

t37_lmod_6

(TMQimKw5TcsYJurKUqvaSP71n1Axts5XRUi)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ 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 $v3_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ 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 $m1_vectsp_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_lmod_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_struct_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
 & X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
 & ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\
 & (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v8_vectsp_1 \\
 & X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 \\
 & X1 X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\
 & (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2. (m1_vectsp_4 X2 X0 X1) \Rightarrow \\
 & (\forall X3. (m1_vectsp_4 X3 X0 X1) \Rightarrow ((\forall X4. (m1_subset_1 \\
 & X4 (u1_struct_0 X1) \Rightarrow ((r1_struct_0 X2 X4) \Rightarrow (r1_struct_0 X3 X4)) \Rightarrow \\
 & (m1_vectsp_4 X2 X0 X3))))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((\neg v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge \\
& ((v2_rlvect_1 X1)\wedge(v3_rlvect_1 X1)\wedge(v4_rlvect_1 X1)\wedge(v3_group_1 \\
& X1)\wedge(v4_vectsp_1 X1)\wedge(v5_vectsp_1 X1)\wedge(l6_algstr_0 X1))))))\Rightarrow \\
& (\forall X2.((\neg v2_struct_0 X2)\wedge((v13_algstr_0 X2)\wedge((v2_rlvect_1 \\
& X2)\wedge(v3_rlvect_1 X2)\wedge(v4_rlvect_1 X2)\wedge(v8_vectsp_1 X2 X1)\wedge \\
& ((v9_vectsp_1 X2 X1)\wedge(v10_vectsp_1 X2 X1)\wedge(v11_vectsp_1 X2 \\
& X1)\wedge(l1_vectsp_1 X2 X1))))))\Rightarrow(\forall X3.((\neg v2_struct_0 \\
& X3)\wedge((v13_algstr_0 X3)\wedge(v2_rlvect_1 X3)\wedge(v3_rlvect_1 X3)\wedge \\
& ((v4_rlvect_1 X3)\wedge(v8_vectsp_1 X3 X1)\wedge(v9_vectsp_1 X3 X1)\wedge \\
& ((v10_vectsp_1 X3 X1)\wedge(v11_vectsp_1 X3 X1)\wedge(l1_vectsp_1 X3 X1))))))\Rightarrow \\
& ((r1_lmod_6 X1 X2 X3)\Rightarrow(((r1_struct_0 X2 X0)\Rightarrow(r1_struct_0 X3 X0))\wedge \\
& ((m1_subset_1 X0 (u1_struct_0 X2))\Rightarrow(m1_subset_1 X0 (u1_struct_0 \\
& X3))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge \\
& ((v3_group_1 X0)\wedge(v4_vectsp_1 X0)\wedge(v5_vectsp_1 X0)\wedge(v2_rlvect_1 \\
& X0)\wedge(v3_rlvect_1 X0)\wedge(v4_rlvect_1 X0)\wedge(l6_algstr_0 X0))))))\wedge \\
& ((\neg v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge(v8_vectsp_1 X1 X0)\wedge \\
& ((v9_vectsp_1 X1 X0)\wedge(v10_vectsp_1 X1 X0)\wedge(v11_vectsp_1 X1 \\
& X0)\wedge(v2_rlvect_1 X1)\wedge(v3_rlvect_1 X1)\wedge(v4_rlvect_1 X1)\wedge \\
& (l1_vectsp_1 X1 X0))))))\Rightarrow(\forall X2.(m1_vectsp_4 X2 X0 \\
& X1)\Rightarrow((\neg v2_struct_0 X2)\wedge((v13_algstr_0 X2)\wedge(v8_vectsp_1 X2 \\
& X0)\wedge(v9_vectsp_1 X2 X0)\wedge(v10_vectsp_1 X2 X0)\wedge(v11_vectsp_1 \\
& X2 X0)\wedge(v2_rlvect_1 X2)\wedge(v3_rlvect_1 X2)\wedge(v4_rlvect_1 X2)\wedge \\
& (l1_vectsp_1 X2 X0))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 \\
& X0)\wedge(v3_rlvect_1 X0)\wedge(v4_rlvect_1 X0)\wedge(v3_group_1 X0)\wedge \\
& (v4_vectsp_1 X0)\wedge(v5_vectsp_1 X0)\wedge(l6_algstr_0 X0))))))\Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v2_rlvect_1 \\
& X1)\wedge(v3_rlvect_1 X1)\wedge(v4_rlvect_1 X1)\wedge(v8_vectsp_1 X1 X0)\wedge \\
& ((v9_vectsp_1 X1 X0)\wedge(v10_vectsp_1 X1 X0)\wedge(v11_vectsp_1 X1 \\
& X0)\wedge(l1_vectsp_1 X1 X0))))))\Rightarrow(\forall X2.((\neg v2_struct_0 \\
& X2)\wedge((v13_algstr_0 X2)\wedge(v2_rlvect_1 X2)\wedge(v3_rlvect_1 X2)\wedge \\
& ((v4_rlvect_1 X2)\wedge(v8_vectsp_1 X2 X0)\wedge(v9_vectsp_1 X2 X0)\wedge \\
& ((v10_vectsp_1 X2 X0)\wedge(v11_vectsp_1 X2 X0)\wedge(l1_vectsp_1 X2 X0))))))\Rightarrow \\
& ((r1_lmod_6 X0 X1 X2)\Leftrightarrow(m1_vectsp_4 X1 X0 X2)))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge \\ & (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow \\ & (\forall X1.((\neg v2_struct_0 X1) \wedge (v13_algstr_0 X1) \wedge (v2_rlvect_1 \\ & X1) \wedge (v3_rlvect_1 X1) \wedge (v4_rlvect_1 X1) \wedge ((v8_vectsp_1 X1 X0) \wedge \\ & ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 X1 \\ & X0) \wedge (l1_vectsp_1 X1 X0)))))) \Rightarrow (\forall X2.(m1_vectsp_4 X2 \\ & X0 X1) \Rightarrow (\forall X3.(m1_vectsp_4 X3 X0 X1) \Rightarrow ((r1_lmod_6 X0 X2 X3) \Leftrightarrow \\ & (\forall X4.(m1_subset_1 X4 (u1_struct_0 X1) \Rightarrow ((r1_struct_0 \\ & X2 X4) \Rightarrow (r1_struct_0 X3 X4)))))) \end{aligned}$$