

t6_msualg_3

(TMU4yJjQjuicwVvTfAPj8pCqmrQ2eHGV09)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $k4_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Let $k13_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l2_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $l5_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((\\ & v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X0 \in k4_card_3 X1) \Leftrightarrow ((k9_xtuple_0 \\ & X0 = k9_xtuple_0 X1) \wedge (\forall X2.(X2 \in k9_xtuple_0 X1) \Rightarrow (k1_funct_1 \\ & X0 X2 \in k1_funct_1 X1 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ & X0))) \Rightarrow (\forall X1.(l3_msualg_1 X1 X0) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u4_struct_0 X0)) \Rightarrow ((k3_msualg_1 X0 X2 X1 = k4_card_3 (k3_relat_1 \\ & (k1_msualg_1 X0 X2) (u3_msualg_1 X0 X1))) \wedge ((k9_xtuple_0 (k3_relat_1 \\ & (k1_msualg_1 X0 X2) (u3_msualg_1 X0 X1)) = k9_xtuple_0 (k1_msualg_1 \\ & X0 X2)) \wedge (k4_msualg_1 X0 X2 X1 = k1_funct_1 (u3_msualg_1 X0 X1) (k2_msualg_1 \\ & X0 X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_2 X1 X0)\Rightarrow(\forall X2.(m2_finseq_2 X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \quad (3)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 X0)))\Rightarrow(k4_finseq_1 X0 = k9_xtuple_0 X0) \quad (4)$$

Assume the following.

$$\forall X0.k3_finseq_2 X0 = k13_finseq_1 X0 \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0)\wedge(v1_funct_1 X0))\wedge((v1_relat_1 X1)\wedge(v1_funct_1 X1)))\Rightarrow((v1_relat_1 (k3_relat_1 X0 X1))\wedge(v1_funct_1 (k3_relat_1 X0 X1))) \quad (6)$$

Assume the following.

$$\forall X0.v4_funct_1 (k13_finseq_1 X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((l1_struct_0 X0)\wedge(l2_msualg_1 X1 X0))\Rightarrow(((v1_relat_1 (u3_msualg_1 X0 X1))\wedge((v4_relat_1 (u3_msualg_1 X0 X1) (u1_struct_0 X0))\wedge((v1_funct_1 (u3_msualg_1 X0 X1))\wedge(v1_partfun1 (u3_msualg_1 X0 X1) (u1_struct_0 X0)))))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_2 X1 X0)\Rightarrow(\forall X2.(m2_finseq_2 X2 X0 X1)\Rightarrow(m2_finseq_1 X2 X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0)\Rightarrow((v1_funct_1 X1)\wedge((v1_finseq_1 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers X0)))))) \quad (10)$$

Assume the following.

$$\forall X0.(l5_struct_0 X0)\Rightarrow(l1_struct_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_msualg_1 X0))\Rightarrow(\forall X1.(l3_msualg_1 X1 X0)\Rightarrow(l2_msualg_1 X1 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l1_msualg_1 X0) \Rightarrow (l5_struct_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k3_relat_1 X0 X1) \quad (14)$$

Assume the following.

$$\forall X0.m1_finseq_2 (k3_finseq_2 X0) X0 \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge (\neg v11_struct_0 X0) \wedge \\ & (l1_msualg_1 X0)) \wedge (m1_subset_1 X1 (u4_struct_0 X0))) \Rightarrow (m2_finseq_2 \\ & (k1_msualg_1 X0 X1) (u1_struct_0 X0) (k3_finseq_2 (u1_struct_0 \\ & X0))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.(v4_funct_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_relat_1 X1) \wedge (v1_funct_1 X1)) \quad (17)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ & X0)) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (\forall X2. \\ & (l3_msualg_1 X2 X0) \Rightarrow (\forall X3.((v1_relat_1 X3) \wedge (v1_funct_1 \\ & X3)) \Rightarrow ((X3 \in k3_msualg_1 X0 X1 X2) \Rightarrow ((k9_xtuple_0 X3 = k4_finseq_1 \\ & (k1_msualg_1 X0 X1)) \wedge (\forall X4.(X4 \in k9_xtuple_0 (k3_relat_1 \\ & (k1_msualg_1 X0 X1) (u3_msualg_1 X0 X2))) \Rightarrow (k1_funct_1 X3 X4 \in k1_funct_1 \\ & (k3_relat_1 (k1_msualg_1 X0 X1) (u3_msualg_1 X0 X2)) X4)))))) \end{aligned}$$