

t40_matrix_8

(TMKC8ywNUYUz7m4feSZEmDae9iNtMYx1yBL)

October 27, 2020

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 $r1_matrix_8 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k2_matrix_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_matrix_1 : \iota \Rightarrow \iota$ be given. Let $k4_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k4_matrix_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k5_matrix_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_matrix_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
 & X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge (\\
 & (v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v4_vectsp_1 \\
 & X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\
 & ((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 (u1_struct_0 \\
 & X0)))) \Rightarrow (\forall X2. ((v1_matrix_1 X2) \wedge (m2_finseq_1 X2 (k3_finseq_2 \\
 & (u1_struct_0 X0)))) \Rightarrow (\forall X3. ((v1_matrix_1 X3) \wedge (m2_finseq_1 \\
 & X3 (k3_finseq_2 (u1_struct_0 X0)))) \Rightarrow (((k3_finseq_1 X2 = k3_finseq_1 \\
 & X3) \wedge ((k1_matrix_1 X2 = k1_matrix_1 X3) \wedge (k3_finseq_1 X1 = k1_matrix_1 \\
 & X2))) \Rightarrow ((r1_xxreal_0 (k3_finseq_1 X2) k6_numbers) \vee ((r1_xxreal_0 \\
 & (k3_finseq_1 X1) k6_numbers) \vee (k4_matrix_3 X0 (k3_matrix_3 X0 \\
 & X2 X3) X1 = k3_matrix_3 X0 (k4_matrix_3 X0 X2 X1) (k4_matrix_3 X0 X3 \\
 & X1)))))))))
 \end{aligned}$$

(1)

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge (\\
& (v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v4_vectsp_1 \\
& X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 (u1_struct_0 \\
& X0)))) \Rightarrow (\forall X2.((v1_matrix_1 X2) \wedge (m2_finseq_1 X2 (k3_finseq_2 \\
& (u1_struct_0 X0)))) \Rightarrow (\forall X3.((v1_matrix_1 X3) \wedge (m2_finseq_1 \\
& X3 (k3_finseq_2 (u1_struct_0 X0)))) \Rightarrow (((k3_finseq_1 X2 = k3_finseq_1 \\
& X3) \wedge ((k1_matrix_1 X2 = k1_matrix_1 X3) \wedge (k1_matrix_1 X1 = k3_finseq_1 \\
& X2))) \Rightarrow ((r1_xxreal_0 (k3_finseq_1 X1) k6_numbers) \vee ((r1_xxreal_0 \\
& (k3_finseq_1 X2) k6_numbers) \vee (k4_matrix_3 X0 X1 (k3_matrix_3 \\
& X0 X2 X3) = k3_matrix_3 X0 (k4_matrix_3 X0 X1 X2) (k4_matrix_3 X0 X1 \\
& X3)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\\
& \forall X2.(m1_matrix_1 X2 X1 X0 X0) \Rightarrow ((k3_finseq_1 X2 = X0) \wedge ((k1_matrix_1 \\
& X2 = X0) \wedge (k2_matrix_1 X2 = k2_zfmisc_1 (k2_finseq_1 X0) (k2_finseq_1 \\
& X0))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((v7_ordinal1 X0) \wedge \\
& (((\neg v2_struct_0 X1) \wedge ((\neg v6_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge \\
& ((v33_algstr_0 X1) \wedge ((v3_group_1 X1) \wedge ((v5_group_1 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v4_vectsp_1 X1) \wedge \\
& ((v5_vectsp_1 X1) \wedge (l6_algstr_0 X1)))))))))) \wedge ((m1_matrix_1 \\
& X2 (u1_struct_0 X1) X0 X0) \wedge (m1_matrix_1 X3 (u1_struct_0 X1) X0 X0))) \Rightarrow \\
& ((r1_matrix_8 X0 X1 X2 X3) \Rightarrow (r1_matrix_8 X0 X1 X3 X2))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((v7_ordinal1 X0) \wedge \\
& (((\neg v2_struct_0 X1) \wedge ((\neg v6_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge \\
& ((v33_algstr_0 X1) \wedge ((v3_group_1 X1) \wedge ((v5_group_1 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v4_vectsp_1 X1) \wedge \\
& ((v5_vectsp_1 X1) \wedge (l6_algstr_0 X1)))))))))) \wedge ((m1_matrix_1 \\
& X2 (u1_struct_0 X1) X0 X0) \wedge (m1_matrix_1 X3 (u1_struct_0 X1) X0 X0))) \Rightarrow \\
& (k4_matrix_6 X0 X1 X2 X3 = k4_matrix_3 X1 X2 X3)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v7_ordinal1\ X0)\wedge \\ & (((\neg v2_struct_0\ X1)\wedge(\neg v6_struct_0\ X1)\wedge(v13_algstr_0\ X1)\wedge \\ & ((v33_algstr_0\ X1)\wedge(v3_group_1\ X1)\wedge(v5_group_1\ X1)\wedge(v2_rlvect_1 \\ & X1)\wedge(v3_rlvect_1\ X1)\wedge(v4_rlvect_1\ X1)\wedge(v4_vectsp_1\ X1)\wedge \\ & ((v5_vectsp_1\ X1)\wedge(l6_algstr_0\ X1))))))\wedge(m1_matrix_1 \\ & X2\ (u1_struct_0\ X1)\ X0\ X0)\wedge(m1_matrix_1\ X3\ (u1_struct_0\ X1)\ X0\ X0))\Rightarrow \\ & (k2_matrix_6\ X0\ X1\ X2\ X3 = k3_matrix_3\ X1\ X2\ X3) \end{aligned} \quad (6)$$

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.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0\ X0)\wedge(v7_ordinal1 \\ & X1)\wedge(v7_ordinal1\ X2))\Rightarrow(\forall X3.(m1_matrix_1\ X3\ X0\ X1\ X2)\Rightarrow \\ & ((v1_matrix_1\ X3)\wedge(m2_finseq_1\ X3\ (k3_finseq_2\ X0)))) \end{aligned} \quad (8)$$

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.

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

Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((v7_ordinal1\ X0)\wedge \\
& ((\neg v2_struct_0\ X1)\wedge(\neg v6_struct_0\ X1)\wedge((v13_algstr_0\ X1)\wedge \\
& ((v33_algstr_0\ X1)\wedge(v3_group_1\ X1)\wedge((v5_group_1\ X1)\wedge((v2_rlvect_1 \\
& X1)\wedge((v3_rlvect_1\ X1)\wedge((v4_rlvect_1\ X1)\wedge((v4_vectsp_1\ X1)\wedge \\
& ((v5_vectsp_1\ X1)\wedge(l6_algstr_0\ X1))))))))))\wedge((m1_matrix_1 \\
& X2\ (u1_struct_0\ X1)\ X0\ X0)\wedge(m1_matrix_1\ X3\ (u1_struct_0\ X1)\ X0\ X0))\Rightarrow \\
& (m1_matrix_1\ (k2_matrix_6\ X0\ X1\ X2\ X3)\ (u1_struct_0\ X1)\ X0\ X0)
\end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2_struct_0\ X1)\wedge \\
& ((\neg v6_struct_0\ X1)\wedge((v13_algstr_0\ X1)\wedge((v33_algstr_0\ X1)\wedge(\\
& (v3_group_1\ X1)\wedge((v5_group_1\ X1)\wedge((v2_rlvect_1\ X1)\wedge((v3_rlvect_1 \\
& X1)\wedge((v4_rlvect_1\ X1)\wedge((v4_vectsp_1\ X1)\wedge((v5_vectsp_1\ X1)\wedge \\
& (l6_algstr_0\ X1))))))))))\Rightarrow(\forall X2.(m1_matrix_1\ X2\ (u1_struct_0 \\
& X1)\ X0\ X0)\Rightarrow(\forall X3.(m1_matrix_1\ X3\ (u1_struct_0\ X1)\ X0\ X0)\Rightarrow \\
& ((r1_matrix_8\ X0\ X1\ X2\ X3)\Leftrightarrow(\exists X4.(m1_matrix_1\ X4\ (u1_struct_0 \\
& X1)\ X0\ X0)\wedge((v1_matrix_6\ X4\ X0\ X1)\wedge(X2 = k4_matrix_6\ X0\ X1\ (k4_matrix_6 \\
& X0\ X1\ (k5_matrix_6\ X0\ X1\ X4)\ X3)\ X4))))))
\end{aligned} \tag{15}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(v7_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2_struct_0\ X1)\wedge \\
& ((\neg v6_struct_0\ X1)\wedge((v13_algstr_0\ X1)\wedge((v33_algstr_0\ X1)\wedge(\\
& (v3_group_1\ X1)\wedge((v5_group_1\ X1)\wedge((v2_rlvect_1\ X1)\wedge((v3_rlvect_1 \\
& X1)\wedge((v4_rlvect_1\ X1)\wedge((v4_vectsp_1\ X1)\wedge((v5_vectsp_1\ X1)\wedge \\
& (l6_algstr_0\ X1))))))))))\Rightarrow(\forall X2.(m1_matrix_1\ X2\ (u1_struct_0 \\
& X1)\ X0\ X0)\Rightarrow(\forall X3.(m1_matrix_1\ X3\ (u1_struct_0\ X1)\ X0\ X0)\Rightarrow \\
& ((r1_matrix_8\ X0\ X1\ X2\ X3)\Rightarrow((r1_xxreal_0\ X0\ k6_numbers)\vee(r1_matrix_8 \\
& X0\ X1\ (k2_matrix_6\ X0\ X1\ (k2_matrix_6\ X0\ X1\ X2\ X2)\ X2)\ (k2_matrix_6 \\
& X0\ X1\ (k2_matrix_6\ X0\ X1\ X3\ X3)\ X3))))))
\end{aligned}$$