

t30_topalg_4

(TMRB3iJXfsMFY2NpgdpLmyiWNb7UFLudEQf)

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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 $r2_group_6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_topalg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2_group_7 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_topalg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v15_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_group_1 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $r1_group_6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_group_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_group_7 : \iota \Rightarrow o$ be given. Let $v3_group_7 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_group_7 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_monoid_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
 & X0))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc \\
 & X1))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
 & (m1_subset_1 X3 (u1_struct_0 X1)) \Rightarrow (v3_funct_2 (k11_topalg_4 \\
 & X0 X1 X2 X3) (u1_struct_0 (k5_topalg_1 (k2_borsuk_1 X0 X1) (k4_borsuk_1 \\
 & X0 X1 X2 X3))) (u1_struct_0 (k2_group_7 (k2_tarski np_1 np_2) \\
 & (k10_finseq_1 (k5_topalg_1 X0 X2) (k5_topalg_1 X1 X3)))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v15_algstr_0 X0) \wedge \\
 & ((v2_group_1 X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0)))))) \wedge ((\neg \\
 & v2_struct_0 X1) \wedge ((v15_algstr_0 X1) \wedge ((v2_group_1 X1) \wedge ((v3_group_1 \\
 & X1) \wedge (l3_algstr_0 X1)))))) \Rightarrow ((r2_group_6 X0 X1) \Leftrightarrow (r1_group_6 X0 \\
 & X1))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 (k10_finseq_1 X0 X1))\wedge(v1_funct_1 (k10_finseq_1 X0 X1)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc X0)))\wedge(m1_subset_1 X1 (u1_struct_0 X0)))\Rightarrow((v15_algstr_0 (k5_topalg_1 X0 X1))\wedge((v2_group_1 (k5_topalg_1 X0 X1))\wedge(v3_group_1 (k5_topalg_1 X0 X1)))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc X0)))\wedge((\neg v2_struct_0 X1)\wedge((v2_pre_topc X1)\wedge(l1_pre_topc X1))))\Rightarrow((\neg v2_struct_0 (k2_borsuk_1 X0 X1))\wedge((v1_pre_topc (k2_borsuk_1 X0 X1))\wedge(v2_pre_topc (k2_borsuk_1 X0 X1)))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc X0)))\wedge(((\neg v2_struct_0 X1)\wedge((v2_pre_topc X1)\wedge(l1_pre_topc X1)))\wedge((m1_subset_1 X2 (u1_struct_0 X0))\wedge(m1_subset_1 X3 (u1_struct_0 X1))))))\Rightarrow((v1_funct_1 (k11_topalg_4 X0 X1 X2 X3))\wedge((v1_funct_2 (k11_topalg_4 X0 X1 X2 X3) (u1_struct_0 (k5_topalg_1 (k2_borsuk_1 X0 X1) (k4_borsuk_1 X0 X1 X2 X3)) (u1_struct_0 (k2_group_7 (k2_tarski np_1 np_2) (k10_finseq_1 (k5_topalg_1 X0 X2) (k5_topalg_1 X1 X3))))))\wedge(v1_group_6 (k11_topalg_4 X0 X1 X2 X3) (k5_topalg_1 (k2_borsuk_1 X0 X1) (k4_borsuk_1 X0 X1 X2 X3)) (k2_group_7 (k2_tarski np_1 np_2) (k10_finseq_1 (k5_topalg_1 X0 X2) (k5_topalg_1 X1 X3)))))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc X0)))\wedge(m1_subset_1 X1 (u1_struct_0 X0)))\Rightarrow((\neg v2_struct_0 (k5_topalg_1 X0 X1))\wedge(v15_algstr_0 (k5_topalg_1 X0 X1))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v1_group_7 X1)\wedge(v3_group_7 X1 X0))))))\Rightarrow((v15_algstr_0 (k2_group_7 X0 X1))\wedge(v3_group_1 (k2_group_7 X0 X1))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v1_group_7 X1)\wedge(v2_group_7 X1 X0))))))\Rightarrow((v15_algstr_0 (k2_group_7 X0 X1))\wedge(v2_group_1 (k2_group_7 X0 X1))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge(v1_group_7 X1))))))\Rightarrow((\neg v2_struct_0 (k2_group_7 X0 X1))\wedge((v15_algstr_0 (k2_group_7 X0 X1))\wedge(v1_monoid_0 (k2_group_7 X0 X1)))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v3_group_1 X0)\wedge(l3_algstr_0 X0)))\wedge((\neg v2_struct_0 X1)\wedge((v3_group_1 X1)\wedge(l3_algstr_0 X1))))\Rightarrow(v3_group_7 (k10_finseq_1 X0 X1) (k2_tarski np_1 np_2)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_group_1 X0)\wedge(l3_algstr_0 X0)))\wedge((\neg v2_struct_0 X1)\wedge((v2_group_1 X1)\wedge(l3_algstr_0 X1))))\Rightarrow(v2_group_7 (k10_finseq_1 X0 X1) (k2_tarski np_1 np_2)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge(l3_algstr_0 X0))\wedge((\neg v2_struct_0 X1)\wedge(l3_algstr_0 X1)))\Rightarrow((v1_partfun1 (k10_finseq_1 X0 X1) (k2_tarski np_1 np_2))\wedge(v1_group_7 (k10_finseq_1 X0 X1))) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge(l3_algstr_0 X0))\wedge((\neg v2_struct_0 X1)\wedge(l3_algstr_0 X1)))\Rightarrow(v4_relat_1 (k10_finseq_1 X0 X1) (k2_tarski np_1 np_2)) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc X0)))\wedge(m1_subset_1 X1 (u1_struct_0 X0)))\Rightarrow((v15_algstr_0 (k5_topalg_1 X0 X1))\wedge(l3_algstr_0 (k5_topalg_1 X0 X1))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc X0)))\wedge((\neg v2_struct_0 X1)\wedge((v2_pre_topc X1)\wedge(l1_pre_topc X1)))\wedge((m1_subset_1 X2 (u1_struct_0 X0))\wedge(m1_subset_1 X3 (u1_struct_0 X1))))\Rightarrow(m1_subset_1 (k4_borsuk_1 X0 X1 X2 X3) (u1_struct_0 (k2_borsuk_1 X0 X1))) \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge (v1_group_7 X1)))) \Rightarrow ((\\ & v15_algstr_0 (k2_group_7 X0 X1)) \wedge (l3_algstr_0 (k2_group_7 X0 \\ & X1))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \wedge \\ & ((v2_pre_topc X1) \wedge (l1_pre_topc X1))) \Rightarrow ((v1_pre_topc (k2_borsuk_1 \\ & X0 X1)) \wedge ((v2_pre_topc (k2_borsuk_1 X0 X1)) \wedge (l1_pre_topc (k2_borsuk_1 \\ & X0 X1)))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\ & X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \wedge (((\neg v2_struct_0 X1) \wedge \\ & ((v2_pre_topc X1) \wedge (l1_pre_topc X1))) \wedge ((m1_subset_1 X2 (u1_struct_0 \\ & X0)) \wedge (m1_subset_1 X3 (u1_struct_0 X1)))))) \Rightarrow ((v1_funct_1 (k11_topalg_4 \\ & X0 X1 X2 X3)) \wedge ((v1_funct_2 (k11_topalg_4 X0 X1 X2 X3) (u1_struct_0 \\ & (k5_topalg_1 (k2_borsuk_1 X0 X1) (k4_borsuk_1 X0 X1 X2 X3))) (u1_struct_0 \\ & (k2_group_7 (k2_tarski np_1 np_2) (k10_finseq_1 (k5_topalg_1 \\ & X0 X2) (k5_topalg_1 X1 X3)))))) \wedge (m1_subset_1 (k11_topalg_4 X0 X1 \\ & X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k5_topalg_1 (k2_borsuk_1 \\ & X0 X1) (k4_borsuk_1 X0 X1 X2 X3))) (u1_struct_0 (k2_group_7 (k2_tarski \\ & np_1 np_2) (k10_finseq_1 (k5_topalg_1 X0 X2) (k5_topalg_1 X1 \\ & X3)))))))))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 \\ & X0) \wedge (l3_algstr_0 X0)))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_group_1 \\ & X1) \wedge ((v3_group_1 X1) \wedge (l3_algstr_0 X1)))) \Rightarrow ((r1_group_6 X0 X1) \Leftrightarrow \\ & (\exists X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) \\ & (u1_struct_0 X1)) \wedge ((v1_group_6 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))))) \wedge (v3_funct_2 \\ & X2 (u1_struct_0 X0) (u1_struct_0 X1)))) \end{aligned} \quad (20)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc \\ & X1))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u1_struct_0 X1)) \Rightarrow (r2_group_6 (k5_topalg_1 (\\ & k2_borsuk_1 X0 X1) (k4_borsuk_1 X0 X1 X2 X3)) (k2_group_7 (k2_tarski \\ & np_1 np_2) (k10_finseq_1 (k5_topalg_1 X0 X2) (k5_topalg_1 X1 \\ & X3)))))))) \end{aligned}$$