

t49_matrlin2
(TMHChyrk6bmM1rjBLtVe451BKGJ6HX68QGo)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v33_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ 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 $v8_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $v1_matrlin : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_matrlin : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_matrix_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k10_ranknull : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_matrlin2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_matrix13 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v13_vectsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_mod_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k1_matrlin2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given.

Let $m1_finseq-1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 \\
& X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v8_vectsp_1 X1 X0) \wedge \\
& ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 X1 \\
& X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\
& ((v1_matrlin X1 X0) \wedge (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2. \\
& ((\neg v2_struct_0 X2) \wedge ((v13_algstr_0 X2) \wedge ((v8_vectsp_1 X2 X0) \wedge \\
& ((v9_vectsp_1 X2 X0) \wedge ((v10_vectsp_1 X2 X0) \wedge ((v11_vectsp_1 X2 \\
& X0) \wedge ((v2_rlvect_1 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge \\
& ((v1_matrlin X2 X0) \wedge (l1_vectsp_1 X2 X0)))))))))) \Rightarrow (\forall X3. \\
& (m1_matrlin X3 X0 X1) \Rightarrow (\forall X4. (m1_matrlin X4 X0 X2) \Rightarrow (\forall X5. \\
& ((v1_funct_1 X5) \wedge ((v1_funct_2 X5 (u1_struct_0 X1) (u1_struct_0 \\
& X2)) \wedge ((v13_vectsp_1 X5 X1 X2) \wedge ((v1_mod_2 X5 X0 X1 X2) \wedge (m1_subset_1 \\
& X5 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)))))))))) \Rightarrow \\
& (k10_ranknull X0 X1 X2 X5 = k8_matrix13 X0 (k1_matrlin2 X0 X1 X2 X5 \\
& X3 X4))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 \\
& X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v8_vectsp_1 X1 X0) \wedge \\
& ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 X1 \\
& X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\
& ((v1_matrlin X1 X0) \wedge (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2. \\
& ((\neg v2_struct_0 X2) \wedge ((v13_algstr_0 X2) \wedge ((v8_vectsp_1 X2 X0) \wedge \\
& ((v9_vectsp_1 X2 X0) \wedge ((v10_vectsp_1 X2 X0) \wedge ((v11_vectsp_1 X2 \\
& X0) \wedge ((v2_rlvect_1 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge \\
& ((v1_matrlin X2 X0) \wedge (l1_vectsp_1 X2 X0)))))))))) \Rightarrow (\forall X3. \\
& (m1_matrlin X3 X0 X1) \Rightarrow (\forall X4. (m1_matrlin X4 X0 X2) \Rightarrow (\forall X5. \\
& (m1_matrix_1 X5 (u1_struct_0 X0) (k3_finseq_1 X3) (k3_finseq_1 \\
& X4)) \Rightarrow (k1_matrlin2 X0 X1 X2 (k4_matrlin2 X0 X1 X2 X3 X4 X5) X3 X4 = X5))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq-1 X1 X0) \Leftrightarrow (m1_finseq-1 X1 X0) \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\
& ((((-v2_struct_0 X0)\wedge((-v6_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge \\
& ((v33_algstr_0 X0)\wedge((v3_group_1 X0)\wedge((v5_group_1 X0)\wedge((v4_vectsp_1 \\
& X0)\wedge((v5_vectsp_1 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge \\
& ((v4_rlvect_1 X0)\wedge(l6_algstr_0 X0))))))))))\wedge(((v2_struct_0 \\
& X1)\wedge((v13_algstr_0 X1)\wedge((v8_vectsp_1 X1 X0)\wedge((v9_vectsp_1 X1 \\
& X0)\wedge((v10_vectsp_1 X1 X0)\wedge((v11_vectsp_1 X1 X0)\wedge((v2_rlvect_1 \\
& X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v1_matrlin X1 X0)\wedge \\
& (l1_vectsp_1 X1 X0))))))))))\wedge(((v2_struct_0 X2)\wedge((v13_algstr_0 \\
& X2)\wedge((v8_vectsp_1 X2 X0)\wedge((v9_vectsp_1 X2 X0)\wedge((v10_vectsp_1 \\
& X2 X0)\wedge((v11_vectsp_1 X2 X0)\wedge((v2_rlvect_1 X2)\wedge((v3_rlvect_1 \\
& X2)\wedge((v4_rlvect_1 X2)\wedge((v1_matrlin X2 X0)\wedge(l1_vectsp_1 X2 X0))))))))))\wedge \\
& ((m1_matrlin X3 X0 X1)\wedge((m1_finseq_1 X4 (u1_struct_0 X2))\wedge(m1_matrix_1 \\
& X5 (u1_struct_0 X0) (k3_finseq_1 X3) (k3_finseq_1 X4))))))\Rightarrow(\\
& (v1_funct_1 (k4_matrlin2 X0 X1 X2 X3 X4 X5)\wedge((v1_funct_2 (k4_matrlin2 \\
& X0 X1 X2 X3 X4 X5) (u1_struct_0 X1) (u1_struct_0 X2))\wedge((v13_vectsp_1 \\
& (k4_matrlin2 X0 X1 X2 X3 X4 X5) X1 X2)\wedge(v1_mod_2 (k4_matrlin2 X0 X1 \\
& X2 X3 X4 X5) X0 X1 X2)))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(((v2_struct_0 X0)\wedge((-v6_struct_0 X0)\wedge \\
& ((v13_algstr_0 X0)\wedge((v33_algstr_0 X0)\wedge((v3_group_1 X0)\wedge((v5_group_1 \\
& X0)\wedge((v4_vectsp_1 X0)\wedge((v5_vectsp_1 X0)\wedge((v2_rlvect_1 X0)\wedge \\
& ((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge(l6_algstr_0 X0))))))))))\wedge \\
& ((v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v8_vectsp_1 X1 X0)\wedge \\
& (v9_vectsp_1 X1 X0)\wedge((v10_vectsp_1 X1 X0)\wedge((v11_vectsp_1 X1 \\
& X0)\wedge((v2_rlvect_1 X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge \\
& ((v1_matrlin X1 X0)\wedge(l1_vectsp_1 X1 X0))))))))))\Rightarrow(\forall X2. \\
& (m1_matrlin X2 X0 X1)\Rightarrow(m2_finseq_1 X2 (u1_struct_0 X1)))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\
& ((((-v2_struct_0 X0)\wedge((-v6_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge \\
& ((v33_algstr_0 X0)\wedge((v3_group_1 X0)\wedge((v5_group_1 X0)\wedge((v4_vectsp_1 \\
& X0)\wedge((v5_vectsp_1 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge \\
& ((v4_rlvect_1 X0)\wedge(l6_algstr_0 X0))))))))))\wedge(((v2_struct_0 \\
& X1)\wedge((v13_algstr_0 X1)\wedge((v8_vectsp_1 X1 X0)\wedge((v9_vectsp_1 X1 \\
& X0)\wedge((v10_vectsp_1 X1 X0)\wedge((v11_vectsp_1 X1 X0)\wedge((v2_rlvect_1 \\
& X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v1_matrlin X1 X0)\wedge \\
& (l1_vectsp_1 X1 X0))))))))))\wedge(((v2_struct_0 X2)\wedge((v13_algstr_0 \\
& X2)\wedge((v8_vectsp_1 X2 X0)\wedge((v9_vectsp_1 X2 X0)\wedge((v10_vectsp_1 \\
& X2 X0)\wedge((v11_vectsp_1 X2 X0)\wedge((v2_rlvect_1 X2)\wedge((v3_rlvect_1 \\
& X2)\wedge((v4_rlvect_1 X2)\wedge((v1_matrlin X2 X0)\wedge(l1_vectsp_1 X2 X0))))))))))\wedge \\
& ((m1_matrlin X3 X0 X1)\wedge((m1_finseq_1 X4 (u1_struct_0 X2))\wedge(m1_matrix_1 \\
& X5 (u1_struct_0 X0) (k3_finseq_1 X3) (k3_finseq_1 X4))))))\Rightarrow(\\
& (v1_funct_1 (k4_matrlin2 X0 X1 X2 X3 X4 X5)\wedge((v1_funct_2 (k4_matrlin2 \\
& X0 X1 X2 X3 X4 X5) (u1_struct_0 X1) (u1_struct_0 X2))\wedge(m1_subset_1 \\
& (k4_matrlin2 X0 X1 X2 X3 X4 X5) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X1) (u1_struct_0 X2))))))
\end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(((v2_struct_0 X0)\wedge((-v6_struct_0 X0)\wedge((v13_algstr_0 \\
& X0)\wedge((v33_algstr_0 X0)\wedge((v3_group_1 X0)\wedge((v5_group_1 X0)\wedge(\\
& (v4_vectsp_1 X0)\wedge((v5_vectsp_1 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 \\
& X0)\wedge((v4_rlvect_1 X0)\wedge(l6_algstr_0 X0))))))))))\Rightarrow(\forall X1. \\
& ((v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v8_vectsp_1 X1 X0)\wedge \\
& ((v9_vectsp_1 X1 X0)\wedge((v10_vectsp_1 X1 X0)\wedge((v11_vectsp_1 X1 \\
& X0)\wedge((v2_rlvect_1 X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge \\
& ((v1_matrlin X1 X0)\wedge(l1_vectsp_1 X1 X0))))))))))\Rightarrow(\forall X2. \\
& ((v2_struct_0 X2)\wedge((v13_algstr_0 X2)\wedge((v8_vectsp_1 X2 X0)\wedge \\
& ((v9_vectsp_1 X2 X0)\wedge((v10_vectsp_1 X2 X0)\wedge((v11_vectsp_1 X2 \\
& X0)\wedge((v2_rlvect_1 X2)\wedge((v3_rlvect_1 X2)\wedge((v4_rlvect_1 X2)\wedge \\
& ((v1_matrlin X2 X0)\wedge(l1_vectsp_1 X2 X0))))))))))\Rightarrow(\forall X3. \\
& (m1_matrlin X3 X0 X1)\Rightarrow(\forall X4.(m1_matrlin X4 X0 X2)\Rightarrow(\forall X5. \\
& (m1_matrix_1 X5 (u1_struct_0 X0) (k3_finseq_1 X3) (k3_finseq_1 \\
& X4))\Rightarrow(k10_ranknull X0 X1 X2 (k4_matrlin2 X0 X1 X2 X3 X4 X5) = k8_matrix13 \\
& X0 X5))))))
\end{aligned}$$