

t16_matrix_5 (TMEm- ruRc94GMSEHycWmThrpi6AXQ1estdBF)

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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 $k2_numbers : \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_matrix_1 : \iota \Rightarrow \iota$ be given. Let $k3_matrix_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_matrix_5 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_matrix_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_complfld : \iota$ be given. Let $v36_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_vectsp_1 : \iota \Rightarrow o$ be given. Let $v6_vectsp_1 : \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ 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 $k1_matrix_5 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k2_matrix_5 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
 & X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge (\\
 & (v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v4_vectsp_1 \\
 & X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\
 & ((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 (u1_struct_0 \\
 & X0)))) \Rightarrow (k3_matrix_3 X0 X1 (k2_matrix_3 X0 X1) = k1_matrix_3 X0 (\\
 & k3_finseq_1 X1) (k1_matrix_1 X1)))
 \end{aligned} \tag{1}$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ & X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge \\ & (v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v4_vectsp_1 \\ & X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\ & ((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 (u1_struct_0 \\ & X0)))) \Rightarrow (\forall X2.((v1_matrix_1 X2) \wedge (m2_finseq_1 X2 (k3_finseq_2 \\ & (u1_struct_0 X0)))) \Rightarrow (((k3_finseq_1 X1 = k3_finseq_1 X2) \wedge (k1_matrix_1 \\ & X1 = k1_matrix_1 X2)) \Rightarrow (X1 = k1_matrix_4 X0 (k3_matrix_3 X0 X1 X2) \\ & X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (5)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (6)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \quad (7)$$

Assume the following.

$$\begin{aligned} & (\neg v6_struct_0 k1_complfld) \wedge ((v13_algstr_0 k1_complfld) \wedge ((\\ & v33_algstr_0 k1_complfld) \wedge ((v36_algstr_0 k1_complfld) \wedge ((v3_group_1 \\ & k1_complfld) \wedge ((v5_group_1 k1_complfld) \wedge ((v3_vectsp_1 k1_complfld) \wedge \\ & ((v5_vectsp_1 k1_complfld) \wedge ((v6_vectsp_1 k1_complfld) \wedge ((v2_rlvect_1 \\ & k1_complfld) \wedge ((v3_rlvect_1 k1_complfld) \wedge (v4_rlvect_1 k1_complfld)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$(v36_algstr_0 \ k1_complfld) \wedge (v4_vectsp_1 \ k1_complfld) \quad (9)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (10)$$

Assume the following.

$$(\neg v2_struct_0 \ k1_complfld) \wedge (v36_algstr_0 \ k1_complfld) \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. (m1_finseq_1 \ X1 \ X0) \Rightarrow ((v1_relat_1 \ X1) \wedge (v1_funct_1 \ X1) \wedge (v1_finseq_1 \ X1)) \quad (12)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 \ X0) \wedge ((\neg v6_struct_0 \\ & \ X0) \wedge ((v13_algstr_0 \ X0) \wedge (v33_algstr_0 \ X0) \wedge (v3_group_1 \ X0) \wedge \\ & ((v5_group_1 \ X0) \wedge ((v2_rlvect_1 \ X0) \wedge ((v3_rlvect_1 \ X0) \wedge (v4_rlvect_1 \\ & X0) \wedge (v4_vectsp_1 \ X0) \wedge ((v5_vectsp_1 \ X0) \wedge (l6_algstr_0 \ X0)))))))))) \wedge \\ & (((v1_matrix_1 \ X1) \wedge (m1_finseq_1 \ X1 \ (k3_finseq_2 \ (u1_struct_0 \\ & X0)))) \wedge ((v1_matrix_1 \ X2) \wedge (m1_finseq_1 \ X2 \ (k3_finseq_2 \ (u1_struct_0 \\ & X0)))))) \Rightarrow ((v1_matrix_1 \ (k3_matrix_3 \ X0 \ X1 \ X2)) \wedge (m2_finseq_1 \\ & (k3_matrix_3 \ X0 \ X1 \ X2) \ (k3_finseq_2 \ (u1_struct_0 \ X0)))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. ((v1_relat_1 \ X0) \wedge ((v1_funct_1 \ X0) \wedge (v1_finseq_1 \ X0))) \Rightarrow (m2_subset_1 \ (k3_finseq_1 \ X0) \ k1_numbers \ k5_numbers) \quad (15)$$

Assume the following.

$$\forall X0. ((v1_matrix_1 \ X0) \wedge (m1_finseq_1 \ X0 \ (k3_finseq_2 \ k2_numbers))) \Rightarrow ((v1_matrix_1 \ (k1_matrix_5 \ X0)) \wedge (m2_finseq_1 \ (k1_matrix_5 \ X0) \ (k3_finseq_2 \ (u1_struct_0 \ k1_complfld)))) \quad (16)$$

Assume the following.

$$\forall X0. ((v1_relat_1 \ X0) \wedge ((v1_funct_1 \ X0) \wedge ((v1_finseq_1 \ X0) \wedge (v1_matrix_1 \ X0)))) \Rightarrow (m1_subset_1 \ (k1_matrix_1 \ X0) \ k5_numbers) \quad (17)$$

Assume the following.

$$(v36_algstr_0 \ k1_complfld) \wedge (l6_algstr_0 \ k1_complfld) \quad (18)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(\forall X1.(v7_ordinal1\ X1)\Rightarrow(k8_matrix_5\ X0\ X1 = k2_matrix_5\ (k1_matrix_3\ k1_complfld\ X0\ X1))) \quad (19)$$

Assume the following.

$$\begin{aligned} &\forall X0.((v1_matrix_1\ X0)\wedge(m2_finseq_1\ X0\ (k3_finseq_2\ k2_numbers)))\Rightarrow \\ &(\forall X1.((v1_matrix_1\ X1)\wedge(m2_finseq_1\ X1\ (k3_finseq_2\ k2_numbers)))\Rightarrow \\ &(k3_matrix_5\ X0\ X1 = k2_matrix_5\ (k3_matrix_3\ k1_complfld\ (k1_matrix_5\ X0)\ (k1_matrix_5\ X1)))) \end{aligned} \quad (20)$$

Assume the following.

$$\forall X0.((v1_matrix_1\ X0)\wedge(m2_finseq_1\ X0\ (k3_finseq_2\ (u1_struct_0\ k1_complfld))))\Rightarrow(k2_matrix_5\ X0 = X0) \quad (21)$$

Assume the following.

$$\forall X0.((v1_matrix_1\ X0)\wedge(m2_finseq_1\ X0\ (k3_finseq_2\ k2_numbers)))\Rightarrow(k1_matrix_5\ X0 = X0) \quad (22)$$

Assume the following.

$$\begin{aligned} &\forall X0.((\neg v2_struct_0\ X0)\wedge((\neg v6_struct_0\ X0)\wedge((v13_algstr_0\ X0)\wedge((v33_algstr_0\ X0)\wedge((v3_group_1\ X0)\wedge((v5_group_1\ X0)\wedge \\ &(v2_rlvect_1\ X0)\wedge((v3_rlvect_1\ X0)\wedge((v4_rlvect_1\ X0)\wedge((v4_vectsp_1\ X0)\wedge((v5_vectsp_1\ X0)\wedge(l6_algstr_0\ X0))))))))))\Rightarrow(\forall X1. \\ &((v1_matrix_1\ X1)\wedge(m2_finseq_1\ X1\ (k3_finseq_2\ (u1_struct_0\ X0))))\Rightarrow(\forall X2.((v1_matrix_1\ X2)\wedge(m2_finseq_1\ X2\ (k3_finseq_2\ (u1_struct_0\ X0))))\Rightarrow(k1_matrix_4\ X0\ X1\ X2 = k3_matrix_3\ X0\ X1\ (k2_matrix_3\ X0\ X2)))) \end{aligned} \quad (23)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k4_ordinal1)\Rightarrow(v7_ordinal1\ X0) \quad (24)$$

Theorem 1

$$\begin{aligned} &\forall X0.((v1_matrix_1\ X0)\wedge(m2_finseq_1\ X0\ (k3_finseq_2\ k2_numbers)))\Rightarrow \\ &(\forall X1.((v1_matrix_1\ X1)\wedge(m2_finseq_1\ X1\ (k3_finseq_2\ k2_numbers)))\Rightarrow \\ &(((k3_finseq_1\ X0 = k3_finseq_1\ X1)\wedge((k1_matrix_1\ X0 = k1_matrix_1\ X1)\wedge(X0 = k3_matrix_5\ X0\ X1)))\Rightarrow(X1 = k8_matrix_5\ (k3_finseq_1\ X0)\ (k1_matrix_1\ X0)))) \end{aligned}$$