

t51_matrixr2

(TMbv8AaMkMh4JjZbqB3moMceQkGBjjbJrGs)

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Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v1_matrix_1 : \iota \Rightarrow o$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k12_matrixr1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_matrixr1 : \iota \Rightarrow \iota$ be given. Let $k6_rvsum_1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k8_matrixr1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_euclid : \iota \Rightarrow \iota$ be given. Let $k1_matrix_1 : \iota \Rightarrow \iota$ be given. Let $k3_matrixr1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_rvsum_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k1_xboole_0 : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v2_finseq_1 : \iota \Rightarrow o$ be given. Let $v6_struct_0 : \iota \Rightarrow o$ be given. Let $k2_vectsp_1 : \iota$ 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 $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ 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 $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_matrixr1 : \iota \Rightarrow \iota$ be given. Let $k2_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_matrixr1 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_matrix_1 : \iota \Rightarrow \iota$ be given. Let $k3_matrix_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k5_numbers) \Rightarrow (\forall X2.(m2_finseq_1 X2 k1_numbers) \Rightarrow ((k3_finseq_1 \\ & X2 = X0) \Rightarrow ((r1_xxreal_0 X0 k6_numbers) \vee (k12_matrixr1 (k8_matrixr1 \\ & X0 X1) X2 = k5_euclid X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(m2_finseq_1 X0 k1_numbers) \Rightarrow (\forall X1.((v1_matrix_1 \\ X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 k1_numbers))) \Rightarrow (\forall X2. \\ ((v1_matrix_1 X2) \wedge (m2_finseq_1 X2 (k3_finseq_2 k1_numbers))) \Rightarrow \\ (((k3_finseq_1 X1 = k3_finseq_1 X2) \wedge ((k1_matrix_1 X1 = k1_matrix_1 \\ X2) \wedge (k3_finseq_1 X1 = k3_finseq_1 X0))) \Rightarrow ((r1_xreal_0 (k3_finseq_1 \\ X0) k6_numbers) \vee (k12_matrixr1 (k3_matrixr1 X1 X2) X0 = k4_rvsum_1 \\ (k12_matrixr1 X1 X0) (k12_matrixr1 X2 X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(m2_finseq_1 X0 k1_numbers) \Rightarrow (\forall X1.((v1_matrix_1 \\ X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 k1_numbers))) \Rightarrow ((k3_finseq_1 \\ X1 = k3_finseq_1 X0) \Rightarrow (k3_finseq_1 (k12_matrixr1 X1 X0) = k1_matrix_1 \\ X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k5_numbers) \Rightarrow (\forall X2.((v1_matrix_1 X2) \wedge (m2_finseq_1 X2 \\ (k3_finseq_2 k1_numbers))) \Rightarrow (((k3_finseq_1 X2 = X0) \wedge (k1_matrix_1 \\ X2 = X1)) \Rightarrow (k3_matrixr1 (k4_matrixr1 X2) X2 = k8_matrixr1 X0 X1)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m2_finseq_1 X0 k1_numbers) \Rightarrow (\forall X1.(m2_finseq_1 \\ X1 k1_numbers) \Rightarrow (((k3_finseq_1 X0 = k3_finseq_1 X1) \wedge (k4_rvsum_1 \\ X0 X1 = k5_euclid (k3_finseq_1 X0))) \Rightarrow ((X0 = k6_rvsum_1 X1) \wedge (X1 = \\ k6_rvsum_1 X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (7)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\exists X1.(m1_finseq_1 X1 X0) \wedge \\ ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge ((v5_relat_1 X1 \\ X0) \wedge (v1_funct_1 X1) \wedge ((\neg v1_xboole_0 X1) \wedge ((v1_finset_1 X1) \wedge \\ ((v1_finseq_1 X1) \wedge (v2_finseq_1 X1)))))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned}
& (\neg v6_struct_0 \ k2_vectsp_1) \wedge ((v13_algstr_0 \ k2_vectsp_1) \wedge ((\\
& v33_algstr_0 \ k2_vectsp_1) \wedge ((v36_algstr_0 \ k2_vectsp_1) \wedge ((v2_rlvect_1 \\
& k2_vectsp_1) \wedge ((v3_rlvect_1 \ k2_vectsp_1) \wedge ((v4_rlvect_1 \ k2_vectsp_1) \wedge \\
& ((v3_group_1 \ k2_vectsp_1) \wedge ((v5_group_1 \ k2_vectsp_1) \wedge ((v3_vectsp_1 \\
& k2_vectsp_1) \wedge ((v5_vectsp_1 \ k2_vectsp_1) \wedge (v6_vectsp_1 \ k2_vectsp_1))))))))))
\end{aligned} \tag{10}$$

Assume the following.

$$(v36_algstr_0 \ k2_vectsp_1) \wedge (v4_vectsp_1 \ k2_vectsp_1) \tag{11}$$

Assume the following.

$$(\neg v2_struct_0 \ k2_vectsp_1) \wedge (v36_algstr_0 \ k2_vectsp_1) \tag{12}$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (m2_finseq_1 \ X1 \ X0) \Rightarrow ((v1_funct_1 \ X1) \wedge (\\
& (v1_finseq_1 \ X1) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \\
& X0))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (m1_finseq_1 \ X1 \ X0) \Rightarrow ((v1_relat_1 \ X1) \wedge (\\
& (v1_funct_1 \ X1) \wedge (v1_finseq_1 \ X1)))
\end{aligned} \tag{15}$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \tag{16}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((v1_matrix_1 \ X0) \wedge (m1_finseq_1 \ X0 \ (k3_finseq_2 \ k1_numbers))) \Rightarrow \\
& ((v1_matrix_1 \ (k4_matrixr1 \ X0)) \wedge (m2_finseq_1 \ (k4_matrixr1 \ X0) \\
& (k3_finseq_2 \ k1_numbers)))
\end{aligned} \tag{17}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((v1_relat_1 \ X0) \wedge ((v1_funct_1 \ X0) \wedge (v1_finseq_1 \ X0))) \Rightarrow \\
& (m2_subset_1 \ (k3_finseq_1 \ X0) \ k1_numbers \ k5_numbers)
\end{aligned} \tag{18}$$

Assume the following.

$$(v36_algstr_0 \ k2_vectsp_1) \wedge (l6_algstr_0 \ k2_vectsp_1) \tag{19}$$

Assume the following.

$$\forall X0.((v1_matrix_1 X0) \wedge (m1_finseq_1 X0 (k3_finseq_2 (u1_struct_0 k2_vectsp_1)))) \Rightarrow ((v1_matrix_1 (k2_matrixr1 X0)) \wedge (m2_finseq_1 (k2_matrixr1 X0) (k3_finseq_2 k1_numbers))) \quad (20)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \wedge ((v1_matrix_1 X1) \wedge (m1_finseq_1 X1 (k3_finseq_2 (u1_struct_0 X0)))))) \Rightarrow ((v1_matrix_1 (k2_matrix_3 X0 X1)) \wedge (m2_finseq_1 (k2_matrix_3 X0 X1) (k3_finseq_2 (u1_struct_0 X0)))) \quad (21)$$

Assume the following.

$$\forall X0.((v1_matrix_1 X0) \wedge (m1_finseq_1 X0 (k3_finseq_2 k1_numbers))) \Rightarrow ((v1_matrix_1 (k1_matrixr1 X0)) \wedge (m2_finseq_1 (k1_matrixr1 X0) (k3_finseq_2 (u1_struct_0 k2_vectsp_1)))) \quad (22)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v1_finseq_1 X0) \wedge (v1_matrix_1 X0)))) \Rightarrow (m1_subset_1 (k1_matrix_1 X0) k5_numbers) \quad (23)$$

Assume the following.

$$\forall X0. \forall X1. (((v1_matrix_1 X0) \wedge (m1_finseq_1 X0 (k3_finseq_2 k1_numbers))) \wedge (m1_finseq_1 X1 k1_numbers)) \Rightarrow (m2_finseq_1 (k12_matrixr1 X0 X1) k1_numbers) \quad (24)$$

Assume the following.

$$\forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 k1_numbers))) \Rightarrow (k4_matrixr1 X0 = k2_matrixr1 (k2_matrix_3 k2_vectsp_1 (k1_matrixr1 X0))) \quad (25)$$

Assume the following.

$$\forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 (u1_struct_0 k2_vectsp_1)))) \Rightarrow (k2_matrixr1 X0 = X0) \quad (26)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v5_group_1 X0) \wedge (\\
& (v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v4_vectsp_1 \\
& X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 (u1_struct_0 \\
& X0)))) \Rightarrow (\forall X2.((v1_matrix_1 X2) \wedge (m2_finseq_1 X2 (k3_finseq_2 \\
& (u1_struct_0 X0)))) \Rightarrow ((X2 = k2_matrix_3 X0 X1) \Leftrightarrow ((k3_finseq_1 X2 = \\
& k3_finseq_1 X1) \wedge ((k1_matrix_1 X2 = k1_matrix_1 X1) \wedge (\forall X3. \\
& (v7_ordinal1 X3) \Rightarrow (\forall X4.(v7_ordinal1 X4) \Rightarrow ((k4_tarski X3 \\
& X4 \in k2_matrix_1 X1) \Rightarrow (k3_matrix_1 (u1_struct_0 X0) X2 X3 X4 = k4_algstr_0 \\
& X0 (k3_matrix_1 (u1_struct_0 X0) X1 X3 X4))))))))))
\end{aligned} \tag{27}$$

Assume the following.

$$\forall X0.((v1_matrix_1 X0) \wedge (m2_finseq_1 X0 (k3_finseq_2 k1_numbers))) \Rightarrow (k1_matrixr1 X0 = X0) \tag{28}$$

Assume the following.

$$\forall X0. \forall X1. (v1_xboole_0 X0) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_xboole_0 X2)) \tag{29}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \tag{30}$$

Theorem 1

$$\forall X0. (m2_finseq_1 X0 k1_numbers) \Rightarrow (\forall X1. ((v1_matrix_1 X1) \wedge (m2_finseq_1 X1 (k3_finseq_2 k1_numbers))) \Rightarrow ((k3_finseq_1 X0 = k3_finseq_1 X1) \Rightarrow ((r1_xxreal_0 (k3_finseq_1 X0) k6_numbers) \vee (k12_matrixr1 (k4_matrixr1 X1) X0 = k6_rvsum_1 (k12_matrixr1 X1 X0))))))$$