

l78_ens_1

(TMWNIv7HjgSpUJ5y4yJWs7mXkx3ey9LwAfr)

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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 $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_ens_1 : \iota \Rightarrow \iota$ be given. Let $k16_ens_1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_ens_1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $g1_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_ens_1 : \iota \Rightarrow \iota$ be given. Let $k8_ens_1 : \iota \Rightarrow \iota$ be given. Let $k10_ens_1 : \iota \Rightarrow \iota$ be given. Let $v1_cat_1 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ 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.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1_funct_1 X3) \wedge \\ & ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))) \Rightarrow ((r1_tarski X1 X2) \Rightarrow (((X1 = k1_xboole_0) \wedge (X0 \neq k1_xboole_0)) \vee \\ & ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X2))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0))) \Rightarrow (r1_tarski (k2_ens_1 X1) (\\ & k2_ens_1 X0))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((v1_funct_1 \\
& X2)\wedge((v1_funct_2 X2 X1 X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X1 X0)))))\wedge(((v1_funct_1 X3)\wedge((v1_funct_2 X3 X1 X0)\wedge(m1_subset_1 \\
& X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 \\
& X4 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X1 X1) X1))))))\Rightarrow(\forall X5. \\
& \forall X6.\forall X7.\forall X8.\forall X9.(g1_cat_1 X0 X1 X2 \\
& X3 X4 = g1_cat_1 X5 X6 X7 X8 X9)\Rightarrow((X0 = X5)\wedge((X1 = X6)\wedge((X2 = X7)\wedge((X3 = \\
& X8)\wedge(X4 = X9))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge((v2_cat_1 \\
& X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge((v6_cat_1 \\
& X0)\wedge(l1_cat_1 X0))))))))\Rightarrow(\neg v1_xboole_0 (k16_ens_1 X0))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\neg v1_xboole_0 (k2_ens_1 X0)) \tag{6}$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0)\Rightarrow((v1_funct_1 (k9_ens_1 X0))\wedge((\\
& v1_funct_2 (k9_ens_1 X0) (k2_ens_1 X0) X0)\wedge(m1_subset_1 (k9_ens_1 \\
& X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_ens_1 X0) X0))))))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0)\Rightarrow((v1_funct_1 (k8_ens_1 X0))\wedge((\\
& v1_funct_2 (k8_ens_1 X0) (k2_ens_1 X0) X0)\wedge(m1_subset_1 (k8_ens_1 \\
& X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_ens_1 X0) X0))))))
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0)\Rightarrow((v1_funct_1 (k10_ens_1 X0))\wedge(\\
& m1_subset_1 (k10_ens_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& (k2_ens_1 X0) (k2_ens_1 X0)) (k2_ens_1 X0))))))
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((v1_funct_1 \\
& X2)\wedge((v1_funct_2 X2 X1 X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X1 X0)))))\wedge(((v1_funct_1 X3)\wedge((v1_funct_2 X3 X1 X0)\wedge(m1_subset_1 \\
& X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 \\
& X4 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X1 X1) X1))))))\Rightarrow((v1_cat_1 \\
& (g1_cat_1 X0 X1 X2 X3 X4))\wedge(l1_cat_1 (g1_cat_1 X0 X1 X2 X3 X4)))
\end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow (k11_ens_1 X0 = g1_cat_1 X0 (k2_ens_1 X0) (k8_ens_1 X0) (k9_ens_1 X0) (k10_ens_1 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (13)$$

Assume the following.

$$\forall X0.(l1_cat_1 X0) \Rightarrow ((v1_cat_1 X0) \Rightarrow (X0 = g1_cat_1 (u1_struct_0 X0) (u4_struct_0 X0) (u1_graph_1 X0) (u2_graph_1 X0) (u1_cat_1 X0))) \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\ & ((\neg v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 X1) \wedge ((v4_cat_1 \\ & X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 X1))))))) \Rightarrow (\forall X2. \\ & ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u4_struct_0 X1) (k2_ens_1 (\\ & k16_ens_1 X1))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 \\ & X1) (k2_ens_1 (k16_ens_1 X1))))))) \Rightarrow ((r1_tarski (k16_ens_1 X1) \\ & X0) \Rightarrow ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u4_struct_0 X1) (u4_struct_0 \\ & (k11_ens_1 X0))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (\\ & u4_struct_0 X1) (u4_struct_0 (k11_ens_1 X0)))))))))) \end{aligned}$$