

t42_zmodul01
(TMcqV2X4Rb862EC8rTRaUsz9jPtxXvpw2Xf)

October 27, 2020

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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $u1_struct_0 : \iota \Rightarrow \iota$ 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.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((r1_tarski X0 X1) \wedge (r1_tarski X2 X3)) \Rightarrow (r1_tarski (k2_zfmisc_1 X0 X2) (k2_zfmisc_1 X1 X3)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (r1_tarski X0 X1) \Rightarrow ((r1_tarski (k2_zfmisc_1 X0 X2) (k2_zfmisc_1 X1 X2)) \wedge (r1_tarski (k2_zfmisc_1 X2 X0) (k2_zfmisc_1 X2 X1))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow ((r1_tarski X0 X1) \Rightarrow ((k5_relat_1 (k5_relat_1 X2 X0) X1 = k5_relat_1 X2 X0) \wedge (k5_relat_1 (k5_relat_1 X2 X1) X0 = k5_relat_1 X2 X0))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2)\wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow(k2_partfun1 X0 X1 X2 X3 = k5_relat_1 X2 X3) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k2_zfmisc_1 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.(l1_zmodul01 X0)\Rightarrow((v1_funct_1 (u1_zmodul01 X0))\wedge ((v1_funct_2 (u1_zmodul01 X0) (k2_zfmisc_1 k4_numbers (u1_struct_0 X0)) (u1_struct_0 X0))\wedge(m1_subset_1 (u1_zmodul01 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 k4_numbers (u1_struct_0 X0)) (u1_struct_0 X0)))))) \quad (7)$$

Assume the following.

$$\forall X0.(l1_algstr_0 X0)\Rightarrow((v1_funct_1 (u1_algstr_0 X0))\wedge ((v1_funct_2 (u1_algstr_0 X0) (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)) (u1_struct_0 X0))\wedge(m1_subset_1 (u1_algstr_0 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)) (u1_struct_0 X0)))))) \quad (8)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0)\Rightarrow((l2_struct_0 X0)\wedge(l1_algstr_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l1_zmodul01 X0)\Rightarrow(l2_algstr_0 X0) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v2_zmodul01 X0)\wedge((v3_zmodul01 X0)\wedge((v4_zmodul01 X0)\wedge((v5_zmodul01 X0)\wedge(l1_zmodul01 X0))))))))))\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v2_rlvect_1 X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v2_zmodul01 X1)\wedge((v3_zmodul01 X1)\wedge((v4_zmodul01 X1)\wedge((v5_zmodul01 X1)\wedge(l1_zmodul01 X1))))))))))\Rightarrow((m1_zmodul01 X1 X0)\Leftrightarrow((r1_tarski (u1_struct_0 X1) (u1_struct_0 X0))\wedge((k4_struct_0 X1 = k4_struct_0 X0)\wedge((u1_algstr_0 X1 = k1_realset1 (u1_algstr_0 X0) (u1_struct_0 X1))\wedge(u1_zmodul01 X1 = k2_partfun1 (k2_zfmisc_1 k4_numbers (u1_struct_0 X0)) (u1_struct_0 X0) (u1_zmodul01 X0) (k2_zfmisc_1 k4_numbers (u1_struct_0 X1)))))) \quad (11)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(k1_realset1 X0 X1 = k5_relat_1 X0 (k2_zfmisc_1 X1 X1)) \quad (12)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_relat_1 X1)) \quad (13)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v2_zmodul01 X0) \wedge ((v3_zmodul01 X0) \wedge ((v4_zmodul01 X0) \wedge ((v5_zmodul01 X0) \wedge (l1_zmodul01 X0)))))))))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v2_zmodul01 X1) \wedge ((v3_zmodul01 X1) \wedge ((v4_zmodul01 X1) \wedge ((v5_zmodul01 X1) \wedge (l1_zmodul01 X1)))))))))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge ((v13_algstr_0 X2) \wedge ((v2_rlvect_1 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge ((v2_zmodul01 X2) \wedge ((v3_zmodul01 X2) \wedge ((v4_zmodul01 X2) \wedge ((v5_zmodul01 X2) \wedge (l1_zmodul01 X2)))))))))) \Rightarrow (((m1_zmodul01 X0 X1) \wedge (m1_zmodul01 X1 X2)) \Rightarrow (m1_zmodul01 X0 X2))) \end{aligned}$$