

t22_ringcat1

(TMRjAkgGwXzfLzk2do6N7c3Q1C3fvWyXKka)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_classes2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k17_ringcat1 : \iota \Rightarrow \iota$ be given. Let $m3_ringcat1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_ringcat1 : \iota \Rightarrow \iota$ be given. Let $k9_ringcat1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m2_ringcat1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_ringcat1 : \iota \Rightarrow o$ be given. Let $v36_algstr_0 : \iota \Rightarrow o$ 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 $v5_ringcat1 : \iota \Rightarrow o$ be given. Let $v4_ringcat1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g1_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v1_cat_1 : \iota \Rightarrow o$ be given. Let $l1_cat_1 : \iota \Rightarrow o$ be given. Let $k16_ringcat1 : \iota \Rightarrow \iota$ be given. Let $k15_ringcat1 : \iota \Rightarrow \iota$ be given. Let $k14_ringcat1 : \iota \Rightarrow \iota$ be given. Let $v3_ringcat1 : \iota \Rightarrow o$ be given. Let $l1_ringcat1 : \iota \Rightarrow o$ be given. Let $u1_graph_1 : \iota \Rightarrow \iota$ be given. Let $u2_graph_1 : \iota \Rightarrow \iota$ be given. Let $u1_cat_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (k9_ringcat1 X0)) \Rightarrow ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 \\ & X1) \wedge ((v36_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge \\ & ((v4_rlvect_1 X1) \wedge ((v3_group_1 X1) \wedge ((v4_vectsp_1 X1) \wedge ((v5_vectsp_1 \\ & X1) \wedge (l6_algstr_0 X1)))))))))) \quad (2) \end{aligned}$$

Assume the following.

$$\forall X0. ((\neg v1_xboole_0 X0) \wedge (v5_ringcat1 X0)) \Rightarrow (\forall X1. (m3_ringcat1 X1 X0) \Leftrightarrow (m1_subset_1 X1 X0)) \quad (3)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v4_ringcat1 X0)) \Rightarrow (\forall X1. (m2_ringcat1 X1 X0) \Leftrightarrow (m1_subset_1 X1 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X1 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \wedge (((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X1 X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \wedge ((v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X1 X1) X1)))))) \Rightarrow (\forall X5. \\ & \forall X6. \forall X7. \forall X8. \forall X9. (g1_cat_1 X0 X1 X2 X3 X4 = g1_cat_1 X5 X6 X7 X8 X9) \Rightarrow ((X0 = X5) \wedge ((X1 = X6) \wedge ((X2 = X7) \wedge ((X3 = X8) \wedge (X4 = X9))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow ((\neg v2_struct_0 (k17_ringcat1 X0)) \wedge ((\neg v11_struct_0 (k17_ringcat1 X0)) \wedge (v1_cat_1 (k17_ringcat1 X0)))) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (v4_ringcat1 (k9_ringcat1 X0)) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (\neg v1_xboole_0 (k9_ringcat1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (l1_cat_1 (k17_ringcat1 X0)) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v4_ringcat1 X0)) \Rightarrow ((v1_funct_1 (k16_ringcat1 X0)) \wedge (m1_subset_1 (k16_ringcat1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k10_ringcat1 X0) (k10_ringcat1 X0)) (k10_ringcat1 X0)))))) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v4_ringcat1 X0)) \Rightarrow ((v1_funct_1 (k15_ringcat1 X0)) \wedge ((v1_funct_2 (k15_ringcat1 X0) (k10_ringcat1 X0) X0) \wedge (m1_subset_1 (k15_ringcat1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k10_ringcat1 X0) X0)))))) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v4_ringcat1 X0)) \Rightarrow ((v1_funct_1 (k14_ringcat1 X0)) \wedge ((v1_funct_2 (k14_ringcat1 X0) (k10_ringcat1 X0) X0) \wedge (m1_subset_1 (k14_ringcat1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k10_ringcat1 X0) X0)))))) \quad (12)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v4_ringcat1 X0)) \Rightarrow ((\neg v1_xboole_0 (k10_ringcat1 X0)) \wedge (v5_ringcat1 (k10_ringcat1 X0))) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (k17_ringcat1 X0 = g1_cat_1 (k9_ringcat1 X0) (k10_ringcat1 (k9_ringcat1 X0)) (k14_ringcat1 (k9_ringcat1 X0)) (k15_ringcat1 (k9_ringcat1 X0)) (k16_ringcat1 (k9_ringcat1 X0))) \quad (14)$$

Assume the following.

$$\forall X0.(v5_ringcat1 X0) \Leftrightarrow (\forall X1.(X1 \in X0) \Rightarrow ((v2_ringcat1 X1) \wedge ((v3_ringcat1 X1) \wedge (l1_ringcat1 X1)))) \quad (15)$$

Assume the following.

$$\forall X0.(l1_cat_1 X0) \Rightarrow ((v1_cat_1 X0) \Rightarrow (X0 = g1_cat_1 (u1_struct_0 X0) (u4_struct_0 X0) (u1_graph_1 X0) (u2_graph_1 X0) (u1_cat_1 X0))) \quad (16)$$

Theorem 1

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (\forall X1. (m1_subset_1 X1 (u4_struct_0 (k17_ringcat1 X0))) \Rightarrow (\forall X2. (m3_ringcat1 X2 (k10_ringcat1 (k9_ringcat1 X0))) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 (k17_ringcat1 X0))) \Rightarrow (\forall X4. (m2_ringcat1 X4 (k9_ringcat1 X0)) \Rightarrow (((v2_ringcat1 X1) \wedge (m3_ringcat1 X1 (k10_ringcat1 (k9_ringcat1 X0)))) \wedge ((m1_subset_1 X2 (u4_struct_0 (k17_ringcat1 X0))) \wedge (((v36_algstr_0 X3) \wedge (m2_ringcat1 X3 (k9_ringcat1 X0))) \wedge (m1_subset_1 X4 (u1_struct_0 (k17_ringcat1 X0)))))))))))$$