

t3_msafree1

(TMQenibYjRkxe7CmJRcSr6WYuc4eK1S518z)

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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 $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_msafree : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k2_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_card_3 : \iota \Rightarrow \iota$ be given. Let $k3_msafree : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_msafree : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Let $k13_finseq_1 : \iota \Rightarrow \iota$ be given. Let $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& \quad X0))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 \\
& \quad X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 X0)))))) \Rightarrow \\
& \quad (\forall X2.(m1_subset_1 X2 (u4_struct_0 X0)) \Rightarrow (\forall X3.(m2_finseq_2 \\
& \quad X3 (k2_xboole_0 (k2_zfmisc_1 (u4_struct_0 X0) (k1_tarski (u1_struct_0 \\
& \quad X0))) (k3_card_3 (k3_msafree (u1_struct_0 X0) X1))) (k3_finseq_2 \\
& \quad (k2_xboole_0 (k2_zfmisc_1 (u4_struct_0 X0) (k1_tarski (u1_struct_0 \\
& \quad X0))) (k3_card_3 (k3_msafree (u1_struct_0 X0) X1)))))) \Rightarrow ((k4_tarski \\
& \quad (k4_tarski X2 (u1_struct_0 X0)) X3 \in k4_msafree X0 X1) \Leftrightarrow ((k3_finseq_1 \\
& \quad X3 = k3_finseq_1 (k1_msualg_1 X0 X2)) \wedge (\forall X4.(X4 \in k4_finseq_1 \\
& \quad X3) \Rightarrow (((k1_funct_1 X3 X4 \in k2_zfmisc_1 (u4_struct_0 X0) (k1_tarski \\
& \quad (u1_struct_0 X0))) \Rightarrow (\forall X5.(m1_subset_1 X5 (u4_struct_0 \\
& \quad X0)) \Rightarrow ((k4_tarski X5 (u1_struct_0 X0) = k1_funct_1 X3 X4) \Rightarrow (k2_msualg_1 \\
& \quad X0 X5 = k1_funct_1 (k1_msualg_1 X0 X2) X4)))))) \wedge ((k1_funct_1 X3 X4 \in \\
& \quad k3_card_3 (k3_msafree (u1_struct_0 X0) X1)) \Rightarrow (k1_funct_1 X3 X4 \in \\
& \quad k2_msafree (u1_struct_0 X0) X1 (k1_funct_1 (k1_msualg_1 X0 X2) \\
& \quad X4)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ & X0))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 \\ & X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 X0)))))) \Rightarrow \\ & (\forall X2. \forall X3. (k4_tarski X2 X3 \in k4_msafree X0 X1) \Rightarrow ((X2 \in \\ & k2_zfmisc_1 (u4_struct_0 X0) (k1_tarski (u1_struct_0 X0))) \wedge \\ & X3 \in k13_finseq_1 (k2_xboole_0 (k2_zfmisc_1 (u4_struct_0 X0) (\\ & k1_tarski (u1_struct_0 X0))) (k3_card_3 (k3_msafree (u1_struct_0 \\ & X0) X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1_finseq_2 X1 X0) \Rightarrow (\forall X2. (m2_finseq_2 \\ X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \quad (4)$$

Assume the following.

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

Assume the following.

$$\forall X0. m1_finseq_2 (k3_finseq_2 X0) X0 \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ & X0))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 \\ & X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 X0)))))) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 (u4_struct_0 X0)) \Rightarrow (\forall X3. ((\\ & v1_relat_1 X3) \wedge ((v1_funct_1 X3) \wedge (v1_finseq_1 X3))) \Rightarrow ((k4_tarski \\ & (k4_tarski X2 (u1_struct_0 X0) X3 \in k4_msafree X0 X1) \Rightarrow ((k3_finseq_1 \\ & X3 = k3_finseq_1 (k1_msualg_1 X0 X2)) \wedge (\forall X4. (X4 \in k4_finseq_1 \\ & X3) \Rightarrow ((k1_funct_1 X3 X4 \in k2_zfmisc_1 (u4_struct_0 X0) (k1_tarski \\ & (u1_struct_0 X0))) \Rightarrow (\forall X5. (m1_subset_1 X5 (u4_struct_0 \\ & X0)) \Rightarrow ((k4_tarski X5 (u1_struct_0 X0) = k1_funct_1 X3 X4) \Rightarrow (k2_msualg_1 \\ & X0 X5 = k1_funct_1 (k1_msualg_1 X0 X2) X4)))))) \wedge ((k1_funct_1 X3 X4 \in \\ & k3_card_3 (k3_msafree (u1_struct_0 X0) X1)) \Rightarrow (k1_funct_1 X3 X4 \in \\ & k2_msafree (u1_struct_0 X0) X1 (k1_funct_1 (k1_msualg_1 X0 X2) \\ & X4)))))) \end{aligned}$$