

t10_matrix_7

(TMJvTKUykqfQZHtvrcdmn9nDu9BnooMec6U)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k13_matrix_2 : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $m1_matrix_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_matrix_2 : \iota \Rightarrow \iota$ be given. Let $v4_matrix_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_matrix_2 : \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k1_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_finseq_2 : \iota \Rightarrow \iota$ 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 $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
 & X1 (u1_struct_0 (k13_matrix_2 X0))) \Rightarrow (\forall X2.(m1_subset_1 \\
 & X2 (u1_struct_0 (k13_matrix_2 X0))) \Rightarrow (\forall X3.(m1_matrix_2 \\
 & X3 (k12_matrix_2 X0)) \Rightarrow (\forall X4.(m1_matrix_2 X4 (k12_matrix_2 \\
 & X0)) \Rightarrow (((X1 = X3) \wedge (X2 = X4)) \Rightarrow (k6_algstr_0 (k13_matrix_2 X0) X1 X2 = \\
 & k1_partfun1 (k2_finseq_1 (k11_matrix_2 (k12_matrix_2 X0))) (\\
 & k2_finseq_1 (k11_matrix_2 (k12_matrix_2 X0))) (k2_finseq_1 (\\
 & k11_matrix_2 (k12_matrix_2 X0))) (k2_finseq_1 (k11_matrix_2 \\
 & (k12_matrix_2 X0))) X3 X4))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.(m1_subset_1 X0 (u1_struct_0 (k13_matrix_2 np_2))) \Rightarrow \\
 & ((\exists X1.(m1_matrix_2 X1 (k12_matrix_2 np_2)) \wedge ((X1 = X0) \wedge \\
 & (v4_matrix_2 X1 (k11_matrix_2 (k12_matrix_2 np_2)))))) \Rightarrow (X0 = \\
 & k10_finseq_1 np_2 np_1)
 \end{aligned} \tag{2}$$

Assume the following.

$$k1_finseq_2\ np_2 = k10_finseq_1\ np_1\ np_2 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_relat_1\ X2)\wedge((v1_funct_1 \\ & X2)\wedge(v1_finseq_1\ X2)))\Rightarrow((X2 = k10_finseq_1\ X0\ X1)\Leftrightarrow((k3_finseq_1 \\ & X2 = np_2)\wedge((k1_funct_1\ X2\ np_1 = X0)\wedge(k1_funct_1\ X2\ np_2 = X1)))) \end{aligned} \quad (4)$$

Assume the following.

$$k12_matrix_2\ np_2 = k2_tarski\ (k10_finseq_1\ np_1\ np_2)\ (k10_finseq_1\ np_2\ np_1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1\ X0)\wedge((v1_funct_1\ X0)\wedge(v1_finseq_1\ X0)))\Rightarrow \\ & (((X0 = k10_finseq_1\ np_1\ np_2)\vee(X0 = k10_finseq_1\ np_2\ np_1))\Rightarrow \\ & ((v1_funct_1\ X0)\wedge((v1_funct_2\ X0\ (k2_finseq_1\ np_2)\ (k2_finseq_1 \\ & np_2))\wedge((v3_funct_2\ X0\ (k2_finseq_1\ np_2)\ (k2_finseq_1\ np_2))\wedge \\ & (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k2_finseq_1\ np_2) \\ & (k2_finseq_1\ np_2)))))))) \end{aligned} \quad (6)$$

Assume the following.

$$(k2_finseq_1\ np_1 = k1_tarski\ np_1)\wedge(k2_finseq_1\ np_2 = k2_tarski\ np_1\ np_2) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0)\Rightarrow(\forall X1.(m1_matrix_2\ X1\ (k12_matrix_2 \\ & X0))\Rightarrow((k1_partfun1\ (k2_finseq_1\ (k11_matrix_2\ (k12_matrix_2 \\ & X0)))\ (k2_finseq_1\ (k11_matrix_2\ (k12_matrix_2\ X0)))\ (k2_finseq_1 \\ & (k11_matrix_2\ (k12_matrix_2\ X0)))\ (k2_finseq_1\ (k11_matrix_2 \\ & (k12_matrix_2\ X0)))\ (k2_funct_2\ (k2_finseq_1\ (k11_matrix_2\ (\\ & k12_matrix_2\ X0)))\ X1)\ X1 = k1_finseq_2\ X0)\wedge(k1_partfun1\ (k2_finseq_1 \\ & (k11_matrix_2\ (k12_matrix_2\ X0)))\ (k2_finseq_1\ (k11_matrix_2 \\ & (k12_matrix_2\ X0)))\ (k2_finseq_1\ (k11_matrix_2\ (k12_matrix_2 \\ & X0)))\ (k2_finseq_1\ (k11_matrix_2\ (k12_matrix_2\ X0)))\ X1\ (k2_funct_2 \\ & (k2_finseq_1\ (k11_matrix_2\ (k12_matrix_2\ X0)))\ X1) = k1_finseq_2 \\ & X0))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0)\Rightarrow(\forall X1.(m1_matrix_2\ X1\ (k12_matrix_2 \\ & X0))\Rightarrow((k3_relat_1\ (k1_finseq_2\ X0)\ X1 = X1)\wedge(k3_relat_1\ X1\ (k1_finseq_2 \\ & X0) = X1))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 (k2_finseq_1 np_2) \\ & (k2_finseq_1 np_2)) \wedge ((v3_funct_2 X0 (k2_finseq_1 np_2) (k2_finseq_1 \\ & np_2)) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 (k2_finseq_1 \\ & np_2) (k2_finseq_1 np_2)))))) \Rightarrow ((X0 = k10_finseq_1 np_1 np_2) \vee \\ & (X0 = k10_finseq_1 np_2 np_1)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (k11_matrix_2 (k12_matrix_2 X0) = X0) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.k10_xtuple_0 (k10_finseq_1 X0 X1) = k2_tarski X0 X1 \quad (12)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & (((v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))) \wedge ((v1_funct_1 X5) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X2 X3)))) \Rightarrow (k1_partfun1 X0 X1 X2 X3 X4 X5 = k3_relat_1 X4 X5) \end{aligned} \quad (14)$$

Assume the following.

$$k10_finseq_1 np_1 np_2 \neq k10_finseq_1 np_2 np_1 \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 (k10_finseq_1 X0 X1)) \wedge (v1_funct_1 (k10_finseq_1 X0 X1)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.v1_finseq_1 (k10_finseq_1 X0 X1) \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 X0) \wedge \\ & ((v3_funct_2 X1 X0 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0)))))) \Rightarrow ((v1_funct_1 (k2_funct_2 X0 X1)) \wedge ((v1_funct_2 (k2_funct_2 \\ & X0 X1) X0 X0) \wedge ((v3_funct_2 (k2_funct_2 X0 X1) X0 X0) \wedge (m1_subset_1 \\ & (k2_funct_2 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(X1 = k12_matrix_2\ X0) \Leftrightarrow \\ (\forall X2.(X2 \in X1) \Leftrightarrow ((v1_funct_1\ X2) \wedge ((v1_funct_2\ X2\ (k2_finseq_1 \\ X0)\ (k2_finseq_1\ X0)) \wedge ((v3_funct_2\ X2\ (k2_finseq_1\ X0)\ (k2_finseq_1 \\ X0)) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k2_finseq_1 \\ X0)\ (k2_finseq_1\ X0)))))))))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1\ X0) \wedge ((v1_funct_1\ X0) \wedge (v1_finseq_1\ X0))) \Rightarrow \\ (\forall X1.(m2_subset_1\ X1\ k1_numbers\ k5_numbers) \Rightarrow ((X1 = k3_finseq_1 \\ X0) \Leftrightarrow (k2_finseq_1\ X1 = k9_xtuple_0\ X0))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(X2 = k2_tarski\ X0\ X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 = X0) \vee (X3 = X1))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_relat_1\ X0) \Rightarrow ((v1_finseq_1\ X0) \Leftrightarrow (\exists X1.(v7_ordinal1 \\ X1) \wedge (k9_xtuple_0\ X0 = k2_finseq_1\ X1))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.((v1_funct_1\ X1) \wedge ((\\ v1_funct_2\ X1\ (k2_finseq_1\ X0)\ (k2_finseq_1\ X0)) \wedge ((v3_funct_2 \\ X1\ (k2_finseq_1\ X0)\ (k2_finseq_1\ X0)) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1 \\ (k2_zfmisc_1\ (k2_finseq_1\ X0)\ (k2_finseq_1\ X0)))))) \Rightarrow ((v4_matrix_2 \\ X1\ X0) \Leftrightarrow (\exists X2.(v7_ordinal1\ X2) \wedge (\exists X3.(v7_ordinal1 \\ X3) \wedge ((X2 \in k9_xtuple_0\ X1) \wedge ((X3 \in k9_xtuple_0\ X1) \wedge ((X2 \neq X3) \wedge ((\\ k1_funct_1\ X1\ X2 = X3) \wedge ((k1_funct_1\ X1\ X3 = X2) \wedge (\forall X4.(v7_ordinal1 \\ X4) \Rightarrow ((X4 \in k9_xtuple_0\ X1) \Rightarrow ((X4 = X2) \vee ((X4 = X3) \vee (k1_funct_1\ X1 \\ X4 = X4)))))))))))))) \end{aligned} \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.k2_tarski\ X0\ X1 = k2_tarski\ X1\ X0 \quad (24)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_subset_1\ X0\ (u1_struct_0\ (k13_matrix_2\ np_2))) \Rightarrow \\ (\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ (k13_matrix_2\ np_2))) \Rightarrow \\ (\neg(\exists X2.(m1_matrix_2\ X2\ (k12_matrix_2\ np_2)) \wedge ((X2 = X0) \wedge \\ (v4_matrix_2\ X2\ (k11_matrix_2\ (k12_matrix_2\ np_2)))))) \wedge ((\exists X2. \\ (m1_matrix_2\ X2\ (k12_matrix_2\ np_2)) \wedge ((X2 = X1) \wedge (v4_matrix_2 \\ X2\ (k11_matrix_2\ (k12_matrix_2\ np_2)))))) \wedge (k6_algstr_0\ (k13_matrix_2 \\ np_2)\ X0\ X1 \neq k10_finseq_1\ np_1\ np_2))) \end{aligned}$$