

t30_grcat_1 (TMRyAXkuipH- nysPq3AhMfPNMzGXDrym9E5z)

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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 $k17_grcat_1 : \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v8_algstr_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $r1_grcat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_xtuple_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k5_vectsp_1 : \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (\neg v1_xboole_0 (k17_grcat_1 X0)) \quad (1)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (\forall X1. (X1 = k17_grcat_1 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.(X3 \in X0) \wedge (r1_grcat_1 X3 X2)))) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (r1_grcat_1 X0 X1) \Leftrightarrow (\exists X2. \exists X3. \\ & \exists X4. \exists X5. (X0 = k6_xtuple_0 X2 X3 X4 X5) \wedge (\exists X6. \\ & ((\neg v2_struct_0 X6) \wedge (v8_algstr_0 X6) \wedge (v13_algstr_0 X6) \wedge (\\ & v3_rlvect_1 X6) \wedge (v4_rlvect_1 X6) \wedge (l2_algstr_0 X6)))) \wedge (\\ & X1 = X6) \wedge ((X2 = u1_struct_0 X6) \wedge ((X3 = u1_algstr_0 X6) \wedge ((X4 = k5_vectsp_1 \\ & X6) \wedge (X5 = k4_struct_0 X6)))))) \end{aligned} \quad (3)$$

Assume the following.

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

Theorem 1

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (\forall X1. \\ (m1_subset_1 X1 (k17_grcat_1 X0)) \Rightarrow ((\neg v2_struct_0 X1) \wedge ((v8_algstr_0 \\ X1) \wedge ((v13_algstr_0 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\ (l2_algstr_0 X1)))))))$$