1 X4) \wedge (v3_rlvect_1 X4) \wedge (v4_rlvect_1 X4) \wedge (l1_vectsp_1 \\
& X4 X0)))))) \Rightarrow (\forall X5. ((\neg v2_struct_0 X5) \wedge (v13_algstr_0 \\
& X5) \wedge (v8_vectsp_1 X5 X0) \wedge (v9_vectsp_1 X5 X0) \wedge (v10_vectsp_1 \\
& X5 X0) \wedge (v11_vectsp_1 X5 X0) \wedge (v2_rlvect_1 X5) \wedge (v3_rlvect_1 \\
& X5) \wedge (v4_rlvect_1 X5) \wedge (l1_vectsp_1 X5 X0)))))) \Rightarrow (\neg (m1_mod_2 \\
& X1 X0 X4 X5) \wedge (m1_mod_2 X2 X0 X3 X4))))))
\end{aligned}$$