

t28_topalg_4
(TMG1HyWYuZufJtiao1DAkkZxfFkQwnLeuR9)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_borsuk_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_borsuk_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_topalg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_topalg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_topalg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_topalg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_topalg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k5_topalg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_group_7 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $np_2 : \iota$ 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 $v1_pre_topc : \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (X2 \in u1_struct_0 (k5_topalg_1 X0 X1)) \Leftrightarrow (\exists X3. (m1_borsuk_2 \\ & X3 X0 X1 X1) \wedge (X2 = k6_eqrel_1 (k2_topalg_1 X0 X1) (k2_topalg_1 X0 \\ & X1) (k4_topalg_1 X0 X1) X3)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc \\
& X1)))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
& (u1_struct_0 (k5_topalg_1 (k2_borsuk_1 X0 X1) (k4_borsuk_1 X0 \\
& X1 X2 X3)))) \Rightarrow (\forall X5.(m1_borsuk_2 X5 (k2_borsuk_1 X0 X1) (k4_borsuk_1 \\
& X0 X1 X2 X3) (k4_borsuk_1 X0 X1 X2 X3)) \Rightarrow ((X4 = k6_eqrel_1 (k2_topalg_1 \\
& (k2_borsuk_1 X0 X1) (k4_borsuk_1 X0 X1 X2 X3)) (k2_topalg_1 (k2_borsuk_1 \\
& X0 X1) (k4_borsuk_1 X0 X1 X2 X3)) (k4_topalg_1 (k2_borsuk_1 X0 X1) \\
& (k4_borsuk_1 X0 X1 X2 X3)) X5) \Rightarrow (k3_funct_2 (u1_struct_0 (k5_topalg_1 \\
& (k2_borsuk_1 X0 X1) (k4_borsuk_1 X0 X1 X2 X3))) (u1_struct_0 (k2_group_7 \\
& (k2_tarSKI np_1 np_2) (k10_finseq_1 (k5_topalg_1 X0 X2) (k5_topalg_1 \\
& X1 X3)))) (k11_topalg_4 X0 X1 X2 X3) X4 = k10_finseq_1 (k6_eqrel_1 \\
& (k2_topalg_1 X0 X2) (k2_topalg_1 X0 X2) (k4_topalg_1 X0 X2) (k9_topalg_4 \\
& X0 X1 X2 X3 X5)) (k6_eqrel_1 (k2_topalg_1 X1 X3) (k2_topalg_1 X1 X3) \\
& (k4_topalg_1 X1 X3) (k10_topalg_4 X0 X1 X2 X3 X5)))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\
& (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 \\
& X1 X2 X3 = k1_funct_1 X2 X3)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge \\
& (l1_pre_topc X0))) \wedge ((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc \\
& X1)))) \Rightarrow ((\neg v2_struct_0 (k2_borsuk_1 X0 X1)) \wedge ((v1_pre_topc (k2_borsuk_1 \\
& X0 X1)) \wedge (v2_pre_topc (k2_borsuk_1 X0 X1))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\
& X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \wedge (((\neg v2_struct_0 X1) \wedge \\
& ((v2_pre_topc X1) \wedge (l1_pre_topc X1)))) \wedge ((m1_subset_1 X2 (u1_struct_0 \\
& X0)) \wedge (m1_subset_1 X3 (u1_struct_0 X1)))) \Rightarrow (m1_subset_1 (k4_borsuk_1 \\
& X0 X1 X2 X3) (u1_struct_0 (k2_borsuk_1 X0 X1)))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \wedge \\ & ((v2_pre_topc\ X1) \wedge (l1_pre_topc\ X1))) \Rightarrow ((v1_pre_topc\ (k2_borsuk_1 \\ & X0\ X1)) \wedge ((v2_pre_topc\ (k2_borsuk_1\ X0\ X1)) \wedge (l1_pre_topc\ (k2_borsuk_1 \\ & X0\ X1)))) \end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\ & X0) \wedge ((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0))) \wedge (((\neg v2_struct_0\ X1) \wedge \\ & ((v2_pre_topc\ X1) \wedge (l1_pre_topc\ X1))) \wedge ((m1_subset_1\ X2\ (u1_struct_0 \\ & X0)) \wedge (m1_subset_1\ X3\ (u1_struct_0\ X1)))))) \Rightarrow ((v1_funct_1\ (k11_topalg_4 \\ & X0\ X1\ X2\ X3)) \wedge ((v1_funct_2\ (k11_topalg_4\ X0\ X1\ X2\ X3)\ (u1_struct_0 \\ & (k5_topalg_1\ (k2_borsuk_1\ X0\ X1)\ (k4_borsuk_1\ X0\ X1\ X2\ X3)))\ (u1_struct_0 \\ & (k2_group_7\ (k2_tarSKI\ np_1\ np_2)\ (k10_finseq_1\ (k5_topalg_1 \\ & X0\ X2)\ (k5_topalg_1\ X1\ X3)))))) \wedge (m1_subset_1\ (k11_topalg_4\ X0\ X1 \\ & X2\ X3)\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0\ (k5_topalg_1\ (k2_borsuk_1 \\ & X0\ X1)\ (k4_borsuk_1\ X0\ X1\ X2\ X3)))\ (u1_struct_0\ (k2_group_7\ (k2_tarSKI \\ & np_1\ np_2)\ (k10_finseq_1\ (k5_topalg_1\ X0\ X2)\ (k5_topalg_1\ X1 \\ & X3)))))))))) \end{aligned} \tag{9}$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0\ X0) \wedge ((v2_pre_topc\ X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. ((\neg v2_struct_0\ X1) \wedge ((v2_pre_topc\ X1) \wedge (l1_pre_topc \\ & X1))) \Rightarrow (\forall X2. (m1_subset_1\ X2\ (u1_struct_0\ X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1\ X3\ (u1_struct_0\ X1)) \Rightarrow (\forall X4. (m1_borsuk_2\ X4 \\ & (k2_borsuk_1\ X0\ X1)\ (k4_borsuk_1\ X0\ X1\ X2\ X3)\ (k4_borsuk_1\ X0\ X1\ X2 \\ & X3)) \Rightarrow (k1_funct_1\ (k11_topalg_4\ X0\ X1\ X2\ X3)\ (k6_eqrel_1\ (k2_topalg_1 \\ & (k2_borsuk_1\ X0\ X1)\ (k4_borsuk_1\ X0\ X1\ X2\ X3))\ (k2_topalg_1\ (k2_borsuk_1 \\ & X0\ X1)\ (k4_borsuk_1\ X0\ X1\ X2\ X3))\ (k4_topalg_1\ (k2_borsuk_1\ X0\ X1) \\ & (k4_borsuk_1\ X0\ X1\ X2\ X3))\ X4) = k10_finseq_1\ (k6_eqrel_1\ (k2_topalg_1 \\ & X0\ X2)\ (k2_topalg_1\ X0\ X2)\ (k4_topalg_1\ X0\ X2)\ (k9_topalg_4\ X0\ X1 \\ & X2\ X3\ X4))\ (k6_eqrel_1\ (k2_topalg_1\ X1\ X3)\ (k2_topalg_1\ X1\ X3)\ (k4_topalg_1 \\ & X1\ X3)\ (k10_topalg_4\ X0\ X1\ X2\ X3\ X4)))))) \end{aligned}$$