t49_msualg_6 (TMN9BEfpSZk9yauLJYYmdkVrWQ6UomcwMkR)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ 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 $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_msualg\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_msualg\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_msualg\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_relat\_2 : \iota \Rightarrow o$ be given. Let $v8\_relat\_2 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))) \Rightarrow ((\forall X3.\forall X4.((X3 \in X0) \wedge (X4 \in X0)) \Rightarrow ((k4\_tarski\ X3\ X4 \in X2) \Leftrightarrow (r2\_rewrite1\ X1\ X3\ X4))) \Rightarrow ((v1\_partfun1\ X2\ X0) \wedge ((v3\_relat\_2\ X2) \wedge (v8\_relat\_2\ X2)))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1\ X0\ X1) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0\ X0) \wedge (((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ X0) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_partfun1\ X1\ X0)))) \wedge (((v1\_relat\_1\ X2) \wedge ((v4\_relat\_1\ X2\ X0) \wedge ((v1\_funct\_1\ X2) \wedge (v1\_partfun1\ X2\ X0)))) \wedge ((m1\_msualg\_4\ X3\ X0\ X1\ X2) \wedge (m1\_subset\_1\ X4\ X0))))) \Rightarrow (k1\_msualg\_4\ X0\ X1\ X2\ X3\ X4 = k1\_funct\_1\ X3\ X4) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ X0))))\wedge(((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge(v1\_partfun1\ X2\ X0))))\wedge((m1\_msualg\_4\ X3\ X0\ X1\ X2)\wedge(m1\_subset\_1\ X4\ X0)))))\Rightarrow(m1\_subset\_1\ (k1\_msualg\_4\ X0\ X1\ X2\ X3\ X4)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_funct\_1\ X1\ X4)\ (k1\_funct\_1\ X2\ X4))))\tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ X0))))\Rightarrow(\forall X2.(m1\_msualg\_4\ X2\ X0\ X1\ X1)\Rightarrow((v1\_msualg\_4\ X2\ X0\ X1)\Leftrightarrow(\forall X3.\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_funct\_1\ X1\ X3)\ (k1\_funct\_1\ X1\ X3))))\Rightarrow(((X3\in X0)\wedge(k1\_funct\_1\ X2\ X3=X4))\Rightarrow((v3\_relat\_2\ X4)\wedge((v8\_relat\_2\ X4)\wedge((v1\_partfun1\ X4\ (k1\_funct\_1\ X1\ X3))\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_funct\_1\ X1\ X3)\ (k1\_funct\_1\ X1\ X3))))))))))\tag{5}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v2\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ X0)))))\Rightarrow(\forall X2.(m1\_msualg\_4\ X2\ X0\ X1\ X1)\Rightarrow(\forall X3.(m1\_msualg\_4\ X3\ X0\ X1\ X1)\Rightarrow((\forall X4.(m1\_subset\_1\ X4\ X0)\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (k1\_funct\_1\ X1\ X4))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (k1\_funct\_1\ X1\ X4))\Rightarrow((k4\_tarski\ X5\ X6\in k1\_msualg\_4\ X0\ X1\ X1\ X3\ X4)\Leftrightarrow(r2\_rewrite1\ (k1\_msualg\_4\ X0\ X1\ X1\ X2\ X4)\ X5\ X6)))))\Rightarrow(v1\_msualg\_4\ X3\ X0\ X1)))))$$