t2_msafree1 (TMZqy-WJsfq9Trphv1S5GhHRu5M2PDmqMTPv)

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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 $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_msafree : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k13\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_card\_3 : \iota \Rightarrow \iota$ be given. Let $k3\_msafree : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ 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 $k3\_finseq\_2 : \iota \Rightarrow \iota$ 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 $k2\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_msafree : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(k4\_tarski\ X0\ X1 \in k2\_zfmisc\_1\ X2\ X3) \Leftrightarrow ((X0 \in X2) \wedge (X1 \in X3)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\neg(X0 \in X1) \wedge ((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2)) \wedge (v1\_xboole\_0\ X2)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1\ X0\ X1) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2\ X1\ X0)\Rightarrow(\forall X2.(m2\_finseq\_2\ X2\ X0\ X1)\Leftrightarrow(m1\_subset\_1\ X2\ X1)) \tag{6}$$

Assume the following.

$$\forall X0.k3\_finseq\_2\ X0 = k13\_finseq\_1\ X0 \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0)))\wedge((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ (u1\_struct\_0\ X0))\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ (u1\_struct\_0\ X0)))))\Rightarrow(m1\_subset\_1\ (k4\_msafree\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_xboole\_0\ (k2\_zfmisc\_1\ (u4\_struct\_0\ X0)\ (k1\_tarski\ (u1\_struct\_0\ X0)))\ (k3\_card\_3\ (k3\_msafree\ (u1\_struct\_0\ X0)\ X1)))\ (k3\_finseq\_2\ (k2\_xboole\_0\ (k2\_zfmisc\_1\ (u4\_struct\_0\ X0)\ (k1\_tarski\ (u1\_struct\_0\ X0)))\ (k3\_card\_3\ (k3\_msafree\ (u1\_struct\_0\ X0)\ X1))))))) \tag{8}$$

Assume the following.

$$\forall X0.m1\_finseq\_2\ (k3\_finseq\_2\ X0)\ X0 \tag{9}$$

Assume the following.

$$\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\ (k1\_zfmisc\_1\ (k2\_zfmisc\_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)))\ (k3\_finseq\_2\ (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)))))))\Rightarrow((X2 = k4\_msafree\ X0\ X1)\Leftrightarrow(\forall X3.(m1\_subset\_1\ X3\ (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))))\Rightarrow(\forall X4.(m2\_finseq\_2\ X4\ (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)))\ (k3\_finseq\_2\ (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)))))\Rightarrow((k4\_tarski\ X3\ X4 \in X2)\Leftrightarrow((X3 \in k2\_zfmisc\_1\ (u4\_struct\_0\ X0)\ (k1\_tarski\ (u1\_struct\_0\ X0)))\wedge(\forall X5.(m1\_subset\_1\ X5\ (u4\_struct\_0\ X0))\Rightarrow((k4\_tarski\ X5\ (u1\_struct\_0\ X0) = X3)\Rightarrow((k3\_finseq\_1\ X4 = k3\_finseq\_1\ (k1\_msualg\_1\ X0\ X5))\wedge(\forall X6.(X6 \in k4\_finseq\_1\ X4)\Rightarrow(((k1\_funct\_1\ X4\ X6 \in k2\_zfmisc\_1\ (u4\_struct\_0\ X0)\ (k1\_tarski\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X7.(m1\_subset\_1\ X7\ (u4\_struct\_0\ X0))\Rightarrow((k4\_tarski\ X7\ (u1\_struct\_0\ X0) = k1\_funct\_1\ X4\ X6)\Rightarrow(k2\_msualg\_1\ X0\ X7 = k1\_funct\_1\ (k1\_msualg\_1\ X0\ X5)\ X6))))\wedge((k1\_funct\_1\ X4\ X6 \in k3\_card\_3\ (k3\_msafree\ (u1\_struct\_0\ X0)\ X1))\Rightarrow(k1\_funct\_1\ X4\ X6 \in k2\_msafree\ (u1\_struct\_0\ X0)\ X1\ (k1\_funct\_1\ (k1\_msualg\_1\ X0\ X5)\ X6)))))))))))))))) \tag{10}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0)))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ (u1\_struct\_0\ X0))\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ (u1\_struct\_0\ X0)))))\Rightarrow(\forall X2.\forall X3.(k4\_tarski\ X2\ X3 \in k4\_msafree\ X0\ X1)\Rightarrow((X2 \in k2\_zfmisc\_1\ (u4\_struct\_0\ X0)\ (k1\_tarski\ (u1\_struct\_0\ X0)))\wedge(X3 \in k13\_finseq\_1\ (k2\_xboole\_0\ (k2\_zfmisc\_1\ (u4\_struct\_0\ X0)\ (k1\_tarski\ (u1\_struct\_0\ X0)))\ (k3\_card\_3\ (k3\_msafree\ (u1\_struct\_0\ X0)\ X1)))))))$$