

t26_ranknull

(TMaWCJt534vqK71wRYoLFymLVQ8ozTiNEqa)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v33_algstr_0 : \iota \Rightarrow o$ 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 $v5_group_1 : \iota \Rightarrow o$ 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 $v8_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v9_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v10_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v11_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_vectsp_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_ranknull : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_vectsp_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $m2_vectsp_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
 & X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
 & ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
 & (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v8_vectsp_1 \\
 & X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 \\
 & X1 X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\
 & (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
 & X1)) \Rightarrow (\forall X3.(m1_vectsp_6 X3 X0 X1) \Rightarrow ((k3_funct_2 (u1_struct_0 \\
 & X1) (u1_struct_0 X0) X3 X2 = k4_struct_0 X0) \Leftrightarrow (\neg X2 \in k1_vectsp_6 X0 \\
 & X1 X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l2_struct_0 \\
 & X0)) \wedge (((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 X0)) \wedge (m1_subset_1 \\
 & X2 (k1_zfmisc_1 (u1_struct_0 X1)))))) \Rightarrow (\forall X3.(m2_vectsp_6 \\
 & X3 X0 X1 X2) \Rightarrow (m1_vectsp_6 X3 X0 X1))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\ & X0) \wedge (\neg v6_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v33_algstr_0 X0) \wedge \\ & ((v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v3_group_1 \\ & X0) \wedge (v5_group_1 X0) \wedge (v4_vectsp_1 X0) \wedge (v5_vectsp_1 X0) \wedge \\ & l6_algstr_0 X0)))))) \wedge (((\neg v2_struct_0 X1) \wedge (v13_algstr_0 \\ & X1) \wedge (v2_rlvect_1 X1) \wedge (v3_rlvect_1 X1) \wedge (v4_rlvect_1 X1) \wedge \\ & ((v8_vectsp_1 X1 X0) \wedge (v9_vectsp_1 X1 X0) \wedge (v10_vectsp_1 X1 X0) \wedge \\ & ((v11_vectsp_1 X1 X0) \wedge (l1_vectsp_1 X1 X0)))))) \wedge ((m1_vectsp_6 \\ & X2 X0 X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X1)))))) \Rightarrow \\ & (m2_vectsp_6 (k6_ranknull X0 X1 X2 X3) X0 X1 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l2_struct_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 X0)) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (k1_zfmisc_1 (u1_struct_0 X1))) \Rightarrow (\forall X3. (m1_vectsp_6 \\ & X3 X0 X1) \Rightarrow ((m2_vectsp_6 X3 X0 X1 X2) \Leftrightarrow (r1_tarski (k1_vectsp_6 X0 \\ & X1 X3) X2)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (\neg v6_struct_0 X0) \wedge (v13_algstr_0 \\ & X0) \wedge (v33_algstr_0 X0) \wedge (v2_rlvect_1 X0) \wedge (v3_rlvect_1 X0) \wedge \\ & ((v4_rlvect_1 X0) \wedge (v3_group_1 X0) \wedge (v5_group_1 X0) \wedge (v4_vectsp_1 \\ & X0) \wedge (v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (v13_algstr_0 X1) \wedge (v2_rlvect_1 X1) \wedge ((\\ & v3_rlvect_1 X1) \wedge (v4_rlvect_1 X1) \wedge (v8_vectsp_1 X1 X0) \wedge (v9_vectsp_1 \\ & X1 X0) \wedge (v10_vectsp_1 X1 X0) \wedge (v11_vectsp_1 X1 X0) \wedge (l1_vectsp_1 \\ & X1 X0)))))) \Rightarrow (\forall X2. (m1_vectsp_6 X2 X0 X1) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X1))) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 (u1_struct_0 X1)) \Rightarrow ((\neg X4 \in X3) \Rightarrow (k3_funct_2 (u1_struct_0 \\ & X1) (u1_struct_0 X0) (k6_ranknull X0 X1 X2 X3) X4 = k4_struct_0 X0)))))) \end{aligned}$$