

t16_nattra_1

(TMVb9fB88E6zYVRK4Ep48mDCLuScaE82eQB)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $m1_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_cat_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_cat_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_relat_1 : \iota \Rightarrow \iota$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ 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 $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (k1_funct_1 (k4_relat_1 X1) X0 = X0) \quad (2)$$

Assume the following.

$$\forall X0. k6_partfun1 X0 = k4_relat_1 X0 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 \\ & X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge \\ & ((v5_cat_1 X0) \wedge (l1_cat_1 X0)))) \wedge (m1_subset_1 X1 (u1_struct_0 \\ & X0))) \Rightarrow (\neg v1_xboole_0 (k2_cat_1 X0 X1 X1)) \end{aligned} \quad (5)$$

Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 \\
& X0)\wedge(l1_cat_1 X0))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 \\
& X2 (u1_struct_0 X0))))\Rightarrow(\forall X3.(m1_cat_1 X3 X0 X1 X2)\Rightarrow(m1_subset_1 \\
& X3 (u4_struct_0 X0)))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 \\
& X0)\wedge(l1_cat_1 X0))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 \\
& X2 (u1_struct_0 X0))))\Rightarrow(m1_subset_1 (k2_cat_1 X0 X1 X2) (k1_zfmisc_1 \\
& (u4_struct_0 X0)))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge((v2_cat_1 \\
& X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge((v6_cat_1 \\
& X0)\wedge(l1_cat_1 X0))))))))\Rightarrow(m2_cat_1 (k10_cat_1 X0) X0 X0)
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge((v2_cat_1 \\
& X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge((v6_cat_1 \\
& X0)\wedge(l1_cat_1 X0))))))))\Rightarrow(k10_cat_1 X0 = k6_partfun1 (u4_struct_0 \\
& X0))
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge((v2_cat_1 \\
& X0)\wedge((v3_cat_1 X0)\wedge((v4_cat_1 X0)\wedge((v5_cat_1 X0)\wedge((v6_cat_1 \\
& X0)\wedge(l1_cat_1 X0))))))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
& X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow((k2_cat_1 \\
& X0 X1 X2\neq k1_xboole_0)\Rightarrow(\forall X3.((\neg v2_struct_0 X3)\wedge((\neg v11_struct_0 \\
& X3)\wedge((v2_cat_1 X3)\wedge((v3_cat_1 X3)\wedge((v4_cat_1 X3)\wedge((v5_cat_1 \\
& X3)\wedge((v6_cat_1 X3)\wedge(l1_cat_1 X3))))))))\Rightarrow(\forall X4.(m2_cat_1 \\
& X4 X0 X3)\Rightarrow(\forall X5.(m1_cat_1 X5 X0 X1 X2)\Rightarrow(k9_cat_3 X0 X1 X2 X3 \\
& X4 X5 = k3_funct_2 (u4_struct_0 X0) (u4_struct_0 X3) X4 X5))))))
\end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (12)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ & X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ & X0) \wedge (l1_cat_1 X0))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((k2_cat_1 \\ & X0 X1 X2 \neq k1_xboole_0) \Rightarrow (\forall X3.(m1_cat_1 X3 X0 X1 X2) \Rightarrow (k9_cat_3 \\ & X0 X1 X2 X0 (k10_cat_1 X0) X3 = X3)))))) \end{aligned}$$