

t29_ens_1

(TMcYsVrjBE1e1deHGwdUriBoC6pWMqUkabJ)

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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 $k4_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_graph_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_graph_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_ens_1 : \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ 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 $l1_cat_1 : \iota \Rightarrow o$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ be given. Let $v1_cat_1 : \iota \Rightarrow o$ be given. Let $m1_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 \\ (k11_ens_1 X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u4_struct_0 (k11_ens_1 \\ X0))) \Rightarrow ((k3_graph_1 (k11_ens_1 X0) X1 = k4_graph_1 (k11_ens_1 X0) \\ X2) \Rightarrow (k1_cat_1 (k11_ens_1 X0) X2 X1 = k6_ens_1 X0 (k15_ens_1 X0 X2) \\ (k15_ens_1 X0 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 \\ (k11_ens_1 X0))) \Rightarrow ((k3_graph_1 (k11_ens_1 X0) X1 = k3_ens_1 X0 (\\ k15_ens_1 X0 X1)) \wedge (k4_graph_1 (k11_ens_1 X0) X1 = k4_ens_1 X0 (k15_ens_1 \\ X0 X1)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 \\ (k11_ens_1 X0))) \Rightarrow (m1_subset_1 X1 (k2_ens_1 X0))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k2_ens_1 \\ X0)) \Rightarrow (m1_subset_1 X1 (u4_struct_0 (k11_ens_1 X0)))) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 (k11_ens_1 X0))) \Rightarrow (m1_subset_1 X1 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 X0) \wedge (l1_cat_1 X0)))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u4_struct_0 X0)) \Rightarrow ((k3_graph_1 X0 X2 = X1) \Rightarrow (k1_cat_1 X0 (k4_cat_1 X0 X1) X2 = X2)))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k2_ens_1 X0)) \Rightarrow ((k6_ens_1 X0 (k5_ens_1 X0 (k3_ens_1 X0 X1)) X1 = X1) \wedge (k6_ens_1 X0 X1 (k5_ens_1 X0 (k4_ens_1 X0 X1)) = X1))) \quad (7)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow ((k2_xtuple_0 (k5_ens_1 X0 X1) = k6_partfun1 X1) \wedge ((k3_ens_1 X0 (k5_ens_1 X0 X1) = X1) \wedge (k4_ens_1 X0 (k5_ens_1 X0 X1) = X1)))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 X0) \wedge (l1_cat_1 X0)))))))) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow (k4_graph_1 X0 (k4_cat_1 X0 X1) = X1) \quad (9)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow (((\neg v2_struct_0 (k11_ens_1 X0)) \wedge ((\neg v11_struct_0 (k11_ens_1 X0)) \wedge ((v1_cat_1 (k11_ens_1 X0)) \wedge ((v2_cat_1 (k11_ens_1 X0)) \wedge ((v3_cat_1 (k11_ens_1 X0)) \wedge ((v4_cat_1 (k11_ens_1 X0)) \wedge ((v5_cat_1 (k11_ens_1 X0)) \wedge (v6_cat_1 (k11_ens_1 X0)))))))))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_cat_1 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (\forall X3.(m1_cat_1 X3 X0 X1 X2) \Rightarrow (m1_subset_1 X3 (u4_struct_0 X0))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 X0)) \Rightarrow (m1_subset_1 (k5_ens_1 X0 X1) (k2_ens_1 X0)) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge(\neg v11_struct_0 X0)\wedge \\ ((v5_cat_1 X0)\wedge((v6_cat_1 X0)\wedge(l1_cat_1 X0)))))\wedge(m1_subset_1 \\ X1 (u1_struct_0 X0))\Rightarrow(m1_cat_1 (k4_cat_1 X0 X1) X0 X1 X1) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow((\neg v2_struct_0 (k11_ens_1 X0))\wedge \\ ((\neg v11_struct_0 (k11_ens_1 X0))\wedge((v1_cat_1 (k11_ens_1 X0))\wedge \\ (l1_cat_1 (k11_ens_1 X0)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (u4_struct_0 \\ (k11_ens_1 X0))\Rightarrow(k15_ens_1 X0 X1 = X1)) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ (k11_ens_1 X0))\Rightarrow(k13_ens_1 X0 X1 = X1)) \end{aligned} \quad (16)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ (k11_ens_1 X0))\Rightarrow(k4_cat_1 (k11_ens_1 X0) X1 = k5_ens_1 X0 (k13_ens_1 \\ X0 X1))) \end{aligned}$$