

t10_scmring2
(TMWrLka1EzMa9z9zBzp7uPwCfrbqfxQcE19)

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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 $v3_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_scmring2 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v5_funct_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_compos_1 : \iota \Rightarrow \iota$ be given. Let $k1_scmringi : \iota \Rightarrow \iota$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_ami_2 : \iota$ be given. Let $k1_scmring1 : \iota \Rightarrow \iota$ be given. Let $k2_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_scmring1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_compos_0 : \iota \Rightarrow o$ be given. Let $v2_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_scmring1 : \iota \Rightarrow \iota$ be given. Let $v1_setfam_1 : \iota \Rightarrow o$ be given. Let $k1_ami_2 : \iota$ be given. Let $u2_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 \ np_2) \wedge (m2_subset_1 \ np_2 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_2 \ k5_numbers) \wedge (m1_subset_1 \ np_2 \ k1_numbers)) \end{aligned} \quad (1)$$

Assume the following.

$$\neg v1_xboole_0 \ np_2 \quad (2)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))))\wedge(m1_subset_1 X3 X0)))\Rightarrow(k3_funct_2 X0 \\ & X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 \\ & X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v3_group_1 X0)\wedge(\\ & (v4_vectsp_1 X0)\wedge((v5_vectsp_1 X0)\wedge(l6_algstr_0 X0))))))))\Rightarrow \\ & ((\neg v1_xboole_0 (k1_scmringi X0))\wedge(v1_compos_0 (k1_scmringi \\ & X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 \\ & X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v3_group_1 X0)\wedge(\\ & (v4_vectsp_1 X0)\wedge((v5_vectsp_1 X0)\wedge(l6_algstr_0 X0))))))))\Rightarrow \\ & ((v2_memstr_0 (k1_scmring2 X0) np_2)\wedge(v1_extpro_1 (k1_scmring2 \\ & X0) np_2)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(l1_extpro_1 X1 X0)\Rightarrow((v1_funct_1 (u1_extpro_1 \\ & X0 X1))\wedge((v1_funct_2 (u1_extpro_1 X0 X1) (u1_compos_1 X1) (k1_funct_2 \\ & (k4_card_3 (k3_relat_1 (u1_memstr_0 X0 X1) (u2_memstr_0 X0 X1))) \\ & (k4_card_3 (k3_relat_1 (u1_memstr_0 X0 X1) (u2_memstr_0 X0 X1))))))\wedge \\ & (m1_subset_1 (u1_extpro_1 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (u1_compos_1 \\ & X1) (k1_funct_2 (k4_card_3 (k3_relat_1 (u1_memstr_0 X0 X1) (u2_memstr_0 \\ & X0 X1))) (k4_card_3 (k3_relat_1 (u1_memstr_0 X0 X1) (u2_memstr_0 \\ & X0 X1)))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 \\ & X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v3_group_1 X0)\wedge(\\ & (v4_vectsp_1 X0)\wedge((v5_vectsp_1 X0)\wedge(l6_algstr_0 X0))))))))\Rightarrow \\ & ((v1_funct_1 (k8_scmring1 X0))\wedge((v1_funct_2 (k8_scmring1 X0) \\ & (k1_scmringi X0) (k1_funct_2 (k4_card_3 (k3_relat_1 k3_ami_2 \\ & (k1_scmring1 X0))) (k4_card_3 (k3_relat_1 k3_ami_2 (k1_scmring1 \\ & X0))))))\wedge(m1_subset_1 (k8_scmring1 X0) (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k1_scmringi X0) (k1_funct_2 (k4_card_3 (k3_relat_1 k3_ami_2 \\ & (k1_scmring1 X0))) (k4_card_3 (k3_relat_1 k3_ami_2 (k1_scmring1 \\ & X0)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\ & (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\ & ((v1_extpro_1 (k1_scmring2 X0) np_2) \wedge (l1_extpro_1 (k1_scmring2 \\ & X0) np_2)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_setfam_1 X0) \Rightarrow (\forall X1.((v2_memstr_0 X1 X0) \wedge \\ & (l1_extpro_1 X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_compos_1 \\ & X1)) \Rightarrow (\forall X3.((v1_relat_1 X3) \wedge ((v4_relat_1 X3 (u1_struct_0 \\ & X1)) \wedge ((v1_funct_1 X3) \wedge ((v5_funct_1 X3 (k2_memstr_0 X0 X1)) \wedge (\\ & v1_partfun1 X3 (u1_struct_0 X1)))))) \Rightarrow (k2_extpro_1 X0 X1 X2 X3 = \\ & k1_funct_1 (k3_funct_2 (u1_compos_1 X1) (k1_funct_2 (k4_card_3 \\ & (k3_relat_1 (u1_memstr_0 X0 X1) (u2_memstr_0 X0 X1))) (k4_card_3 \\ & (k3_relat_1 (u1_memstr_0 X0 X1) (u2_memstr_0 X0 X1)))) (u1_extpro_1 \\ & X0 X1) X2) X3)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\ & (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\ & ((\forall X1.((v1_extpro_1 X1 np_2) \wedge (l1_extpro_1 X1 np_2)) \Rightarrow \\ & ((X1 = k1_scmring2 X0) \Leftrightarrow ((u1_struct_0 X1 = k1_ami_2) \wedge ((u2_struct_0 \\ & X1 = k5_numbers) \wedge ((u1_compos_1 X1 = k1_scmringi X0) \wedge ((r1_funct_2 \\ & (u1_struct_0 X1) np_2 k1_ami_2 np_2 (u1_memstr_0 np_2 X1) k3_ami_2) \wedge \\ & ((u2_memstr_0 np_2 X1 = k1_scmring1 X0) \wedge (u1_extpro_1 np_2 X1 = \\ & k8_scmring1 X0)))))))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\ & (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\ & ((\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k1_scmringi X0) \\ & (k1_funct_2 (k4_card_3 (k3_relat_1 k3_ami_2 (k1_scmring1 X0))) \\ & (k4_card_3 (k3_relat_1 k3_ami_2 (k1_scmring1 X0)))))) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 (k1_scmringi X0) (k1_funct_2 (k4_card_3 \\ & (k3_relat_1 k3_ami_2 (k1_scmring1 X0))) (k4_card_3 (k3_relat_1 \\ & k3_ami_2 (k1_scmring1 X0))))))))) \Rightarrow ((X1 = k8_scmring1 X0) \Leftrightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_scmringi X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (k4_card_3 (k3_relat_1 k3_ami_2 (k1_scmring1 X0))) \Rightarrow (k1_funct_1 \\ & (k3_funct_2 (k1_scmringi X0) (k1_funct_2 (k4_card_3 (k3_relat_1 \\ & k3_ami_2 (k1_scmring1 X0))) (k4_card_3 (k3_relat_1 k3_ami_2 (\\ & k1_scmring1 X0)))) X1 X2) X3 = k7_scmring1 X0 X2 X3)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v7_ordinal1 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v7_ordinal1 X0) \wedge (\neg v1_setfam_1 X0))) \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\ & (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\ & (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 (k1_scmring2 \\ X0))) \wedge ((v1_funct_1 X1) \wedge ((v5_funct_1 X1 (k2_memstr_0 np_2 (k1_scmring2 \\ X0))) \wedge (v1_partfun1 X1 (u1_struct_0 (k1_scmring2 X0)))))))) \Rightarrow (\\ & \forall X2.(m1_subset_1 X2 (u1_compos_1 (k1_scmring2 X0))) \Rightarrow (\\ & \forall X3.(m1_subset_1 X3 (k1_scmringi X0)) \Rightarrow ((X3 = X2) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 (k4_card_3 (k3_relat_1 k3_ami_2 (k1_scmring1 \\ X0)))) \Rightarrow ((X4 = X1) \Rightarrow (k2_extpro_1 np_2 (k1_scmring2 X0) X2 X1 = k7_scmring1 \\ & X0 X3 X4)))))) \end{aligned}$$