

t31_ens_1

(TMPgMwana7T6ZuvFgMuPt1KZ2Gf65c1Lray)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k11_ens_1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v11_cat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v1_cat_1 : \iota \Rightarrow o$ be given. Let $v2_cat_1 : \iota \Rightarrow o$ be given. Let $v3_cat_1 : \iota \Rightarrow o$ be given. Let $v4_cat_1 : \iota \Rightarrow o$ be given. Let $v5_cat_1 : \iota \Rightarrow o$ be given. Let $v6_cat_1 : \iota \Rightarrow o$ be given. Let $k12_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_cat_1 : \iota \Rightarrow o$ be given. Let $m1_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1_xboole_0 X0) \wedge ((X0 \neq X1) \wedge (v1_xboole_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ (k11_ens_1 X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 (k11_ens_1 \\ X0))) \Rightarrow (\neg(k2_cat_1 (k11_ens_1 X0) X1 X2 \neq k1_xboole_0) \wedge (k1_funct_2 \\ (k13_ens_1 X0 X1) (k13_ens_1 X0 X2) = k1_xboole_0)))))) \quad (3) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0. (\neg v1_xboole_0 X0) \Rightarrow ((\neg v2_struct_0 (k11_ens_1 X0)) \wedge \\ ((\neg v11_struct_0 (k11_ens_1 X0)) \wedge (v1_cat_1 (k11_ens_1 X0)) \wedge \\ ((v2_cat_1 (k11_ens_1 X0)) \wedge (v3_cat_1 (k11_ens_1 X0)) \wedge (v4_cat_1 \\ (k11_ens_1 X0)) \wedge (v5_cat_1 (k11_ens_1 X0)) \wedge (v6_cat_1 (k11_ens_1 \\ X0)))))) \quad (4) \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (v1_xboole_0 X1)) \Rightarrow (v1_xboole_0 (k1_funct_2 X0 X1)) \quad (5)$$

Assume the following.

$$v1_xboole_0 \ k1_xboole_0 \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 \ X0)\wedge(m1_subset_1 \ X1 \ X0))\Rightarrow (m1_subset_1 \ (k12_ens_1 \ X0 \ X1) \ (u1_struct_0 \ (k11_ens_1 \ X0))) \tag{7}$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 \ X0)\Rightarrow((\neg v2_struct_0 \ (k11_ens_1 \ X0))\wedge ((\neg v11_struct_0 \ (k11_ens_1 \ X0))\wedge((v1_cat_1 \ (k11_ens_1 \ X0))\wedge (l1_cat_1 \ (k11_ens_1 \ X0)))))) \tag{8}$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 \ X0)\wedge((\neg v11_struct_0 \ X0)\wedge((v2_cat_1 \ X0)\wedge((v3_cat_1 \ X0)\wedge((v4_cat_1 \ X0)\wedge((v5_cat_1 \ X0)\wedge((v6_cat_1 \ X0)\wedge(l1_cat_1 \ X0))))))))))\Rightarrow(\forall X1.(m1_subset_1 \ X1 \ (u1_struct_0 \ X0))\Rightarrow((v11_cat_1 \ X1 \ X0)\Leftrightarrow(\forall X2.(m1_subset_1 \ X2 \ (u1_struct_0 \ X0))\Rightarrow((k2_cat_1 \ X0 \ X1 \ X2\neq k1_xboole_0)\wedge(\exists X3.(m1_cat_1 \ X3 \ X0 \ X1 \ X2)\wedge(\forall X4.(m1_cat_1 \ X4 \ X0 \ X1 \ X2)\Rightarrow(X3 = X4))))))) \tag{9}$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 \ X0)\Rightarrow(\forall X1.(m1_subset_1 \ X1 \ (u1_struct_0 \ (k11_ens_1 \ X0)))\Rightarrow(k13_ens_1 \ X0 \ X1 = X1)) \tag{10}$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 \ X0)\Rightarrow(\forall X1.(m1_subset_1 \ X1 \ X0)\Rightarrow (k12_ens_1 \ X0 \ X1 = X1)) \tag{11}$$

Theorem 1

$$\forall X0.(\neg v1_xboole_0 \ X0)\Rightarrow(\forall X1.(m1_subset_1 \ X1 \ (u1_struct_0 \ (k11_ens_1 \ X0)))\Rightarrow(((k1_xboole_0 \in X0)\wedge(v11_cat_1 \ X1 \ (k11_ens_1 \ X0)))\Rightarrow(X1 = k1_xboole_0)))$$