

t30_vectsp_5 (TMKGQdPkM- BGdR2LxQYV9B6PMai1XXYdCPai)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ 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 $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ 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 $v7_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_vectsp_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_vectsp_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
& X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v8_vectsp_1 \\
& X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 \\
& X1 X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\
& (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2.((v7_vectsp_1 X2 X0) \wedge \\
& (m1_vectsp_4 X2 X0 X1)) \Rightarrow (\forall X3.((v7_vectsp_1 X3 X0) \wedge (m1_vectsp_4 \\
& X3 X0 X1)) \Rightarrow ((u1_struct_0 X2 = u1_struct_0 X3) \Rightarrow (X2 = X3))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
& X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v8_vectsp_1 \\
& X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 \\
& X1 X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\
& (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1_vectsp_4 X2 X0 X1) \Rightarrow \\
& ((\forall X3.((v7_vectsp_1 X3 X0) \wedge (m1_vectsp_4 X3 X0 X1)) \Rightarrow ((m1_vectsp_4 \\
& X3 X0 X2) \Rightarrow (k2_vectsp_5 X0 X1 X3 X2 = X3))) \wedge (\forall X3.(m1_vectsp_4 \\
& X3 X0 X1) \Rightarrow ((k2_vectsp_5 X0 X1 X3 X2 = X3) \Rightarrow (m1_vectsp_4 X3 X0 X2))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
& X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v8_vectsp_1 \\
& X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 \\
& X1 X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\
& (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1_vectsp_4 X2 X0 X1) \Rightarrow \\
& (\forall X3.(m1_vectsp_4 X3 X0 X1) \Rightarrow (\forall X4.(m1_vectsp_4 X4 \\
& X0 X1) \Rightarrow ((m1_vectsp_4 X2 X0 X3) \Rightarrow (u1_struct_0 (k2_vectsp_5 X0 X1 \\
& X3 (k1_vectsp_5 X0 X1 X2 X4) = u1_struct_0 (k1_vectsp_5 X0 X1 (k2_vectsp_5 \\
& X0 X1 X2 X3) (k2_vectsp_5 X0 X1 X3 X4)))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\
& X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge \\
& ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 \\
& X0) \wedge (l6_algstr_0 X0)))))))))) \wedge (((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 \\
& X1) \wedge ((v8_vectsp_1 X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 \\
& X1 X0) \wedge ((v11_vectsp_1 X1 X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 \\
& X1) \wedge ((v4_rlvect_1 X1) \wedge (l1_vectsp_1 X1 X0)))))))))) \wedge ((m1_vectsp_4 \\
& X2 X0 X1) \wedge (m1_vectsp_4 X3 X0 X1))) \Rightarrow ((v7_vectsp_1 (k2_vectsp_5 \\
& X0 X1 X2 X3) X0) \wedge (m1_vectsp_4 (k2_vectsp_5 X0 X1 X2 X3) X0 X1))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\
& X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge \\
& ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 \\
& X0) \wedge (l6_algstr_0 X0)))))))))) \wedge (((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 \\
& X1) \wedge ((v8_vectsp_1 X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 \\
& X1 X0) \wedge ((v11_vectsp_1 X1 X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 \\
& X1) \wedge ((v4_rlvect_1 X1) \wedge (l1_vectsp_1 X1 X0)))))))))) \wedge ((m1_vectsp_4 \\
& X2 X0 X1) \wedge (m1_vectsp_4 X3 X0 X1))) \Rightarrow ((v7_vectsp_1 (k1_vectsp_5 \\
& X0 X1 X2 X3) X0) \wedge (m1_vectsp_4 (k1_vectsp_5 X0 X1 X2 X3) X0 X1))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\
& X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge \\
& ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 \\
& X0) \wedge (l6_algstr_0 X0)))))))) \wedge (((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 \\
& X1) \wedge ((v8_vectsp_1 X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 \\
& X1 X0) \wedge ((v11_vectsp_1 X1 X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 \\
& X1) \wedge ((v4_rlvect_1 X1) \wedge (l1_vectsp_1 X1 X0)))))))) \wedge ((m1_vectsp_4 \\
& X2 X0 X1) \wedge (m1_vectsp_4 X3 X0 X1))) \Rightarrow (k2_vectsp_5 X0 X1 X2 X3 = k2_vectsp_5 \\
& X0 X1 X3 X2)
\end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned}
& \forall X0. (((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
& X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1. (((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v8_vectsp_1 \\
& X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 \\
& X1 X0) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\
& (l1_vectsp_1 X1 X0)))))))) \Rightarrow (\forall X2. (m1_vectsp_4 X2 X0 X1) \Rightarrow \\
& (\forall X3. (m1_vectsp_4 X3 X0 X1) \Rightarrow (\forall X4. ((v7_vectsp_1 \\
& X4 X0) \wedge (m1_vectsp_4 X4 X0 X1)) \Rightarrow ((m1_vectsp_4 X4 X0 X2) \Rightarrow (k1_vectsp_5 \\
& X0 X1 X4 (k2_vectsp_5 X0 X1 X3 X2) = k2_vectsp_5 X0 X1 (k1_vectsp_5 \\
& X0 X1 X4 X3) X2))))))
\end{aligned}$$