

t65_ens_1

(TMa5zLeeQBrNKPW3CsJUurwXdk27oVWB7vT)

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Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k16_ens_1 : \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k11_ens_1 : \iota \Rightarrow \iota$ be given. Let $k12_cat_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_oppcat_1 : \iota \Rightarrow \iota$ be given. Let $k25_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_oppcat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k23_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_5 : \iota \Rightarrow \iota$ be given. Let $k22_ens_1 : \iota \Rightarrow \iota$ be given. Let $k20_ens_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_5 : \iota \Rightarrow \iota$ 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 $v1_cat_1 : \iota \Rightarrow o$ be given. Let $m2_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_cat_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (k4_cat_1 X0 X1 = k4_cat_1 (k2_oppcat_1 X0) (k3_oppcat_1 X0 \\ & X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow ((k19_ens_1 X0 X1 = k1_funct_1 (k1_funct_5 (k22_ens_1 X0)) \\ & (k4_cat_1 X0 X1)) \wedge (k20_ens_1 X0 X1 = k1_funct_1 (k3_funct_5 (k22_ens_1 \\ & X0)) (k4_cat_1 X0 X1)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X2)\wedge \\ & ((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1))))\wedge((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 X1)\wedge(m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((r2_funct_2 X0 X1 X2 \\ & X3)\Leftrightarrow(X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge((v2_cat_1 \\ & X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge((v6_cat_1 \\ & X0)\wedge(l1_cat_1 X0))))))))\Rightarrow((\neg v2_struct_0 (k2_oppcat_1 X0))\wedge \\ & ((\neg v11_struct_0 (k2_oppcat_1 X0))\wedge((v1_cat_1 (k2_oppcat_1 X0))\wedge \\ & ((v2_cat_1 (k2_oppcat_1 X0))\wedge((v3_cat_1 (k2_oppcat_1 X0))\wedge(\\ & (v4_cat_1 (k2_oppcat_1 X0))\wedge((v5_cat_1 (k2_oppcat_1 X0))\wedge(v6_cat_1 \\ & (k2_oppcat_1 X0)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge \\ & ((v2_cat_1 X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge \\ & ((v6_cat_1 X0)\wedge(l1_cat_1 X0))))))))\wedge((\neg v2_struct_0 X1)\wedge((\neg \\ & v11_struct_0 X1)\wedge((v2_cat_1 X1)\wedge((v3_cat_1 X1)\wedge((v4_cat_1 X1)\wedge \\ & ((v5_cat_1 X1)\wedge((v6_cat_1 X1)\wedge(l1_cat_1 X1))))))))\Rightarrow(\forall X2. \\ & (m2_cat_1 X2 X0 X1)\Rightarrow((v1_funct_1 X2)\wedge((v1_funct_2 X2 (u4_struct_0 \\ & X0) (u4_struct_0 X1))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (u4_struct_0 X0) (u4_struct_0 X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge \\ & ((v2_cat_1 X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge \\ & ((v6_cat_1 X0)\wedge(l1_cat_1 X0))))))))\wedge(m1_subset_1 X1 (u1_struct_0 \\ & X0))\Rightarrow(m1_subset_1 (k3_oppcat_1 X0 X1) (u1_struct_0 (k2_oppcat_1 \\ & X0))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0)))))))) \Rightarrow ((\neg v2_struct_0 (k2_oppcat_1 X0)) \wedge \\ & ((\neg v11_struct_0 (k2_oppcat_1 X0)) \wedge ((v1_cat_1 (k2_oppcat_1 X0)) \wedge \\ & (l1_cat_1 (k2_oppcat_1 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v2_struct_0 X1) \wedge \\ & ((\neg v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 X1) \wedge ((v4_cat_1 \\ & X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 X1)))))))))) \Rightarrow (m2_cat_1 \\ & (k25_ens_1 X0 X1) (k8_cat_2 (k2_oppcat_1 X1) X1) (k11_ens_1 X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((\neg v2_struct_0 \\ & X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 \\ & X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 X0) \wedge (l1_cat_1 X0)))))))))) \wedge (((\\ & \neg v2_struct_0 X1) \wedge ((\neg v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 \\ & X1) \wedge ((v4_cat_1 X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 \\ & X1)))))))))) \wedge (((\neg v2_struct_0 X2) \wedge ((\neg v11_struct_0 X2) \wedge ((v2_cat_1 \\ & X2) \wedge ((v3_cat_1 X2) \wedge ((v4_cat_1 X2) \wedge ((v5_cat_1 X2) \wedge ((v6_cat_1 \\ & X2) \wedge (l1_cat_1 X2)))))))))) \wedge ((m2_cat_1 X3 (k8_cat_2 X0 X1) X2) \wedge (\\ & m1_subset_1 X4 (u1_struct_0 X0)))))) \Rightarrow (m2_cat_1 (k12_cat_2 X0 \\ & X1 X2 X3 X4) X1 X2) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow ((\neg v2_struct_0 (k11_ens_1 X0)) \wedge \\ & ((\neg v11_struct_0 (k11_ens_1 X0)) \wedge ((v1_cat_1 (k11_ens_1 X0)) \wedge \\ & (l1_cat_1 (k11_ens_1 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0)))))))))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((\\ & \neg v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 X1) \wedge ((v4_cat_1 \\ & X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 X1)))))))))) \Rightarrow (\forall X2. \\ & ((\neg v2_struct_0 X2) \wedge ((\neg v11_struct_0 X2) \wedge ((v2_cat_1 X2) \wedge ((v3_cat_1 \\ & X2) \wedge ((v4_cat_1 X2) \wedge ((v5_cat_1 X2) \wedge ((v6_cat_1 X2) \wedge (l1_cat_1 \\ & X2)))))))))) \Rightarrow (\forall X3. (m2_cat_1 X3 (k8_cat_2 X0 X1) X2) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 (u1_struct_0 X0) \Rightarrow (k12_cat_2 X0 X1 X2 X3 X4 = k1_funct_1 \\ & (k1_funct_5 X3) (k4_cat_1 X0 X4)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\ ((\neg v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 X1) \wedge ((v4_cat_1 \\ X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 X1)))))))) \Rightarrow ((r1_tarSKI \\ (k16_ens_1 X1) X0) \Rightarrow (k25_ens_1 X0 X1 = k22_ens_1 X1))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\ ((\neg v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 X1) \wedge ((v4_cat_1 \\ X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 X1)))))))) \Rightarrow (\forall X2. \quad (14) \\ (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow ((r1_tarSKI (k16_ens_1 X1) \\ X0) \Rightarrow (k23_ens_1 X0 X1 X2 = k19_ens_1 X1 X2)))) \end{aligned}$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\ ((\neg v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 X1) \wedge ((v4_cat_1 \\ X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 X1)))))))) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow ((r1_tarSKI (k16_ens_1 X1) \\ X0) \Rightarrow (r2_funct_2 (u4_struct_0 X1) (u4_struct_0 (k11_ens_1 X0)) \\ (k12_cat_2 (k2_oppcat_1 X1) X1 (k11_ens_1 X0) (k25_ens_1 X0 X1) \\ (k3_oppcat_1 X1 X2)) (k23_ens_1 X0 X1 X2)))))) \end{aligned}$$