

t15_matrixc1

(TMZ9voASLM6mH2zurHazoDQCDNYjFrGhTWS)

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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 $k1_matrixc1 : \iota \Rightarrow \iota$ be given. Let $k5_matrix_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_matrix_5 : \iota \Rightarrow \iota$ be given. Let $k3_matrix_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_complfld : \iota$ be given. Let $k1_matrix_5 : \iota \Rightarrow \iota$ be given. Let $k2_matrix_5 : \iota \Rightarrow \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $v36_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ be given. Let $v3_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $v6_vectsp_1 : \iota \Rightarrow o$ 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 $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ 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 $k1_matrix_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k27_binop_2 : \iota$ be given. Let $u2_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k29_binop_2 : \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_complex1 : \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_complex1 : \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 k2_numbers))) \Rightarrow \\ ((k3_finseq_1 (k4_matrix_5 X0) = k3_finseq_1 X0) \wedge (k1_matrix_1 \\ (k4_matrix_5 X0) = k1_matrix_1 X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 k2_numbers))) \Rightarrow \\ (\forall X1.((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 k2_numbers))) \Rightarrow \\ (((k3_finseq_1 X0 = k3_finseq_1 X1) \wedge (k1_matrix_1 X0 = k1_matrix_1 \\ X1)) \Rightarrow (k1_matrixc1 (k3_matrix_5 X0 X1) = k3_matrix_5 (k1_matrixc1 \\ X0) (k1_matrixc1 X1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 (u1_struct_0 \\ k1_complfld)))) \Rightarrow (X0 = k1_matrix_5 (k2_matrix_5 X0)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 k2_numbers))) \Rightarrow \\ & (\forall X1.((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 k2_numbers))) \Rightarrow \\ & ((k1_matrix_5 X0 = k1_matrix_5 X1) \Rightarrow (X0 = X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 k2_numbers))) \Rightarrow \\ & (k1_matrixc1 (k4_matrix_5 X0) = k4_matrix_5 (k1_matrixc1 X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_matrix_1 X0) \wedge (m1_finseq_1 X0 (k3_finseq_2 k2_numbers))) \Rightarrow \\ & (k1_matrixc1 (k1_matrixc1 X0) = X0) \end{aligned} \quad (7)$$

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.

$$(\neg v2_struct_0 k1_complfld) \wedge (v36_algstr_0 k1_complfld) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 \\ & X0) \wedge ((v13_algstr_0 X0) \wedge (v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge \\ & ((v5_group_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 \\ & X0) \wedge ((v4_vectsp_1 X0) \wedge (v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \wedge \\ & (((v1_matrix_1 X1) \wedge (m1_finseq_1 X1 (k3_finseq_2 (u1_struct_0 \\ & X0)))) \wedge ((v1_matrix_1 X2) \wedge (m1_finseq_1 X2 (k3_finseq_2 (u1_struct_0 \\ & X0)))))) \Rightarrow ((v1_matrix_1 (k3_matrix_3 X0 X1 X2) \wedge (m2_finseq_1 \\ & (k3_matrix_3 X0 X1 X2) (k3_finseq_2 (u1_struct_0 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.((v1_matrix_1 X0) \wedge (m1_finseq_1 X0 (k3_finseq_2 (u1_struct_0 k1_complfld)))) \Rightarrow ((v1_matrix_1 (k2_matrix_5 X0)) \wedge (m2_finseq_1 (k2_matrix_5 X0) (k3_finseq_2 k2_numbers))) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge \\ & ((v13_algstr_0 X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 \\ & X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\ & ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \wedge \\ & ((v1_matrix_1 X1) \wedge (m1_finseq_1 X1 (k3_finseq_2 (u1_struct_0 \\ & X0)))))) \Rightarrow ((v1_matrix_1 (k2_matrix_3 X0 X1)) \wedge (m2_finseq_1 (k2_matrix_3 \\ & X0 X1) (k3_finseq_2 (u1_struct_0 X0)))) \quad (13) \end{aligned}$$

Assume the following.

$$\forall X0.((v1_matrix_1 X0) \wedge (m1_finseq_1 X0 (k3_finseq_2 k2_numbers))) \Rightarrow ((v1_matrix_1 (k1_matrixc1 X0)) \wedge (m2_finseq_1 (k1_matrixc1 X0) (k3_finseq_2 k2_numbers))) \quad (14)$$

Assume the following.

$$(v36_algstr_0 k1_complfld) \wedge (l6_algstr_0 k1_complfld) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 k2_numbers))) \Rightarrow \\ & (\forall X1.((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 k2_numbers))) \Rightarrow \\ & (k5_matrix_5 X0 X1 = k2_matrix_5 (k1_matrix_4 k1_complfld (k1_matrix_5 \\ & X0) (k1_matrix_5 X1)))) \quad (16) \end{aligned}$$

Assume the following.

$$\forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 k2_numbers))) \Rightarrow (k4_matrix_5 X0 = k2_matrix_5 (k2_matrix_3 k1_complfld (k1_matrix_5 X0))) \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 k2_numbers))) \Rightarrow \\ & (\forall X1.((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 k2_numbers))) \Rightarrow \\ & (k3_matrix_5 X0 X1 = k2_matrix_5 (k3_matrix_3 k1_complfld (k1_matrix_5 \\ & X0) (k1_matrix_5 X1)))) \quad (18) \end{aligned}$$

Assume the following.

$$\forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 (u1_struct_0 k1_complfld)))) \Rightarrow (k2_matrix_5 X0 = X0) \quad (19)$$

Assume the following.

$$\forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 k2_numbers))) \Rightarrow (k1_matrix_5 X0 = X0) \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge (v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\ & ((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 (u1_struct_0 X0)))) \Rightarrow (\forall X2.((v1_matrix_1 X2) \wedge (m2_finseq_1 X2 (k3_finseq_2 (u1_struct_0 X0)))) \Rightarrow (k1_matrix_4 X0 X1 X2 = k3_matrix_3 X0 X1 (k2_matrix_3 X0 X2)))) \quad (21) \end{aligned}$$

Assume the following.

$$\forall X0.((v36_algstr_0 X0) \wedge (l6_algstr_0 X0)) \Rightarrow ((X0 = k1_complfld) \Leftrightarrow ((u1_struct_0 X0 = k2_numbers) \wedge ((u1_algstr_0 X0 = k27_binop_2) \wedge ((u2_algstr_0 X0 = k29_binop_2) \wedge ((k5_struct_0 X0 = k6_complex1) \wedge (k4_struct_0 X0 = k5_complex1)))))) \quad (22)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 k2_numbers))) \Rightarrow \\ & (\forall X1.((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 k2_numbers))) \Rightarrow \\ & (((k3_finseq_1 X0 = k3_finseq_1 X1) \wedge (k1_matrix_1 X0 = k1_matrix_1 X1)) \Rightarrow (k1_matrixc1 (k5_matrix_5 X0 X1) = k5_matrix_5 (k1_matrixc1 X0) (k1_matrixc1 X1)))) \end{aligned}$$