

t25_index_1

(TMc9jkZxdeBYdGKt36jEvoFLUMUKN9djeP5)

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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 $m2_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m5_index_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ 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. Let $k7_isocat_1 : \iota \Rightarrow \iota$ be given. Let $m4_index_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m3_cat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_index_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14_index_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_cat_5 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $l5_struct_0 : \iota \Rightarrow o$ be given. Let $l1_graph_1 : \iota \Rightarrow o$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m3_index_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\
 & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\
 & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((\neg \\
 & v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 X1) \wedge ((v4_cat_1 \\
 & X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 X1))))))) \Rightarrow (\forall X2. \\
 & (m2_cat_1 X2 X0 X1) \Rightarrow (\forall X3. (m5_index_1 X3 (u1_struct_0 X1) \\
 & (u4_struct_0 X1) (u1_graph_1 X1) (u2_graph_1 X1) (u1_cat_1 X1) \\
 & (k7_isocat_1 X1)) \Rightarrow (\forall X4. (m4_index_1 X4 (u1_struct_0 X1) \\
 & (u4_struct_0 X1) (u1_graph_1 X1) (u2_graph_1 X1) X3) \Rightarrow (m4_index_1 \\
 & X4 (u1_struct_0 X0) (u4_struct_0 X0) (u1_graph_1 X0) (u2_graph_1 \\
 & X0) (k14_index_1 X0 X1 X1 X2 X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1.(m5_index_1 X1 (u1_struct_0 \\ X0) (u4_struct_0 X0) (u1_graph_1 X0) (u2_graph_1 X0) (u1_cat_1 \\ X0) (k7_isocat_1 X0)) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge ((\neg v11_struct_0 \\ X2) \wedge ((v2_cat_1 X2) \wedge ((v3_cat_1 X2) \wedge ((v4_cat_1 X2) \wedge ((v5_cat_1 \\ X2) \wedge ((v6_cat_1 X2) \wedge ((v3_cat_5 X2) \wedge (l1_cat_1 X2)))))))))) \Rightarrow ((\\ m3_cat_2 (k10_index_1 X0 X1) X2) \Leftrightarrow (m4_index_1 X2 (u1_struct_0 X0) \\ (u4_struct_0 X0) (u1_graph_1 X0) (u2_graph_1 X0) X1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 \\ (u1_struct_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0.((\neg v11_struct_0 X0) \wedge (l5_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 \\ (u4_struct_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l1_graph_1 X0) \Rightarrow ((v1_funct_1 (u2_graph_1 X0)) \wedge ((\\ v1_funct_2 (u2_graph_1 X0) (u4_struct_0 X0) (u1_struct_0 X0)) \wedge \\ (m1_subset_1 (u2_graph_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 \\ X0) (u1_struct_0 X0)))))) \quad (5)$$

Assume the following.

$$\forall X0.(l1_graph_1 X0) \Rightarrow ((v1_funct_1 (u1_graph_1 X0)) \wedge ((\\ v1_funct_2 (u1_graph_1 X0) (u4_struct_0 X0) (u1_struct_0 X0)) \wedge \\ (m1_subset_1 (u1_graph_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 \\ X0) (u1_struct_0 X0)))))) \quad (6)$$

Assume the following.

$$\forall X0.(l1_cat_1 X0) \Rightarrow ((v1_funct_1 (u1_cat_1 X0)) \wedge (m1_subset_1 \\ (u1_cat_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 \\ X0) (u4_struct_0 X0)) (u4_struct_0 X0)))))) \quad (7)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\
& ((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 X1 X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))))))\wedge(((v1_funct_1 X3)\wedge((v1_funct_2 X3 X1 X0)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))))))\wedge(((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X1 X1) X1))))\wedge((v1_funct_1 X5)\wedge((v1_funct_2 X5 X0 X1)\wedge(m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))))))\Rightarrow(\forall X6.(m5_index_1 X6 X0 X1 X2 X3 X4 X5)\Rightarrow(m3_index_1 X6 X0 X1 X2 X3))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 X1 X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))))))\wedge(((v1_funct_1 X3)\wedge((v1_funct_2 X3 X1 X0)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))))))\wedge(m3_index_1 X4 X0 X1 X2 X3))))\Rightarrow(\forall X5.(m4_index_1 X5 X0 X1 X2 X3 X4)\Rightarrow((\neg v2_struct_0 X5)\wedge((\neg v11_struct_0 X5)\wedge((v2_cat_1 X5)\wedge((v3_cat_1 X5)\wedge((v4_cat_1 X5)\wedge((v5_cat_1 X5)\wedge((v6_cat_1 X5)\wedge((v3_cat_5 X5)\wedge(l1_cat_1 X5))))))))))
\end{aligned} \tag{9}$$

Assume the following.

$$\forall X0.(l5_struct_0 X0)\Rightarrow(l1_struct_0 X0) \tag{10}$$

Assume the following.

$$\forall X0.(l1_graph_1 X0)\Rightarrow(l5_struct_0 X0) \tag{11}$$

Assume the following.

$$\forall X0.(l1_cat_1 X0)\Rightarrow(l1_graph_1 X0) \tag{12}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge((v2_cat_1 X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge((v6_cat_1 X0)\wedge(l1_cat_1 X0))))))))\Rightarrow((v1_funct_1 (k7_isocat_1 X0))\wedge((v1_funct_2 (k7_isocat_1 X0) (u1_struct_0 X0) (u4_struct_0 X0))\wedge(m1_subset_1 (k7_isocat_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u4_struct_0 X0))))))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2_struct_0 \\
& X0)\wedge((\neg v11_struct_0 X0)\wedge((v2_cat_1 X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 \\
& X0)\wedge((v5_cat_1 X0)\wedge((v6_cat_1 X0)\wedge(l1_cat_1 X0))))))\wedge(((\\
& \neg v2_struct_0 X1)\wedge((\neg v11_struct_0 X1)\wedge((v2_cat_1 X1)\wedge((v3_cat_1 \\
& X1)\wedge((v4_cat_1 X1)\wedge((v5_cat_1 X1)\wedge((v6_cat_1 X1)\wedge(l1_cat_1 \\
& X1))))))\wedge(((\neg v2_struct_0 X2)\wedge((\neg v11_struct_0 X2)\wedge((v2_cat_1 \\
& X2)\wedge((v3_cat_1 X2)\wedge((v4_cat_1 X2)\wedge((v5_cat_1 X2)\wedge((v6_cat_1 \\
& X2)\wedge(l1_cat_1 X2))))))\wedge((m2_cat_1 X3 X0 X1)\wedge(m5_index_1 X4 \\
& (u1_struct_0 X2) (u4_struct_0 X2) (u1_graph_1 X2) (u2_graph_1 \\
& X2) (u1_cat_1 X2) (k7_isocat_1 X2))))))\Rightarrow(m5_index_1 (k14_index_1 \\
& X0 X1 X2 X3 X4) (u1_struct_0 X0) (u4_struct_0 X0) (u1_graph_1 X0) \\
& (u2_graph_1 X0) (u1_cat_1 X0) (k7_isocat_1 X0))
\end{aligned} \tag{14}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge((v2_cat_1 \\
& X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge((v6_cat_1 \\
& X0)\wedge(l1_cat_1 X0))))))\wedge(((\neg v2_struct_0 X1)\wedge((\\
& \neg v11_struct_0 X1)\wedge((v2_cat_1 X1)\wedge((v3_cat_1 X1)\wedge((v4_cat_1 \\
& X1)\wedge((v5_cat_1 X1)\wedge((v6_cat_1 X1)\wedge(l1_cat_1 X1))))))\wedge(((\\
& m2_cat_1 X2 X0 X1)\wedge(m5_index_1 X3 (u1_struct_0 X1) \\
& (u4_struct_0 X1) (u1_graph_1 X1) (u2_graph_1 X1) (u1_cat_1 X1) \\
& (k7_isocat_1 X1)\wedge(m4_index_1 X4 (u1_struct_0 X1) \\
& (u4_struct_0 X1) (u1_graph_1 X1) (u2_graph_1 X1) X3)\wedge(m3_cat_2 \\
& (k10_index_1 X0 (k14_index_1 X0 X1 X1 X2 X3)) X4))))))
\end{aligned}$$