t19_msuhom_1 (TMQYDDMaRhX-EwfxL85TBY4yjJDMD8mf8VFS)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_unialg\_1 : \iota \Rightarrow o$ be given. Let $v3\_unialg\_1 : \iota \Rightarrow o$ be given. Let $v4\_unialg\_1 : \iota \Rightarrow o$ be given. Let $l1\_unialg\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_alg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3\_msualg\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_msualg\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_msualg\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_msuhom\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_msuhom\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $r1\_alg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_msualg\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_unialg\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_xcmplx\_0 : \iota \Rightarrow o$ be given. Let $v1\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Let $v3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7\_struct\_0 : \iota \Rightarrow o$ be given. Let $v11\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np\_\_1 : \iota$ be given. Let $v1\_msualg\_1 : \iota \Rightarrow o$ be given. Let $v5\_msualg\_1 : \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l5\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_msualg\_1 : \iota \Rightarrow o$ be given. Let $l3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_msualg\_3 : \iota \Rightarrow o$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $v2\_funct\_1 : \iota \Rightarrow o$ be given. Let $k5\_numbers : \iota$ be given. Let $k4\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_unialg\_1 : \iota \Rightarrow \iota$ be given. Let $m5\_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_unialg\_2 : \iota \Rightarrow \iota$ be given. Let $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_finseq\_2 : \iota \Rightarrow \iota$ be given. Let $k4\_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.k1\_funct\_1\ (k16\_funcop\_1\ X0\ X1)\ X0 = X1 \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_unialg\_1\ X0)\wedge((v3\_unialg\_1\ X0)\wedge((v4\_unialg\_1\ X0)\wedge(l1\_unialg\_1\ X0)))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_unialg\_1\ X1)\wedge((v3\_unialg\_1\ X1)\wedge((v4\_unialg\_1\ X1)\wedge(l1\_unialg\_1\ X1)))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))\Rightarrow((r1\_alg\_1\ X0\ X1\ X2)\Rightarrow(r1\_msualg\_3\ (k6\_msualg\_1\ X0)\ (k9\_msualg\_1\ X0)\ (k1\_msuhom\_1\ (k6\_msualg\_1\ X0)\ (k6\_msualg\_1\ X1)\ (k9\_msualg\_1\ X1))\ (k2\_msuhom\_1\ X0\ X1\ X2)))))) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_unialg\_1\ X0)\wedge((v3\_unialg\_1\ X0)\wedge((v4\_unialg\_1\ X0)\wedge(l1\_unialg\_1\ X0)))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_unialg\_1\ X1)\wedge((v3\_unialg\_1\ X1)\wedge((v4\_unialg\_1\ X1)\wedge(l1\_unialg\_1\ X1)))))\Rightarrow((r1\_unialg\_2\ X0\ X1)\Rightarrow(k6\_msualg\_1\ X0 = k6\_msualg\_1\ X1))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.k7\_funcop\_1\ X0\ X1 = k2\_funcop\_1\ X0\ X1 \tag{5}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow(k1\_relset\_1\ X0\ X1 = k9\_xtuple\_0\ X1) \tag{7}$$

Assume the following.

$$\exists X0.(v1\_xboole\_0\ X0)\wedge((v1\_xcmplx\_0\ X0)\wedge((v1\_xxreal\_0\ X0)\wedge(v1\_xreal\_0\ X0))) \tag{8}$$

Assume the following.

$$\exists X0.v1\_xboole\_0\ X0 \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1\ (k2\_zfmisc\_1\ X0\ X1) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_unialg\_1\ X0)\wedge((v3\_unialg\_1\ X0)\wedge((v4\_unialg\_1\ X0)\wedge(l1\_unialg\_1\ X0)))))\Rightarrow((v3\_msualg\_1\ (k9\_msualg\_1\ X0)\ (k6\_msualg\_1\ X0))\wedge(v4\_msualg\_1\ (k9\_msualg\_1\ X0)\ (k6\_msualg\_1\ X0))) \tag{11}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_unialg\_1\ X0)\wedge((v3\_unialg\_1\ X0)\wedge((v4\_unialg\_1\ X0)\wedge(l1\_unialg\_1\ X0)))))\Rightarrow((v7\_struct\_0\ (k6\_msualg\_1\ X0))\wedge((\neg v11\_struct\_0\ (k6\_msualg\_1\ X0))\wedge((v13\_struct\_0\ (k6\_msualg\_1\ X0)\ np\_\_1)\wedge((v1\_msualg\_1\ (k6\_msualg\_1\ X0))\wedge(v5\_msualg\_1\ (k6\_msualg\_1\ X0))))))) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ (k2\_funcop\_1\ X0\ X1))\wedge((v4\_relat\_1\ (k2\_funcop\_1\ X0\ X1)\ X0)\wedge((v1\_funct\_1\ (k2\_funcop\_1\ X0\ X1))\wedge(v1\_partfun1\ (k2\_funcop\_1\ X0\ X1)\ X0))) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ (k2\_funcop\_1\ X0\ X1))\wedge(v1\_funct\_1\ (k2\_funcop\_1\ X0\ X1)) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.v4\_relat\_1\ (k2\_funcop\_1\ X0\ X1)\ X0 \tag{15}$$

Assume the following.

$$\forall X0.(l5\_struct\_0\ X0)\Rightarrow(l1\_struct\_0\ X0) \tag{16}$$

Assume the following.

$$\forall X0.(l1\_msualg\_1\ X0)\Rightarrow(l5\_struct\_0\ X0) \tag{17}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_unialg\_1\ X0)\wedge((v3\_unialg\_1\ X0)\wedge((v4\_unialg\_1\ X0)\wedge(l1\_unialg\_1\ X0)))))\Rightarrow((v3\_msualg\_1\ (k9\_msualg\_1\ X0)\ (k6\_msualg\_1\ X0))\wedge(l3\_msualg\_1\ (k9\_msualg\_1\ X0)\ (k6\_msualg\_1\ X0))) \tag{18}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_unialg\_1\ X0)\wedge((v3\_unialg\_1\ X0)\wedge((v4\_unialg\_1\ X0)\wedge(l1\_unialg\_1\ X0)))))\Rightarrow((v7\_struct\_0\ (k6\_msualg\_1\ X0))\wedge((\neg v11\_struct\_0\ (k6\_msualg\_1\ X0))\wedge((v1\_msualg\_1\ (k6\_msualg\_1\ X0))\wedge((v5\_msualg\_1\ (k6\_msualg\_1\ X0))\wedge(l1\_msualg\_1\ (k6\_msualg\_1\ X0))))))) \tag{19}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge((v2\_unialg\_1\ X0)\wedge((v3\_unialg\_1\ X0)\wedge((v4\_unialg\_1\ X0)\wedge(l1\_unialg\_1\ X0)))))\wedge(((\neg v2\_struct\_0\ X1)\wedge((v2\_unialg\_1\ X1)\wedge((v3\_unialg\_1\ X1)\wedge((v4\_unialg\_1\ X1)\wedge(l1\_unialg\_1\ X1)))))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))))\Rightarrow(m2\_pboole\ (k2\_msuhom\_1\ X0\ X1\ X2)\ (u1\_struct\_0\ (k6\_msualg\_1\ X0))\ (u3\_msualg\_1\ (k6\_msualg\_1\ X0)\ (k9\_msualg\_1\ X0))\ (u3\_msualg\_1\ (k6\_msualg\_1\ X0)\ (k1\_msuhom\_1\ (k6\_msualg\_1\ X0)\ (k6\_msualg\_1\ X1)\ (k9\_msualg\_1\ X1))))) \tag{20}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v1\_msualg\_1\ X0)\wedge(l1\_msualg\_1\ X0))))\wedge(((\neg v2\_struct\_0\ X1)\wedge((\neg v11\_struct\_0\ X1)\wedge((v1\_msualg\_1\ X1)\wedge(l1\_msualg\_1\ X1))))\wedge((v3\_msualg\_1\ X2\ X1)\wedge((v4\_msualg\_1\ X2\ X1)\wedge(l3\_msualg\_1\ X2\ X1)))))\Rightarrow((v3\_msualg\_1\ (k1\_msuhom\_1\ X0\ X1\ X2)\ X0)\wedge((v4\_msualg\_1\ (k1\_msuhom\_1\ X0\ X1\ X2)\ X0)\wedge(l3\_msualg\_1\ (k1\_msuhom\_1\ X0\ X1\ X2)\ X0))) \tag{21}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0)))\Rightarrow(\forall X1.(l3\_msualg\_1\ X1\ X0)\Rightarrow(\forall X2.(l3\_msualg\_1\ X2\ X0)\Rightarrow(\forall X3.(m2\_pboole\ X3\ (u1\_struct\_0\ X0)\ (u3\_msualg\_1\ X0\ X1)\ (u3\_msualg\_1\ X0\ X2))\Rightarrow((r3\_msualg\_3\ X0\ X1\ X2\ X3)\Leftrightarrow((r1\_msualg\_3\ X0\ X1\ X2\ X3)\wedge(v1\_msualg\_3\ X3)))))) \tag{22}$$

Assume the following.

$$\forall X0.\forall X1.k16\_funcop\_1\ X0\ X1 = k7\_funcop\_1\ (k1\_tarski\ X0)\ X1 \tag{23}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_unialg\_1\ X0)\wedge((v3\_unialg\_1\ X0)\wedge((v4\_unialg\_1\ X0)\wedge(l1\_unialg\_1\ X0)))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_unialg\_1\ X1)\wedge((v3\_unialg\_1\ X1)\wedge((v4\_unialg\_1\ X1)\wedge(l1\_unialg\_1\ X1)))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))\Rightarrow((k6\_msualg\_1\ X0 = k6\_msualg\_1\ X1)\Rightarrow(k2\_msuhom\_1\ X0\ X1\ X2 = k16\_funcop\_1\ k6\_numbers\ X2)))) \tag{24}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow((v1\_partfun1\ X1\ X0)\Leftrightarrow(k1\_relset\_1\ X0\ X1 = X0)) \tag{25}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow((v1\_msualg\_3\ X0)\Leftrightarrow(\forall X1.\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow(((X1\in k9\_xtuple\_0\ X0)\wedge(k1\_funct\_1\ X0\ X1=X2))\Rightarrow(v2\_funct\_1\ X2)))) \tag{26}$$

Assume the following.

$$\forall X0.\forall X1.k2\_funcop\_1\ X0\ X1=k2\_zfmisc\_1\ X0\ (k1\_tarski\ X1) \tag{27}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_unialg\_1\ X0)\wedge((v3\_unialg\_1\ X0)\wedge((v4\_unialg\_1\ X0)\wedge(l1\_unialg\_1\ X0)))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_unialg\_1\ X1)\wedge((v3\_unialg\_1\ X1)\wedge((v4\_unialg\_1\ X1)\wedge(l1\_unialg\_1\ X1)))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))\Rightarrow((r2\_alg\_1\ X0\ X1\ X2)\Leftrightarrow((r1\_alg\_1\ X0\ X1\ X2)\wedge(v2\_funct\_1\ X2))))) \tag{28}$$

Assume the following.

$$\forall X0.\forall X1.(X1=k1\_tarski\ X0)\Leftrightarrow(\forall X2.(X2\in X1)\Leftrightarrow(X2=X0)) \tag{29}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_unialg\_1\ X0)\wedge((v3\_unialg\_1\ X0)\wedge((v4\_unialg\_1\ X0)\wedge(l1\_unialg\_1\ X0)))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_unialg\_1\ X1)\wedge((v3\_unialg\_1\ X1)\wedge((v4\_unialg\_1\ X1)\wedge(l1\_unialg\_1\ X1)))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))\Rightarrow((r1\_alg\_1\ X0\ X1\ X2)\Leftrightarrow((r1\_unialg\_2\ X0\ X1)\wedge(\forall X3.(m1\_subset\_1\ X3\ k5\_numbers)\Rightarrow((X3\in k4\_finseq\_1\ (u1\_unialg\_1\ X0))\Rightarrow(\forall X4.(m5\_margrel1\ X4\ (u1\_struct\_0\ X0)\ (k1\_unialg\_2\ X0))\Rightarrow(\forall X5.(m5\_margrel1\ X5\ (u1\_struct\_0\ X1)\ (k1\_unialg\_2\ X1))\Rightarrow(((X4=k1\_funct\_1\ (u1\_unialg\_1\ X0)\ X3)\wedge(X5=k1\_funct\_1\ (u1\_unialg\_1\ X1)\ X3))\Rightarrow(\forall X6.(m2\_finseq\_1\ X6\ (u1\_struct\_0\ X0))\Rightarrow((X6\in k1\_relset\_1\ (k3\_finseq\_2\ (u1\_struct\_0\ X0))\ X4)\Rightarrow(k1\_funct\_1\ X2\ (k1\_funct\_1\ X4\ X6)=k1\_funct\_1\ X5\ (k4\_finseqop\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)\ X6\ X2)))))))))))) \tag{30}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow((v13\_struct\_0\ X0\ np\_\_1)\Rightarrow((\neg v2\_struct\_0\ X0)\wedge(v7\_struct\_0\ X0))) \tag{31}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_unialg\_1\ X0)\wedge((v3\_unialg\_1\ X0)\wedge((v4\_unialg\_1\ X0)\wedge(l1\_unialg\_1\ X0)))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_unialg\_1\ X1)\wedge((v3\_unialg\_1\ X1)\wedge((v4\_unialg\_1\ X1)\wedge(l1\_unialg\_1\ X1)))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))\Rightarrow((r2\_alg\_1\ X0\ X1\ X2)\Rightarrow(r3\_msualg\_3\ (k6\_msualg\_1\ X0)\ (k9\_msualg\_1\ X0)\ (k1\_msuhom\_1\ (k6\_msualg\_1\ X0)\ (k6\_msualg\_1\ X1)\ (k9\_msualg\_1\ X1))\ (k2\_msuhom\_1\ X0\ X1\ X2)))))$$