

t6_matrix_4

(TMS1fwZ1VVUoiyFJKbXBidAGFzdGzY1r3mr)

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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 $v2_rlvect_1 : \iota \Rightarrow o$ 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 $v1_matrix_1 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_matrix_1 : \iota \Rightarrow \iota$ be given. Let $k3_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $m1_matrix_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k5_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k4_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_card_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_card_1 : \iota \Rightarrow o$ 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 $k1_numbers : \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.((k1_card_1 X0 = k6_numbers) \wedge (k1_card_1 X1 = k6_numbers)) \Rightarrow (X0 = X1) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\neg(X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(v7_ordinal1\ X1) \Rightarrow (\forall X2. \\
& ((\neg v2_struct_0\ X2) \wedge ((\neg v6_struct_0\ X2) \wedge ((v13_algstr_0\ X2) \wedge (\\
& (v33_algstr_0\ X2) \wedge ((v3_group_1\ X2) \wedge ((v5_group_1\ X2) \wedge ((v2_rlvect_1 \\
& X2) \wedge ((v3_rlvect_1\ X2) \wedge ((v4_rlvect_1\ X2) \wedge ((v4_vectsp_1\ X2) \wedge \\
& ((v5_vectsp_1\ X2) \wedge (l6_algstr_0\ X2)))))))))) \Rightarrow (\forall X3. \\
& (m1_matrix_1\ X3\ (u1_struct_0\ X2)\ X0\ X1) \Rightarrow (k3_matrix_3\ X2\ X3\ (k1_matrix_3 \\
& X2\ X0\ X1) = X3)))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (\neg(k6_numbers \neq X0) \wedge (r1_xreal_0\ X0\ k6_numbers)) \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0\ X0) \wedge ((\neg v6_struct_0\ X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v33_algstr_0\ X0) \wedge ((v3_group_1\ X0) \wedge ((v5_group_1\ X0) \wedge (\\
& (v2_rlvect_1\ X0) \wedge ((v3_rlvect_1\ X0) \wedge ((v4_rlvect_1\ X0) \wedge ((v4_vectsp_1 \\
& X0) \wedge ((v5_vectsp_1\ X0) \wedge (l6_algstr_0\ X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1_matrix_1\ X1) \wedge (m2_finseq_1\ X1\ (k3_finseq_2\ (u1_struct_0 \\
& X0)))) \Rightarrow (\forall X2.((v1_matrix_1\ X2) \wedge (m2_finseq_1\ X2\ (k3_finseq_2 \\
& (u1_struct_0\ X0)))) \Rightarrow (\forall X3.((v1_matrix_1\ X3) \wedge (m2_finseq_1 \\
& X3\ (k3_finseq_2\ (u1_struct_0\ X0)))) \Rightarrow (((k3_finseq_1\ X1 = k3_finseq_1 \\
& X2) \wedge (k1_matrix_1\ X1 = k1_matrix_1\ X2)) \Rightarrow (k3_matrix_3\ X0\ (k3_matrix_3 \\
& X0\ X1\ X2)\ X3 = k3_matrix_3\ X0\ X1\ (k3_matrix_3\ X0\ X2\ X3))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X0\ X1) \Rightarrow ((v1_xboole_0\ X1) \vee (X0 \in X1)) \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0\ X0) \wedge ((\neg v6_struct_0\ X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v33_algstr_0\ X0) \wedge ((v3_group_1\ X0) \wedge ((v5_group_1\ X0) \wedge (\\
& (v2_rlvect_1\ X0) \wedge ((v3_rlvect_1\ X0) \wedge ((v4_rlvect_1\ X0) \wedge ((v4_vectsp_1 \\
& X0) \wedge ((v5_vectsp_1\ X0) \wedge (l6_algstr_0\ X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1_matrix_1\ X1) \wedge (m2_finseq_1\ X1\ (k3_finseq_2\ (u1_struct_0 \\
& X0)))) \Rightarrow (k3_matrix_3\ X0\ X1\ (k2_matrix_3\ X0\ X1) = k1_matrix_3\ X0\ (\\
& k3_finseq_1\ X1)\ (k1_matrix_1\ X1)))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ & X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge \\ & (v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v4_vectsp_1 \\ & X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\ & ((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 (u1_struct_0 \\ & X0)))) \Rightarrow (\forall X2.((v1_matrix_1 X2) \wedge (m2_finseq_1 X2 (k3_finseq_2 \\ & (u1_struct_0 X0)))) \Rightarrow (((k3_finseq_1 X1 = k3_finseq_1 X2) \wedge (k1_matrix_1 \\ & X1 = k1_matrix_1 X2)) \Rightarrow (k3_matrix_3 X0 X1 X2 = k3_matrix_3 X0 X2 X1)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_matrix_1 X1) \wedge \\ & (m2_finseq_1 X1 (k3_finseq_2 X0))) \Rightarrow ((\neg r1_xreal_0 (k3_finseq_1 \\ & X1) k1_xboole_0) \Rightarrow (\forall X2.(v7_ordinal1 X2) \Rightarrow ((m1_matrix_1 \\ & X1 X0 (k3_finseq_1 X1) X2) \Leftrightarrow (X2 = k1_matrix_1 X1)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1_finseq_2 X1 X0) \Rightarrow (\forall X2.(m2_finseq_2 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (13)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (14)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((v7_ordinal1 \\ & X1) \wedge (m1_subset_1 X2 X0))) \Rightarrow (k5_finseq_2 X0 X1 X2 = k2_finseq_2 X1 \\ & X2) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & (k3_finseq_1 X0 = k1_card_1 X0) \end{aligned} \quad (17)$$

Assume the following.

$$(\neg v1_xboole_0\ k4_ordinal1) \wedge (v3_ordinal1\ k4_ordinal1) \quad (18)$$

Assume the following.

$$\forall X0. \forall X1. ((v7_ordinal1\ X0) \wedge (\neg v1_xboole_0\ X1)) \Rightarrow (\neg v1_xboole_0\ (k4_finseq_2\ X0\ X1)) \quad (19)$$

Assume the following.

$$\forall X0. \forall X1. (v7_ordinal1\ X0) \Rightarrow ((v1_relat_1\ (k2_finseq_2\ X0\ X1)) \wedge ((v1_funct_1\ (k2_finseq_2\ X0\ X1)) \wedge ((v3_card_1\ (k2_finseq_2\ X0\ X1)\ X0) \wedge (v1_finseq_1\ (k2_finseq_2\ X0\ X1)))))) \quad (20)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0\ X0) \wedge (l1_struct_0\ X0)) \Rightarrow (\neg v1_xboole_0\ (u1_struct_0\ X0)) \quad (21)$$

Assume the following.

$$v1_xboole_0\ k1_xboole_0 \quad (22)$$

Assume the following.

$$\forall X0. (v1_xboole_0\ X0) \Rightarrow ((v1_xboole_0\ (k1_card_1\ X0)) \wedge (v1_card_1\ (k1_card_1\ X0))) \quad (23)$$

Assume the following.

$$\forall X0. \forall X1. (m1_finseq_1\ X1\ X0) \Rightarrow ((v1_relat_1\ X1) \wedge ((v1_funct_1\ X1) \wedge (v1_finseq_1\ X1))) \quad (24)$$

Assume the following.

$$\forall X0. (l6_algstr_0\ X0) \Rightarrow ((l2_algstr_0\ X0) \wedge (l5_algstr_0\ X0)) \quad (25)$$

Assume the following.

$$\forall X0. (l2_struct_0\ X0) \Rightarrow (l1_struct_0\ X0) \quad (26)$$

Assume the following.

$$\forall X0. (l2_algstr_0\ X0) \Rightarrow ((l2_struct_0\ X0) \wedge (l1_algstr_0\ X0)) \quad (27)$$

Assume the following.

$$m1_subset_1\ k5_numbers\ (k1_zfmisc_1\ k1_numbers) \quad (28)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0\ X0) \wedge ((v7_ordinal1\ X1) \wedge (m1_subset_1\ X2\ X0))) \Rightarrow (m2_finseq_2\ (k5_finseq_2\ X0\ X1\ X2)\ X0\ (k4_finseq_2\ X1\ X0)) \quad (29)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0) \Rightarrow (m1_subset_1 (k4_struct_0 X0) (u1_struct_0 X0)) \quad (30)$$

Assume the following.

$$\forall X0.\forall X1.(v7_ordinal1 X0) \Rightarrow (m1_finseq_2 (k4_finseq_2 X0 X1) X1) \quad (31)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (m2_subset_1 (k3_finseq_1 X0) k1_numbers k5_numbers) \quad (32)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge \\ & ((v13_algstr_0 X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 \\ & X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\ & ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \wedge \\ & ((v1_matrix_1 X1) \wedge (m1_finseq_1 X1 (k3_finseq_2 (u1_struct_0 \\ & X0)))))) \Rightarrow ((v1_matrix_1 (k2_matrix_3 X0 X1)) \wedge (m2_finseq_1 (k2_matrix_3 \\ & X0 X1) (k3_finseq_2 (u1_struct_0 X0)))) \end{aligned} \quad (33)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v1_finseq_1 X0) \wedge (v1_matrix_1 X0)))) \Rightarrow (m1_subset_1 (k1_matrix_1 X0) k5_numbers) \quad (34)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ & X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge \\ & (v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v4_vectsp_1 \\ & X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\ & (v7_ordinal1 X1) \Rightarrow (\forall X2.(v7_ordinal1 X2) \Rightarrow (k1_matrix_3 \\ & X0 X1 X2 = k5_finseq_2 (k4_finseq_2 X2 (u1_struct_0 X0)) X1 (k5_finseq_2 \\ & (u1_struct_0 X0) X2 (k4_struct_0 X0)))))) \end{aligned} \quad (35)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (36)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v7_ordinal1 X0) \quad (37)$$

Assume the following.

$$\forall X0.(v3_card_1 X0 k1_xboole_0) \Rightarrow (v1_xboole_0 X0) \quad (38)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ & X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge \\ & (v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v4_vectsp_1 \\ & X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\ & ((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 (u1_struct_0 \\ & X0)))) \Rightarrow (\forall X2. ((v1_matrix_1 X2) \wedge (m2_finseq_1 X2 (k3_finseq_2 \\ & (u1_struct_0 X0)))) \Rightarrow (((k3_finseq_1 X1 = k3_finseq_1 X2) \wedge ((k1_matrix_1 \\ & X1 = k1_matrix_1 X2) \wedge (X1 = k3_matrix_3 X0 X1 X2))) \Rightarrow (X2 = k1_matrix_3 \\ & X0 (k3_finseq_1 X1) (k1_matrix_1 X1)))))) \end{aligned}$$