

t40_matrix_6

(TMLoTnFswRqM352BarEhknwHR7kFi6gzFoD)

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Let $v7_ordinal1 : \iota \Rightarrow o$ be given. 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 $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_matrix_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_matrix_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_matrix_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_matrix_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_matrix_1 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Let $k1_matrix_1 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k4_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_matrix_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k12_matrix_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_matrix_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $r2_matrix_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
 & X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge (\\
 & (v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v4_vectsp_1 \\
 & X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\
 & ((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 (u1_struct_0 \\
 & X0)))) \Rightarrow (\forall X2. ((v1_matrix_1 X2) \wedge (m2_finseq_1 X2 (k3_finseq_2 \\
 & (u1_struct_0 X0)))) \Rightarrow (\forall X3. ((v1_matrix_1 X3) \wedge (m2_finseq_1 \\
 & X3 (k3_finseq_2 (u1_struct_0 X0)))) \Rightarrow (((k1_matrix_1 X1 = k3_finseq_1 \\
 & X2) \wedge (k1_matrix_1 X2 = k3_finseq_1 X3)) \Rightarrow (k4_matrix_3 X0 (k4_matrix_3 \\
 & X0 X1 X2) X3 = k4_matrix_3 X0 X1 (k4_matrix_3 X0 X2 X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(\neg v1_xboole_0\ X1) \Rightarrow (\\ & \forall X2.(m1_matrix_1\ X2\ X1\ X0\ X0) \Rightarrow ((k3_finseq_1\ X2 = X0) \wedge ((k1_matrix_1 \\ & X2 = X0) \wedge (k2_matrix_1\ X2 = k2_zfmisc_1\ (k2_finseq_1\ X0)\ (k2_finseq_1 \\ & X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2_struct_0\ X1) \wedge \\ & ((\neg v6_struct_0\ X1) \wedge (v13_algstr_0\ X1) \wedge (v33_algstr_0\ X1) \wedge (\\ & (v3_group_1\ X1) \wedge (v5_group_1\ X1) \wedge (v2_rlvect_1\ X1) \wedge (v3_rlvect_1 \\ & X1) \wedge (v4_rlvect_1\ X1) \wedge (v4_vectsp_1\ X1) \wedge (v5_vectsp_1\ X1) \wedge \\ & (l6_algstr_0\ X1)))))) \Rightarrow (\forall X2.(m1_matrix_1\ X2\ (u1_struct_0 \\ & X1)\ X0\ X0) \Rightarrow (k4_matrix_3\ X1\ X2\ (k12_matrix_1\ X1\ X0) = X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2_struct_0\ X1) \wedge \\ & ((\neg v6_struct_0\ X1) \wedge (v13_algstr_0\ X1) \wedge (v33_algstr_0\ X1) \wedge (\\ & (v3_group_1\ X1) \wedge (v5_group_1\ X1) \wedge (v2_rlvect_1\ X1) \wedge (v3_rlvect_1 \\ & X1) \wedge (v4_rlvect_1\ X1) \wedge (v4_vectsp_1\ X1) \wedge (v5_vectsp_1\ X1) \wedge \\ & (l6_algstr_0\ X1)))))) \Rightarrow (\forall X2.(m1_matrix_1\ X2\ (u1_struct_0 \\ & X1)\ X0\ X0) \Rightarrow (k4_matrix_3\ X1\ (k12_matrix_1\ X1\ X0)\ X2 = X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v7_ordinal1\ X0) \wedge \\ & (((\neg v2_struct_0\ X1) \wedge ((\neg v6_struct_0\ X1) \wedge (v13_algstr_0\ X1) \wedge \\ & (v33_algstr_0\ X1) \wedge (v3_group_1\ X1) \wedge (v5_group_1\ X1) \wedge (v2_rlvect_1 \\ & X1) \wedge (v3_rlvect_1\ X1) \wedge (v4_rlvect_1\ X1) \wedge (v4_vectsp_1\ X1) \wedge \\ & (v5_vectsp_1\ X1) \wedge (l6_algstr_0\ X1)))))) \wedge ((m1_matrix_1 \\ & X2\ (u1_struct_0\ X1)\ X0\ X0) \wedge (m1_matrix_1\ X3\ (u1_struct_0\ X1)\ X0\ X0))) \Rightarrow \\ & ((r1_matrix_6\ X0\ X1\ X2\ X3) \Rightarrow (r1_matrix_6\ X0\ X1\ X3\ X2)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v7_ordinal1\ X0) \wedge \\ & (((\neg v2_struct_0\ X1) \wedge ((\neg v6_struct_0\ X1) \wedge (v13_algstr_0\ X1) \wedge \\ & (v33_algstr_0\ X1) \wedge (v3_group_1\ X1) \wedge (v5_group_1\ X1) \wedge (v2_rlvect_1 \\ & X1) \wedge (v3_rlvect_1\ X1) \wedge (v4_rlvect_1\ X1) \wedge (v4_vectsp_1\ X1) \wedge \\ & (v5_vectsp_1\ X1) \wedge (l6_algstr_0\ X1)))))) \wedge ((m1_matrix_1 \\ & X2\ (u1_struct_0\ X1)\ X0\ X0) \wedge (m1_matrix_1\ X3\ (u1_struct_0\ X1)\ X0\ X0))) \Rightarrow \\ & (k4_matrix_6\ X0\ X1\ X2\ X3 = k4_matrix_3\ X1\ X2\ X3) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0\ X0) \wedge (l1_struct_0\ X0)) \Rightarrow (\neg v1_xboole_0\ (u1_struct_0\ X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((v7_ordinal1 X1)\wedge(v7_ordinal1 X2)))\Rightarrow(\forall X3.(m1_matrix_1 X3 X0 X1 X2)\Rightarrow((v1_matrix_1 X3)\wedge(m2_finseq_1 X3 (k3_finseq_2 X0)))) \quad (8)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0)\Rightarrow((l2_algstr_0 X0)\wedge(l5_algstr_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0)\Rightarrow((l2_struct_0 X0)\wedge(l1_algstr_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l1_algstr_0 X0)\Rightarrow(l1_struct_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7_ordinal1 X0)\wedge(((\neg v2_struct_0 X1)\wedge((\neg v6_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v33_algstr_0 X1)\wedge((v3_group_1 X1)\wedge((v5_group_1 X1)\wedge((v2_rlvect_1 X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v4_vectsp_1 X1)\wedge((v5_vectsp_1 X1)\wedge(l6_algstr_0 X1))))))))))))))\wedge(m1_matrix_1 X2 (u1_struct_0 X1) X0 X0))\Rightarrow(m1_matrix_1 (k5_matrix_6 X0 X1 X2) (u1_struct_0 X1) X0 X0) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v7_ordinal1 X0)\wedge(((\neg v2_struct_0 X1)\wedge((\neg v6_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v33_algstr_0 X1)\wedge((v3_group_1 X1)\wedge((v5_group_1 X1)\wedge((v2_rlvect_1 X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v4_vectsp_1 X1)\wedge((v5_vectsp_1 X1)\wedge(l6_algstr_0 X1))))))))))))))\wedge((m1_matrix_1 X2 (u1_struct_0 X1) X0 X0)\wedge(m1_matrix_1 X3 (u1_struct_0 X1) X0 X0)))\Rightarrow(m1_matrix_1 (k4_matrix_6 X0 X1 X2 X3) (u1_struct_0 X1) X0 X0) \quad (13)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge((\neg v6_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v33_algstr_0 X1)\wedge((v3_group_1 X1)\wedge((v5_group_1 X1)\wedge((v2_rlvect_1 X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v4_vectsp_1 X1)\wedge((v5_vectsp_1 X1)\wedge(l6_algstr_0 X1))))))))))))))\Rightarrow(\forall X2.(m1_matrix_1 X2 (u1_struct_0 X1) X0 X0)\Rightarrow((v1_matrix_6 X2 X0 X1)\Rightarrow(\forall X3.(m1_matrix_1 X3 (u1_struct_0 X1) X0 X0)\Rightarrow((X3 = k5_matrix_6 X0 X1 X2)\Leftrightarrow(r2_matrix_6 X0 X1 X3 X2)))))) \quad (14)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2_struct_0\ X1) \wedge \\
& ((\neg v6_struct_0\ X1) \wedge ((v13_algstr_0\ X1) \wedge ((v33_algstr_0\ X1) \wedge \\
& (v3_group_1\ X1) \wedge ((v5_group_1\ X1) \wedge ((v2_rlvect_1\ X1) \wedge ((v3_rlvect_1 \\
& X1) \wedge ((v4_rlvect_1\ X1) \wedge ((v4_vectsp_1\ X1) \wedge ((v5_vectsp_1\ X1) \wedge \\
& (l6_algstr_0\ X1)))))))))) \Rightarrow (\forall X2.(m1_matrix_1\ X2\ (u1_struct_0 \\
& X1)\ X0\ X0) \Rightarrow (\forall X3.(m1_matrix_1\ X3\ (u1_struct_0\ X1)\ X0\ X0) \Rightarrow \\
& ((r2_matrix_6\ X0\ X1\ X2\ X3) \Leftrightarrow ((k4_matrix_3\ X1\ X2\ X3 = k4_matrix_3\ X1 \\
& X3\ X2) \wedge (k4_matrix_3\ X1\ X2\ X3 = k12_matrix_1\ X1\ X0))))))
\end{aligned} \tag{15}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2_struct_0\ X1) \wedge \\
& ((\neg v6_struct_0\ X1) \wedge ((v13_algstr_0\ X1) \wedge ((v33_algstr_0\ X1) \wedge \\
& (v3_group_1\ X1) \wedge ((v5_group_1\ X1) \wedge ((v2_rlvect_1\ X1) \wedge ((v3_rlvect_1 \\
& X1) \wedge ((v4_rlvect_1\ X1) \wedge ((v4_vectsp_1\ X1) \wedge ((v5_vectsp_1\ X1) \wedge \\
& (l6_algstr_0\ X1)))))))))) \Rightarrow (\forall X2.(m1_matrix_1\ X2\ (u1_struct_0 \\
& X1)\ X0\ X0) \Rightarrow (\forall X3.(m1_matrix_1\ X3\ (u1_struct_0\ X1)\ X0\ X0) \Rightarrow \\
& ((r1_matrix_6\ X0\ X1\ X2\ X3) \Leftrightarrow (k4_matrix_3\ X1\ X2\ X3 = k4_matrix_3\ X1 \\
& X3\ X2))))))
\end{aligned} \tag{16}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2_struct_0\ X1) \wedge \\
& ((\neg v6_struct_0\ X1) \wedge ((v13_algstr_0\ X1) \wedge ((v33_algstr_0\ X1) \wedge \\
& (v3_group_1\ X1) \wedge ((v5_group_1\ X1) \wedge ((v2_rlvect_1\ X1) \wedge ((v3_rlvect_1 \\
& X1) \wedge ((v4_rlvect_1\ X1) \wedge ((v4_vectsp_1\ X1) \wedge ((v5_vectsp_1\ X1) \wedge \\
& (l6_algstr_0\ X1)))))))))) \Rightarrow (\forall X2.(m1_matrix_1\ X2\ (u1_struct_0 \\
& X1)\ X0\ X0) \Rightarrow (\forall X3.(m1_matrix_1\ X3\ (u1_struct_0\ X1)\ X0\ X0) \Rightarrow \\
& (((v1_matrix_6\ X2\ X0\ X1) \wedge (r1_matrix_6\ X0\ X1\ X2\ X3)) \Rightarrow (r1_matrix_6 \\
& X0\ X1\ (k5_matrix_6\ X0\ X1\ X2)\ X3))))))
\end{aligned}$$