

t35_nattra_1

(TMZV6YvvxsPQyTNmz68eMcge7H6tDQoMRrA)

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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 $m2_nattra_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k11_nattra_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_cat_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $u1_cat_1 : \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $v1_funct_1 : \iota \Rightarrow o$ 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. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\
 & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\
 & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((\neg \\
 & v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 X1) \wedge ((v4_cat_1 \\
 & X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 X1))))))) \Rightarrow (\forall X2. \\
 & (m2_cat_1 X2 X0 X1) \Rightarrow (\forall X3.(m2_cat_1 X3 X0 X1) \Rightarrow (\forall X4. \\
 & (m2_nattra_1 X4 X0 X1 X2 X3) \Rightarrow (\forall X5.(m1_subset_1 X5 (u4_struct_0 \\
 & (k11_nattra_1 X0 X1))) \Rightarrow ((X5 = k4_tarski (k4_tarski X2 X3) X4) \Rightarrow (\\
 & (k3_graph_1 (k11_nattra_1 X0 X1) X5 = X2) \wedge (k4_graph_1 (k11_nattra_1 \\
 & X0 X1) X5 = X3)))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\
 & ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & X0 X1)))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\
 & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\
 & X3) \Leftrightarrow (X2 = X3))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\ & X0)\wedge((\neg v11_struct_0 X0)\wedge((v2_cat_1 X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 \\ & X0)\wedge((v5_cat_1 X0)\wedge((v6_cat_1 X0)\wedge(l1_cat_1 X0))))))))\wedge(((\\ & \neg v2_struct_0 X1)\wedge((\neg v11_struct_0 X1)\wedge((v2_cat_1 X1)\wedge((v3_cat_1 \\ & X1)\wedge((v4_cat_1 X1)\wedge((v5_cat_1 X1)\wedge((v6_cat_1 X1)\wedge(l1_cat_1 \\ & X1))))))))\wedge((m1_subset_1 X2 (u4_struct_0 X0))\wedge(m1_subset_1 \\ & X3 (u4_struct_0 X1))))\Rightarrow(k10_cat_2 X0 X1 X2 X3 = k4_tarski X2 X3) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge \\ & ((v2_cat_1 X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge \\ & ((v6_cat_1 X0)\wedge(l1_cat_1 X0))))))))\wedge((\neg v2_struct_0 X1)\wedge((\neg \\ & v11_struct_0 X1)\wedge((v2_cat_1 X1)\wedge((v3_cat_1 X1)\wedge((v4_cat_1 X1)\wedge \\ & ((v5_cat_1 X1)\wedge((v6_cat_1 X1)\wedge(l1_cat_1 X1))))))))\Rightarrow(\forall X2. \\ & (m2_cat_1 X2 X0 X1)\Rightarrow((v1_funct_1 X2)\wedge((v1_funct_2 X2 (u4_struct_0 \\ & X0) (u4_struct_0 X1))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (u4_struct_0 X0) (u4_struct_0 X1))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge \\ & ((v2_cat_1 X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge \\ & ((v6_cat_1 X0)\wedge(l1_cat_1 X0))))))))\wedge((\neg v2_struct_0 X1)\wedge((\neg \\ & v11_struct_0 X1)\wedge((v2_cat_1 X1)\wedge((v3_cat_1 X1)\wedge((v4_cat_1 X1)\wedge \\ & ((v5_cat_1 X1)\wedge((v6_cat_1 X1)\wedge(l1_cat_1 X1))))))))\Rightarrow((\neg v2_struct_0 \\ & (k11_nattr_1 X0 X1))\wedge((\neg v11_struct_0 (k11_nattr_1 X0 X1))\wedge \\ & ((v1_cat_1 (k11_nattr_1 X0 X1))\wedge((v2_cat_1 (k11_nattr_1 X0 \\ & X1))\wedge((v3_cat_1 (k11_nattr_1 X0 X1))\wedge((v4_cat_1 (k11_nattr_1 \\ & X0 X1))\wedge((v5_cat_1 (k11_nattr_1 X0 X1))\wedge((v6_cat_1 (k11_nattr_1 \\ & X0 X1))\wedge(l1_cat_1 (k11_nattr_1 X0 X1)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge(l1_cat_1 \\ & X0)))\Rightarrow((v2_cat_1 X0)\Leftrightarrow(\forall X1.(m1_subset_1 X1 (u4_struct_0 \\ & X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (u4_struct_0 X0))\Rightarrow((k4_tarski \\ & X2 X1 \in k9_xtuple_0 (u1_cat_1 X0))\Leftrightarrow(k3_graph_1 X0 X2 = k4_graph_1 \\ & X0 X1)))) \end{aligned} \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0)))))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((\\ & \neg v11_struct_0 X1) \wedge ((v2_cat_1 X1) \wedge ((v3_cat_1 X1) \wedge ((v4_cat_1 \\ & X1) \wedge ((v5_cat_1 X1) \wedge ((v6_cat_1 X1) \wedge (l1_cat_1 X1)))))) \Rightarrow (\forall X2. \\ & (m2_cat_1 X2 X0 X1) \Rightarrow (\forall X3.(m2_cat_1 X3 X0 X1) \Rightarrow (\forall X4. \\ & (m2_cat_1 X4 X0 X1) \Rightarrow (\forall X5.(m2_cat_1 X5 X0 X1) \Rightarrow (\forall X6. \\ & (m2_nattr_1 X6 X0 X1 X4 X5) \Rightarrow (\forall X7.(m2_nattr_1 X7 X0 X1 X2 \\ & X3) \Rightarrow (\forall X8.(m1_subset_1 X8 (u4_struct_0 (k11_nattr_1 X0 \\ & X1))) \Rightarrow (\forall X9.(m1_subset_1 X9 (u4_struct_0 (k11_nattr_1 \\ & X0 X1))) \Rightarrow (((X8 = k4_tarski (k4_tarski X4 X5) X6) \wedge (X9 = k4_tarski \\ & (k4_tarski X2 X3) X7) \Rightarrow ((k10_cat_2 (k11_nattr_1 X0 X1) (k11_nattr_1 \\ & X0 X1) X9 X8 \in k9_xtuple_0 (u1_cat_1 (k11_nattr_1 X0 X1))) \Leftrightarrow (r2_funct_2 \\ & (u4_struct_0 X0) (u4_struct_0 X1) X5 X2)))))))))) \end{aligned}$$