t43_zmodul01 (TMc29prAWqC5unFcH4siyBtqkTvFc5ZWNhe)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v2\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v4\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v2\_zmodul01 : \iota \Rightarrow o$ be given. Let $v3\_zmodul01 : \iota \Rightarrow o$ be given. Let $v4\_zmodul01 : \iota \Rightarrow o$ be given. Let $v5\_zmodul01 : \iota \Rightarrow o$ be given. Let $l1\_zmodul01 : \iota \Rightarrow o$ be given. Let $m1\_zmodul01 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_zmodul01 : \iota \Rightarrow \iota$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_numbers : \iota$ be given. Let $l1\_algstr\_0 : \iota \Rightarrow o$ be given. Let $u1\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l2\_struct\_0 : \iota \Rightarrow o$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_realset1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((r1\_tarski\ X0\ X1) \wedge (r1\_tarski\ X2\ X3)) \Rightarrow (r1\_tarski\ (k2\_zfmisc\_1\ X0\ X2)\ (k2\_zfmisc\_1\ X1\ X3)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(r1\_tarski\ X0\ X1) \Rightarrow ((r1\_tarski\ (k2\_zfmisc\_1\ X0\ X2)\ (k2\_zfmisc\_1\ X1\ X2)) \wedge (r1\_tarski\ (k2\_zfmisc\_1\ X2\ X0)\ (k2\_zfmisc\_1\ X2\ X1))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((r1\_tarski\ X0\ X1) \Rightarrow ((k5\_relat\_1\ (k5\_relat\_1\ X2\ X0)\ X1 = k5\_relat\_1\ X2\ X0) \wedge (k5\_relat\_1\ (k5\_relat\_1\ X2\ X1)\ X0 = k5\_relat\_1\ X2\ X0))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1\_funct\_1\ X2)\wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\Rightarrow(k2\_partfun1\ X0\ X1\ X2\ X3 = k5\_relat\_1\ X2\ X3) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1\ (k2\_zfmisc\_1\ X0\ X1) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_zmodul01\ X0)\Rightarrow((v1\_funct\_1\ (u1\_zmodul01\ X0))\wedge((v1\_funct\_2\ (u1\_zmodul01\ X0)\ (k2\_zfmisc\_1\ k4\_numbers\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ (u1\_zmodul01\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ k4\_numbers\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0))))))) \tag{6}$$

Assume the following.

$$\forall X0.(l1\_algstr\_0\ X0)\Rightarrow((v1\_funct\_1\ (u1\_algstr\_0\ X0))\wedge((v1\_funct\_2\ (u1\_algstr\_0\ X0)\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ (u1\_algstr\_0\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0))))))) \tag{7}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v2\_zmodul01\ X0)\wedge((v3\_zmodul01\ X0)\wedge((v4\_zmodul01\ X0)\wedge((v5\_zmodul01\ X0)\wedge(l1\_zmodul01\ X0))))))))))\Rightarrow(\forall X1.(m1\_zmodul01\ X1\ X0)\Rightarrow((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v2\_zmodul01\ X1)\wedge((v3\_zmodul01\ X1)\wedge((v4\_zmodul01\ X1)\wedge((v5\_zmodul01\ X1)\wedge(l1\_zmodul01\ X1))))))))))) \tag{8}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0)\Rightarrow((l2\_struct\_0\ X0)\wedge(l1\_algstr\_0\ X0)) \tag{9}$$

Assume the following.

$$\forall X0.(l1\_zmodul01\ X0)\Rightarrow(l2\_algstr\_0\ X0) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v2\_zmodul01\ X0)\wedge((v3\_zmodul01\ X0)\wedge((v4\_zmodul01\ X0)\wedge((v5\_zmodul01\ X0)\wedge(l1\_zmodul01\ X0))))))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v2\_zmodul01\ X1)\wedge((v3\_zmodul01\ X1)\wedge((v4\_zmodul01\ X1)\wedge((v5\_zmodul01\ X1)\wedge(l1\_zmodul01\ X1))))))))))\Rightarrow((m1\_zmodul01\ X1\ X0)\Leftrightarrow((r1\_tarski\ (u1\_struct\_0\ X1)\ (u1\_struct\_0\ X0))\wedge((k4\_struct\_0\ X1 = k4\_struct\_0\ X0)\wedge((u1\_algstr\_0\ X1 = k1\_realset1\ (u1\_algstr\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(u1\_zmodul01\ X1 = k2\_partfun1\ (k2\_zfmisc\_1\ k4\_numbers\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)\ (u1\_zmodul01\ X0)\ (k2\_zfmisc\_1\ k4\_numbers\ (u1\_struct\_0\ X1)))))))) \tag{11}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0)\Rightarrow(\forall X1.k1\_realset1\ X0\ X1 = k5\_relat\_1\ X0\ (k2\_zfmisc\_1\ X1\ X1)) \tag{12}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v1\_relat\_1\ X1)) \tag{13}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v2\_zmodul01\ X0)\wedge((v3\_zmodul01\ X0)\wedge((v4\_zmodul01\ X0)\wedge((v5\_zmodul01\ X0)\wedge(l1\_zmodul01\ X0))))))))))\Rightarrow(\forall X1.(m1\_zmodul01\ X1\ X0)\Rightarrow(\forall X2.(m1\_zmodul01\ X2\ X0)\Rightarrow((r1\_tarski\ (u1\_struct\_0\ X1)\ (u1\_struct\_0\ X2))\Rightarrow(m1\_zmodul01\ X1\ X2))))$$