

t13_yellow17
(TMX5k9LAQxtsHaE4ftsFYxrCSraW46AAZrF)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_waybel_3 : \iota \Rightarrow o$ be given. Let $v1_waybel18 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_waybel18 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k3_waybel18 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_waybel18 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $k8_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_card_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_pralg_1 : \iota \Rightarrow o$ be given. Let $k12_pralg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_pralg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $v1_monoid_0 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_tops_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_waybel18 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_cantor_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1_xboole_0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. ((\\ & \quad v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2. \forall X3. \forall X4. \\ & \quad \forall X5. (m1_subset_1 X5 (k1_zfmisc_1 (k1_funct_1 X0 X3))) \Rightarrow \\ & ((X4 \in k1_funct_1 X0 X2) \wedge (X1 \in k4_card_3 X0)) \Rightarrow ((X2 = X3) \vee ((X1 \in k8_relat_1 \\ & \quad (k12_card_3 X0 X3) X5) \Leftrightarrow (k2_funct_7 X1 X2 X4 \in k8_relat_1 (k12_card_3 \\ & \quad X0 X3) X5)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (\\ & (v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge (v2_pralg_1 \\ & \quad X1)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 X0) \Rightarrow (k1_funct_1 (k12_pralg_1 \\ & \quad X0 X1) X2 = u1_struct_0 (k10_pralg_1 X0 X1 X2))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1)\Rightarrow((v1_xboole_0 X1)\vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(k8_relset_1 X0 X1 X2 X3 = k8_relat_1 X2 X3) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v4_waybel_3 X1)\wedge(v1_waybel18 X1))))))\wedge(m1_subset_1 X2 X0)))\Rightarrow(k4_waybel18 X0 X1 X2 = k1_funct_1 X1 X2) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge(v2_pralg_1 X1))))\wedge(m1_subset_1 X2 X0)))\Rightarrow(k10_pralg_1 X0 X1 X2 = k1_funct_1 X1 X2) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v4_waybel_3 X1)\wedge(v1_waybel18 X1))))))\Rightarrow((v1_pre_topc (k3_waybel18 X0 X1))\wedge((v2_pre_topc (k3_waybel18 X0 X1))\wedge(v1_monoid_0 (k3_waybel18 X0 X1)))) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u1_struct_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0)\Rightarrow(l1_struct_0 X0) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(m1_subset_1 (k8_relset_1 X0 X1 X2 X3) (k1_zfmisc_1 X0)) \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(((v1_relat_1 \\
& X1)\wedge((v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge \\
& ((v4_waybel_3 X1)\wedge(v1_waybel18 X1))))))\wedge(m1_subset_1 X2 X0))\Rightarrow \\
& ((v1_funct_1 (k6_waybel18 X0 X1 X2))\wedge((v1_funct_2 (k6_waybel18 \\
& X0 X1 X2) (u1_struct_0 (k3_waybel18 X0 X1)) (u1_struct_0 (k4_waybel18 \\
& X0 X1 X2)))\wedge(m1_subset_1 (k6_waybel18 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 (k3_waybel18 X0 X1)) (u1_struct_0 (k4_waybel18 X0 \\
& X1 X2)))))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(((v1_relat_1 \\
& X1)\wedge((v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge \\
& ((v4_waybel_3 X1)\wedge(v1_waybel18 X1))))))\wedge(m1_subset_1 X2 X0))\Rightarrow \\
& ((\neg v2_struct_0 (k4_waybel18 X0 X1 X2))\wedge(l1_pre_topc (k4_waybel18 \\
& X0 X1 X2)))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(\\
& (v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v4_waybel_3 X1)\wedge(v1_waybel18 \\
& X1))))))\Rightarrow((v1_pre_topc (k3_waybel18 X0 X1))\wedge((v2_pre_topc (\\
& k3_waybel18 X0 X1))\wedge(l1_pre_topc (k3_waybel18 X0 X1))))
\end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(\\
& (v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge(v2_pralg_1 X1))))\Rightarrow((\\
& v1_relat_1 (k12_pralg_1 X0 X1))\wedge((v4_relat_1 (k12_pralg_1 X0 \\
& X1) X0)\wedge((v1_funct_1 (k12_pralg_1 X0 X1))\wedge(v1_partfun1 (k12_pralg_1 \\
& X0 X1) X0))))
\end{aligned} \tag{15}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((v1_relat_1 X1)\wedge(\\
& (v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v4_waybel_3 \\
& X1)\wedge(v1_waybel18 X1))))))\Rightarrow(\forall X2.(m1_subset_1 X2 X0)\Rightarrow(\\
& k6_waybel18 X0 X1 X2 = k12_card_3 (k12_pralg_1 X0 X1) X2)))
\end{aligned} \tag{16}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v4_waybel_3 X1) \wedge (v1_waybel18 \\ & X1)))))) \Rightarrow (\forall X2. ((v1_pre_topc X2) \wedge ((v2_pre_topc X2) \wedge \\ & l1_pre_topc X2)) \Rightarrow ((X2 = k3_waybel18 X0 X1) \Leftrightarrow ((u1_struct_0 X2 = \\ & k4_card_3 (k12_pralg_1 X0 X1)) \wedge ((v1_tops_2 (k2_waybel18 X0 X1) \\ & X2) \wedge ((v2_cantor_1 (k2_waybel18 X0 X1) X2) \wedge (m1_subset_1 (k2_waybel18 \\ & X0 X1) (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X2)))))))))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_waybel18 X0))) \Rightarrow \\ & ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v2_pralg_1 X0))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xboole_0 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \Rightarrow (v1_xboole_0 X1)) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_monoid_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((v1_relat_1 X1) \wedge (v1_funct_1 \\ & X1))) \end{aligned} \quad (20)$$

Theorem 1

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge \\ & (v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v4_waybel_3 \\ & X1) \wedge (v1_waybel18 X1)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 X0) \Rightarrow (\\ & \forall X3. (m1_subset_1 X3 X0) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 \\ & (k4_waybel18 X0 X1 X2))) \Rightarrow (\forall X5. (m1_subset_1 X5 (k1_zfmisc_1 \\ & (u1_struct_0 (k4_waybel18 X0 X1 X3)))) \Rightarrow (\forall X6. (m1_subset_1 \\ & X6 (u1_struct_0 (k3_waybel18 X0 X1))) \Rightarrow ((X2 \neq X3) \Rightarrow ((X6 \in k8_relset_1 \\ & (u1_struct_0 (k3_waybel18 X0 X1)) (u1_struct_0 (k4_waybel18 X0 \\ & X1 X3)) (k6_waybel18 X0 X1 X3) X5) \Leftrightarrow (k2_funct_7 X6 X2 X4 \in k8_relset_1 \\ & (u1_struct_0 (k3_waybel18 X0 X1)) (u1_struct_0 (k4_waybel18 X0 \\ & X1 X3)) (k6_waybel18 X0 X1 X3) X5)))))))))) \end{aligned}$$