

t44_rmod_4
(TMaxytsSVwybwKu6GGoHr3LFBj1otj6E9S9)

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 $v3_group_1 : \iota \Rightarrow o$ 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 $v4_vectsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_vectsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_rmod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_rmod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_rmod_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_rmod_4 : \iota \Rightarrow \iota$ be given. Let $v1_vectsp_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_vectsp_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\ & X0) \wedge ((v4_rlvect_1 X0) \wedge ((v1_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 X0 \\ & X1 (k4_struct_0 X0) = k4_struct_0 X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\ & v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\ & (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\ & X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v4_vectsp_2 X1 X0) \wedge \\ & (l1_vectsp_2 X1 X0)))))))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 \\ & X1)) \Rightarrow (k3_funct_2 (u1_struct_0 X1) (u1_struct_0 X0) (k3_rmod_4 \\ & X0 X1) X2 = k4_struct_0 X0)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\ & X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge \\ & ((v4_rlvect_1 X0)\wedge((v3_group_1 X0)\wedge((v4_vectsp_1 X0)\wedge((v5_vectsp_1 \\ & X0)\wedge(l6_algstr_0 X0))))))))\wedge(((\neg v2_struct_0 X1)\wedge((v13_algstr_0 \\ & X1)\wedge((v2_rlvect_1 X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge \\ & ((v4_vectsp_2 X1 X0)\wedge(l1_vectsp_2 X1 X0))))))\wedge((m1_rmod_4 X2 \\ & X0 X1)\wedge(m1_rmod_4 X3 X0 X1)))\Rightarrow((r1_rmod_4 X0 X1 X2 X3)\Leftrightarrow(X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u1_struct_0 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X1)\wedge(m1_funct_2 \\ & X2 X0 X1))\Rightarrow(\forall X3.(m2_funct_2 X3 X0 X1 X2)\Rightarrow((v1_funct_1 X3)\wedge \\ & ((v1_funct_2 X3 X0 X1)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge \\ & ((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v3_group_1 \\ & X0)\wedge((v4_vectsp_1 X0)\wedge((v5_vectsp_1 X0)\wedge(l6_algstr_0 X0))))))))\wedge \\ & ((\neg v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v2_rlvect_1 X1)\wedge((\\ & v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v4_vectsp_2 X1 X0)\wedge(l1_vectsp_2 \\ & X1 X0))))))))\Rightarrow(\forall X2.(m1_rmod_4 X2 X0 X1)\Rightarrow(m2_funct_2 X2 \\ & (u1_struct_0 X1) (u1_struct_0 X0) (k9_funct_2 (u1_struct_0 X1) \\ & (u1_struct_0 X0)))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0)\Rightarrow((l2_algstr_0 X0)\wedge(l5_algstr_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0)\Rightarrow(l1_struct_0 X0) \quad (8)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l1_struct_0 X0)\Rightarrow(\forall X1.(l1_vectsp_2 X1 X0)\Rightarrow (l2_algstr_0 X1)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1_xboole_0 X1)\Rightarrow(m1_funct_2 (k9_funct_2 X0 X1) X0 X1) \quad (11)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0)\Rightarrow(m1_subset_1 (k4_struct_0 X0) (u1_struct_0 X0)) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge \\ & ((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v3_group_1 \\ & X0)\wedge((v4_vectsp_1 X0)\wedge((v5_vectsp_1 X0)\wedge(l6_algstr_0 X0))))))\wedge \\ & ((\neg v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v2_rlvect_1 X1)\wedge((\\ & v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v4_vectsp_2 X1 X0)\wedge(l1_vectsp_2 \\ & X1 X0))))))\Rightarrow(m1_rmod_4 (k3_rmod_4 X0 X1) X0 X1) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))\wedge(m1_subset_1 X3 X0)))\Rightarrow(m1_subset_1 (\\ & k3_funct_2 X0 X1 X2 X3) X1) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 \\ & X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v3_group_1 X0)\wedge(\\ & (v4_vectsp_1 X0)\wedge((v5_vectsp_1 X0)\wedge(l6_algstr_0 X0))))))\Rightarrow \\ & (\forall X1.((\neg v2_struct_0 X1)\wedge((v13_algstr_0 X1)\wedge((v2_rlvect_1 \\ & X1)\wedge((v3_rlvect_1 X1)\wedge((v4_rlvect_1 X1)\wedge((v4_vectsp_2 X1 X0)\wedge \\ & (l1_vectsp_2 X1 X0))))))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ & X0))\Rightarrow(\forall X3.(m1_rmod_4 X3 X0 X1)\Rightarrow(\forall X4.(m1_rmod_4 \\ & X4 X0 X1)\Rightarrow((X4 = k7_rmod_4 X0 X1 X2 X3)\Leftrightarrow(\forall X5.(m1_subset_1 \\ & X5 (u1_struct_0 X1))\Rightarrow(k3_funct_2 (u1_struct_0 X1) (u1_struct_0 \\ & X0) X4 X5 = k6_algstr_0 X0 (k3_funct_2 (u1_struct_0 X1) (u1_struct_0 \\ & X0) X3 X5) X2)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0)\Rightarrow(((\neg v2_struct_0 X0)\wedge(v5_vectsp_1 X0))\Rightarrow((\neg v2_struct_0 X0)\wedge((v1_vectsp_1 X0)\wedge(v2_vectsp_1 X0))) \quad (16)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\ & X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v3_group_1 X0) \wedge \\ & (v4_vectsp_1 X0) \wedge (v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))) \Rightarrow \\ & (\forall X1.((\neg v2_struct_0 X1) \wedge (v13_algstr_0 X1) \wedge (v2_rlvect_1 \\ & X1) \wedge (v3_rlvect_1 X1) \wedge (v4_rlvect_1 X1) \wedge (v4_vectsp_2 X1 X0) \wedge \\ & (l1_vectsp_2 X1 X0)))) \Rightarrow (\forall X2.(m1_rmod_4 X2 X0 X1) \Rightarrow (r1_rmod_4 \\ & X0 X1 (k7_rmod_4 X0 X1 (k4_struct_0 X0) X2) (k3_rmod_4 X0 X1))) \end{aligned}$$