

t13_ringcat1

(TMM3fa6W6tzj5DA7ndVKgrJFYhAVQ7QbeeY)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. 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 $m4_ringcat1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_ringcat1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_ringcat1 : \iota \Rightarrow o$ be given. Let $m3_ringcat1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_ringcat1 : \iota \Rightarrow o$ be given. Let $v3_ringcat1 : \iota \Rightarrow o$ be given. Let $l1_ringcat1 : \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v1_xboole_0 X0) \wedge (v5_ringcat1 X0)) \Rightarrow (\forall X1. \\ (m3_ringcat1 X1 X0) \Leftrightarrow (m1_subset_1 X1 X0)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge \\ ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 \\ X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \wedge \\ ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((\\ v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v3_group_1 X1) \wedge ((v4_vectsp_1 \\ X1) \wedge ((v5_vectsp_1 X1) \wedge (l6_algstr_0 X1)))))))))) \Rightarrow (\forall X2. \\ (m4_ringcat1 X2 X0 X1) \Rightarrow ((\neg v1_xboole_0 X2) \wedge (v5_ringcat1 X2))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge \\ ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 \\ X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \wedge \\ ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((\\ v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v3_group_1 X1) \wedge ((v4_vectsp_1 \\ X1) \wedge ((v5_vectsp_1 X1) \wedge (l6_algstr_0 X1)))))))))) \Rightarrow (\forall X2. \\ (m1_ringcat1 X2 X0 X1) \Rightarrow ((v2_ringcat1 X2) \wedge ((v3_ringcat1 X2) \wedge (\\ l1_ringcat1 X2)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 \\
& X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v3_group_1 X1) \wedge (\\
& (v4_vectsp_1 X1) \wedge ((v5_vectsp_1 X1) \wedge (l6_algstr_0 X1)))))))) \Rightarrow \\
& (\forall X2.((\neg v1_xboole_0 X2) \wedge (v5_ringcat1 X2)) \Rightarrow ((m4_ringcat1 \\
& X2 X0 X1) \Leftrightarrow (\forall X3.(m3_ringcat1 X3 X2) \Rightarrow (m1_ringcat1 X3 X0 X1))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(v5_ringcat1 X0) \Leftrightarrow (\forall X1.(X1 \in X0) \Rightarrow ((v2_ringcat1 X1) \wedge ((v3_ringcat1 X1) \wedge (l1_ringcat1 X1)))) \tag{6}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 \\
& X1) \wedge ((v3_group_1 X1) \wedge ((v4_vectsp_1 X1) \wedge ((v5_vectsp_1 X1) \wedge (\\
& l6_algstr_0 X1)))))))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge ((v13_algstr_0 \\
& X2) \wedge ((v2_rlvect_1 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge \\
& ((v3_group_1 X2) \wedge ((v4_vectsp_1 X2) \wedge ((v5_vectsp_1 X2) \wedge (l6_algstr_0 \\
& X2)))))))) \Rightarrow ((m4_ringcat1 X0 X1 X2) \Leftrightarrow (\forall X3.(m1_subset_1 \\
& X3 X0) \Rightarrow (m1_ringcat1 X3 X1 X2))))))
\end{aligned}$$