

l8_msaterm

(TMc6ZKfJtgTBieEvTVtgTGfAYDxRDTDJmy8)

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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 $v2_relat_1 : \iota \Rightarrow o$ 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 $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_msafree : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_dtconstr : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_card_3 : \iota \Rightarrow \iota$ be given. Let $k3_msafree : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_lang1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v2_dtconstr : \iota \Rightarrow o$ be given. Let $l1_lang1 : \iota \Rightarrow o$ be given. Let $v1_dtconstr : \iota \Rightarrow o$ be given. Let $v3_dtconstr : \iota \Rightarrow o$ be given. Let $v1_lang1 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
 & \quad X0))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 \\
 & \quad X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 X0)))))) \Rightarrow \\
 & ((r1_tarski (k2_lang1 (k5_msafree X0 X1)) (k2_zfmisc_1 (u4_struct_0 \\
 & \quad X0) (k1_tarski (u1_struct_0 X0)))) \wedge ((r1_tarski (k3_card_3 (k3_msafree \\
 & \quad (u1_struct_0 X0) X1)) (k1_lang1 (k5_msafree X0 X1))) \wedge ((v2_relat_1 \\
 & \quad X1) \Rightarrow ((k2_lang1 (k5_msafree X0 X1) = k2_zfmisc_1 (u4_struct_0 X0) \\
 & \quad (k1_tarski (u1_struct_0 X0))) \wedge (k1_lang1 (k5_msafree X0 X1) = k3_card_3 \\
 & \quad (k3_msafree (u1_struct_0 X0) X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v2_dtconstr X0)\wedge(l1_lang1 X0)))\Rightarrow(k7_dtconstr X0 = k2_lang1 X0) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge(l1_msualg_1 X0)))\wedge((v1_relat_1 X1)\wedge((v2_relat_1 X1)\wedge((v4_relat_1 X1 (u1_struct_0 X0))\wedge((v1_funct_1 X1)\wedge(v1_partfun1 X1 (u1_struct_0 X0)))))))\Rightarrow((v1_dtconstr (k5_msafree X0 X1))\wedge((v2_dtconstr (k5_msafree X0 X1))\wedge(v3_dtconstr (k5_msafree X0 X1)))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge(l1_msualg_1 X0)))\wedge((v1_relat_1 X1)\wedge((v4_relat_1 X1 (u1_struct_0 X0))\wedge((v1_funct_1 X1)\wedge(v1_partfun1 X1 (u1_struct_0 X0)))))))\Rightarrow((\neg v2_struct_0 (k5_msafree X0 X1))\wedge(v1_lang1 (k5_msafree X0 X1))) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u1_struct_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l1_lang1 X0)\Rightarrow(l1_struct_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v2_dtconstr X0)\wedge(l1_lang1 X0)))\Rightarrow((\neg v1_xboole_0 (k7_dtconstr X0))\wedge(m1_subset_1 (k7_dtconstr X0) (k1_zfmisc_1 (u1_struct_0 X0)))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge(l1_msualg_1 X0)))\wedge((v1_relat_1 X1)\wedge((v4_relat_1 X1 (u1_struct_0 X0))\wedge((v1_funct_1 X1)\wedge(v1_partfun1 X1 (u1_struct_0 X0)))))))\Rightarrow(l1_lang1 (k5_msafree X0 X1)) \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ & X0)) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge (v2_relat_1 X1) \wedge (v4_relat_1 \\ & X1 (u1_struct_0 X0)) \wedge (v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 \\ & X0)))) \Rightarrow (\forall X2.(m2_subset_1 X2 (u1_struct_0 (k5_msafree \\ & X0 X1)) (k7_dtconstr (k5_msafree X0 X1))) \Leftrightarrow (X2 \in k2_zfmisc_1 (u4_struct_0 \\ & X0) (k1_tarski (u1_struct_0 X0)))) \end{aligned}$$