

t23_vectsp10 (TMXV-
TAZudu7RRN54hAGEBCWTWNCfmjr1ppP)

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 $v8_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $m1_vectsp_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m2_vectsp_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_vectsp_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_vectsp10 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_vectsp10 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k3_vectsp10 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_vectsp10 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_vectsp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_vectsp10 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v13_algstr_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\
& ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 \\
& X0)))))))) \wedge (((\neg v2_struct_0 X1) \wedge (v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v8_vectsp_1 X1 X0) \wedge \\
& ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 X1 \\
& X0) \wedge (l1_vectsp_1 X1 X0)))))))))) \wedge (m1_vectsp_4 X2 X0 X1)) \Rightarrow ((\\
& \neg v2_struct_0 (k6_vectsp10 X0 X1 X2)) \wedge ((v13_algstr_0 (k6_vectsp10 \\
& X0 X1 X2)) \wedge ((v2_rlvect_1 (k6_vectsp10 X0 X1 X2)) \wedge ((v3_rlvect_1 \\
& (k6_vectsp10 X0 X1 X2)) \wedge ((v4_rlvect_1 (k6_vectsp10 X0 X1 X2)) \wedge \\
& ((v7_vectsp_1 (k6_vectsp10 X0 X1 X2) X0) \wedge ((v8_vectsp_1 (k6_vectsp10 \\
& X0 X1 X2) X0) \wedge ((v9_vectsp_1 (k6_vectsp10 X0 X1 X2) X0) \wedge ((v10_vectsp_1 \\
& (k6_vectsp10 X0 X1 X2) X0) \wedge ((v11_vectsp_1 (k6_vectsp10 X0 X1 X2) \\
& X0) \wedge (l1_vectsp_1 (k6_vectsp10 X0 X1 X2) X0))))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\
& X0) \wedge (v13_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge \\
& ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 \\
& X0) \wedge (l6_algstr_0 X0)))))))) \wedge (((\neg v2_struct_0 X1) \wedge (v13_algstr_0 \\
& X1) \wedge ((v8_vectsp_1 X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 \\
& X1 X0) \wedge ((v11_vectsp_1 X1 X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 \\
& X1) \wedge ((v4_rlvect_1 X1) \wedge (l1_vectsp_1 X1 X0)))))))))) \wedge ((m1_subset_1 \\
& X2 (u1_struct_0 X1)) \wedge (m1_vectsp_4 X3 X0 X1)) \Rightarrow (m1_subset_1 (\\
& k3_vectsp_4 X0 X1 X2 X3) (k1_zfmisc_1 (u1_struct_0 X1)))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge ((v3_group_1 \\
& X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1. ((\neg v2_struct_0 X1) \wedge (v13_algstr_0 X1) \wedge ((v8_vectsp_1 \\
& X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 \\
& X1 X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\
& (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2. (m1_vectsp_4 X2 X0 X1) \Rightarrow \\
& (\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X1))) \Rightarrow \\
& ((m2_vectsp_4 X3 X0 X1 X2) \Leftrightarrow (\exists X4. (m1_subset_1 X4 (u1_struct_0 \\
& X1)) \wedge (X3 = k3_vectsp_4 X0 X1 X4 X2))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v8_vectsp_1 X1 X0) \wedge \\
& ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 X1 \\
& X0) \wedge (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1_vectsp_4 X2 \\
& X0 X1) \Rightarrow (\forall X3.((\neg v2_struct_0 X3) \wedge ((v13_algstr_0 X3) \wedge ((\\
& v2_rlvect_1 X3) \wedge ((v3_rlvect_1 X3) \wedge ((v4_rlvect_1 X3) \wedge ((v7_vectsp_1 \\
& X3 X0) \wedge ((v8_vectsp_1 X3 X0) \wedge ((v9_vectsp_1 X3 X0) \wedge ((v10_vectsp_1 \\
& X3 X0) \wedge ((v11_vectsp_1 X3 X0) \wedge (l1_vectsp_1 X3 X0)))))))))) \Rightarrow (\\
& (X3 = k6_vectsp10 X0 X1 X2) \Leftrightarrow ((u1_struct_0 X3 = k2_vectsp10 X0 X1 X2) \wedge \\
& ((r1_funct_2 (k2_zfmisc_1 (u1_struct_0 X3) (u1_struct_0 X3)) \\
& (u1_struct_0 X3) (k2_zfmisc_1 (k2_vectsp10 X0 X1 X2) (k2_vectsp10 \\
& X0 X1 X2)) (k2_vectsp10 X0 X1 X2) (u1_algstr_0 X3) (k3_vectsp10 X0 \\
& X1 X2)) \wedge ((k4_struct_0 X3 = k4_vectsp10 X0 X1 X2) \wedge (r1_funct_2 (k2_zfmisc_1 \\
& (u1_struct_0 X0) (u1_struct_0 X3)) (u1_struct_0 X3) (k2_zfmisc_1 \\
& (u1_struct_0 X0) (k2_vectsp10 X0 X1 X2)) (k2_vectsp10 X0 X1 X2) (\\
& u1_vectsp_1 X0 X3) (k5_vectsp10 X0 X1 X2))))))))) \tag{5}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v8_vectsp_1 X1 X0) \wedge \\
& ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 X1 \\
& X0) \wedge (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1_vectsp_4 X2 \\
& X0 X1) \Rightarrow (k2_vectsp10 X0 X1 X2 = \text{ReplSep} (\text{toset} (\lambda X3 : \iota.m2_vectsp_4 \\
& X3 X0 X1 X2)) (\lambda X3 : \iota.True) (\lambda X3 : \iota.X3)))) \tag{6}
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v8_vectsp_1 X1 X0) \wedge \\
& ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 X1 \\
& X0) \wedge (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1_vectsp_4 X2 \\
& X0 X1) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X1)) \Rightarrow ((m2_vectsp_4 \\
& (k3_vectsp_4 X0 X1 X3 X2) X0 X1 X2) \wedge (m1_subset_1 (k3_vectsp_4 X0 \\
& X1 X3 X2) (u1_struct_0 (k6_vectsp10 X0 X1 X2))))))
\end{aligned}$$