

t15_ring_1

(TMb574mfP4QY3ULpHbMfBHcupnUId4URDh8)

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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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_ideal_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_ideal_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_ideal_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k6_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_ring_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_ring_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v36_algstr_0 : \iota \Rightarrow o$ be given. Let $k8_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k3_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge \\
 & ((v3_group_1 X0) \wedge (v4_vectsp_1 X0) \wedge (v5_vectsp_1 X0) \wedge (v2_rlvect_1 \\
 & X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))) \wedge \\
 & (((\neg v1_xboole_0 X1) \wedge (v1_ideal_1 X1 X0) \wedge (v2_ideal_1 X1 X0) \wedge \\
 & (v3_ideal_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
 & X0)))))) \Rightarrow ((v36_algstr_0 (k2_ring_1 X0 X1)) \wedge (l6_algstr_0 (\\
 & k2_ring_1 X0 X1)))
 \end{aligned}
 \tag{1}$$

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 v1_xboole_0 X1) \wedge ((v1_ideal_1 X1 X0) \wedge ((v2_ideal_1 \\
& X1 X0) \wedge ((v3_ideal_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.((v36_algstr_0 X2) \wedge (l6_algstr_0 X2)) \Rightarrow \\
& ((X2 = k2_ring_1 X0 X1) \Leftrightarrow ((u1_struct_0 X2 = k8_eqrel_1 (u1_struct_0 \\
& X0) (k1_ring_1 X0 X1)) \wedge ((k5_struct_0 X2 = k6_eqrel_1 (u1_struct_0 \\
& X0) (u1_struct_0 X0) (k1_ring_1 X0 X1) (k5_struct_0 X0)) \wedge ((k4_struct_0 \\
& X2 = k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 X0) (k1_ring_1 X0 \\
& X1) (k4_struct_0 X0)) \wedge ((\forall X3.(m1_subset_1 X3 (u1_struct_0 \\
& X2)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X2)) \Rightarrow (\exists X5. \\
& (m1_subset_1 X5 (u1_struct_0 X0)) \wedge (\exists X6.(m1_subset_1 X6 \\
& (u1_struct_0 X0)) \wedge ((X3 = k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 \\
& X0) (k1_ring_1 X0 X1) X5) \wedge ((X4 = k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 \\
& X0) (k1_ring_1 X0 X1) X6) \wedge (k5_binop_1 (u1_struct_0 X2) (u1_algstr_0 \\
& X2) X3 X4 = k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 X0) (k1_ring_1 \\
& X0 X1) (k3_rlvect_1 X0 X5 X6)))))) \wedge (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 X2)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 \\
& X2)) \Rightarrow (\exists X5.(m1_subset_1 X5 (u1_struct_0 X0)) \wedge (\exists X6. \\
& (m1_subset_1 X6 (u1_struct_0 X0)) \wedge ((X3 = k6_eqrel_1 (u1_struct_0 \\
& X0) (u1_struct_0 X0) (k1_ring_1 X0 X1) X5) \wedge ((X4 = k6_eqrel_1 (u1_struct_0 \\
& X0) (u1_struct_0 X0) (k1_ring_1 X0 X1) X6) \wedge (k5_binop_1 (u1_struct_0 \\
& X2) (u2_algstr_0 X2) X3 X4 = k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 \\
& X0) (k1_ring_1 X0 X1) (k6_algstr_0 X0 X5 X6))))))))))))) \tag{2}
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_group_1 \\
& X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge \\
& ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v1_ideal_1 X1 X0) \wedge ((v2_ideal_1 \\
& X1 X0) \wedge ((v3_ideal_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))) \Rightarrow (k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 X0) (k1_ring_1 \\
& X0 X1) (k5_struct_0 X0) = k5_struct_0 (k2_ring_1 X0 X1)))
\end{aligned}$$