

t49_topalg_1
(TMPvdYxobAp37QRA7UvaQQjgv5uisxWjtp7)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $v1_borsuk_2 : \iota \Rightarrow o$ 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 $m1_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_topalg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_topalg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_borsuk_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_borsuk_2 X3 \\ & X0 X1 X2) \Rightarrow (\forall X4.(m1_borsuk_2 X4 X0 X1 X2) \Rightarrow (((r1_borsuk_6 \\ & X0 X1 X2) \wedge (r3_borsuk_2 X0 X1 X2 X3 X4)) \Rightarrow (r2_funct_2 (u1_struct_0 \\ & (k5_topalg_1 X0 X2)) (u1_struct_0 (k5_topalg_1 X0 X1)) (k6_topalg_1 \\ & X0 X1 X2 X3) (k6_topalg_1 X0 X1 X2 X4))))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2_struct_0 \\ & X0) \wedge ((v2_pre_topc X0) \wedge ((v1_borsuk_2 X0) \wedge (l1_pre_topc X0)))) \wedge \\ & ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge ((m1_subset_1 X2 (u1_struct_0 \\ & X0)) \wedge ((m1_borsuk_2 X3 X0 X1 X2) \wedge (m1_borsuk_2 X4 X0 X1 X2)))))) \Rightarrow (\\ & (r4_borsuk_2 X0 X1 X2 X3 X4) \Leftrightarrow (r3_borsuk_2 X0 X1 X2 X3 X4)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v2_pre_topc \\ & X0) \wedge (l1_pre_topc X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ & m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow ((r1_borsuk_6 X0 X1 X2) \Leftrightarrow (r1_borsuk_2 \\ & X0 X1 X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow ((v1_borsuk_2\ X0) \Leftrightarrow (\forall X1.(\\ m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow (\forall X2.(m1_subset_1\ X2 \\ (u1_struct_0\ X0)) \Rightarrow (r1_borsuk_2\ X0\ X1\ X2)))) \end{aligned} \quad (4)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0) \wedge ((v2_pre_topc\ X0) \wedge ((v1_borsuk_2 \\ X0) \wedge (l1_pre_topc\ X0)))) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (u1_struct_0 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (u1_struct_0\ X0)) \Rightarrow (\forall X3. \\ (m1_borsuk_2\ X3\ X0\ X1\ X2) \Rightarrow (\forall X4.(m1_borsuk_2\ X4\ X0\ X1\ X2) \Rightarrow \\ ((r4_borsuk_2\ X0\ X1\ X2\ X3\ X4) \Rightarrow (r2_funct_2\ (u1_struct_0\ (k5_topalg_1 \\ X0\ X2))\ (u1_struct_0\ (k5_topalg_1\ X0\ X1))\ (k6_topalg_1\ X0\ X1\ X2\ X3) \\ (k6_topalg_1\ X0\ X1\ X2\ X4))))))) \end{aligned}$$