

# t18\_msualg\_9 (TMUZDSYM- LXd4JiyqCDY42vr9c1xJ3Cp7yBZ)

October 27, 2020

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  $v4\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 \\ & X0))) \Rightarrow (\forall X1.(l3\_msualg\_1 X1 X0) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u4\_struct\_0 X0)) \Rightarrow ((k3\_msualg\_1 X0 X2 X1 = k4\_card\_3 (k3\_relat\_1 \\ & (k1\_msualg\_1 X0 X2) (u3\_msualg\_1 X0 X1))) \wedge ((k9\_xtuple\_0 (k3\_relat\_1 \\ & (k1\_msualg\_1 X0 X2) (u3\_msualg\_1 X0 X1)) = k9\_xtuple\_0 (k1\_msualg\_1 \\ & X0 X2)) \wedge (k4\_msualg\_1 X0 X2 X1 = k1\_funct\_1 (u3\_msualg\_1 X0 X1) (k2\_msualg\_1 \\ & X0 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 \\ & X0) \wedge (l1\_msualg\_1 X0))) \wedge ((m1\_subset\_1 X1 (u4\_struct\_0 X0)) \wedge \\ & l3\_msualg\_1 X2 X0)) \Rightarrow ((v1\_funct\_1 (k5\_msualg\_1 X0 X1 X2)) \wedge ((v1\_funct\_2 \\ & (k5\_msualg\_1 X0 X1 X2) (k3\_msualg\_1 X0 X1 X2) (k4\_msualg\_1 X0 X1 X2)) \wedge \\ & (m1\_subset\_1 (k5\_msualg\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k3\_msualg\_1 X0 X1 X2) (k4\_msualg\_1 X0 X1 X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge(\neg v11\_struct\_0 X0)\wedge(l1\_msualg\_1 X0))\wedge((m1\_subset\_1 X1 (u4\_struct\_0 X0))\wedge(l3\_msualg\_1 X2 X0)))\Rightarrow(m1\_subset\_1 (k4\_msualg\_1 X0 X1 X2) (k10\_xtuple\_0 (u3\_msualg\_1 X0 X2))) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge(\neg v11\_struct\_0 X0)\wedge(l1\_msualg\_1 X0))\wedge((m1\_subset\_1 X1 (u4\_struct\_0 X0))\wedge(l3\_msualg\_1 X2 X0)))\Rightarrow(m1\_subset\_1 (k3\_msualg\_1 X0 X1 X2) (k10\_xtuple\_0 (k6\_finseq\_2 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X2)))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\wedge(m1\_subset\_1 X3 X0)))\Rightarrow(m1\_subset\_1 (k3\_funct\_2 X0 X1 X2 X3) X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\Rightarrow((m1\_subset\_1 X1 X0)\Leftrightarrow(X1 \in X0)))\wedge((v1\_xboole\_0 X0)\Rightarrow((m1\_subset\_1 X1 X0)\Leftrightarrow(v1\_xboole\_0 X1))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(l1\_msualg\_1 X0))\wedge((v4\_msualg\_1 X1 X0)\wedge(l3\_msualg\_1 X1 X0)))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (k10\_xtuple\_0 (k6\_finseq\_2 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1))))\Rightarrow(\neg v1\_xboole\_0 X2)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(l1\_msualg\_1 X0))\wedge((v4\_msualg\_1 X1 X0)\wedge(l3\_msualg\_1 X1 X0)))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (k10\_xtuple\_0 (u3\_msualg\_1 X0 X1)))\Rightarrow(\neg v1\_xboole\_0 X2)) \quad (8)$$

### Theorem 1

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(\neg v11\_struct\_0 X0)\wedge(l1\_msualg\_1 X0))\Rightarrow(\forall X1.((v4\_msualg\_1 X1 X0)\wedge(l3\_msualg\_1 X1 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u4\_struct\_0 X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (k3\_msualg\_1 X0 X2 X1))\Rightarrow(k3\_funct\_2 (k3\_msualg\_1 X0 X2 X1) (k4\_msualg\_1 X0 X2 X1) (k5\_msualg\_1 X0 X2 X1) X3 \in k1\_funct\_1 (u3\_msualg\_1 X0 X1) (k2\_msualg\_1 X0 X2))))))$$