

t45_topalg_1
(TMT47GsteUmK75bLvPsLUbgpgZEGvqdo1Fd)

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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 $r1_borsuk_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_topalg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_topalg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_relat_2 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v3_relat_2 X3) \wedge \\ & ((v1_partfun1 X3 X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0)))) \Rightarrow ((X1 \in k6_eqrel_1 X0 X0 X3 X2) \Leftrightarrow (k4_tarski X1 X2 \in X3)) \end{aligned} \quad (1)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((r1_borsuk_6 X0 X1 X2) \Rightarrow ((\neg \\ & v1_xboole_0 (k3_topalg_1 X0 X1 X2)) \wedge ((v1_partfun1 (k3_topalg_1 \\ & X0 X1 X2) (k1_topalg_1 X0 X1 X2)) \wedge ((v3_relat_2 (k3_topalg_1 X0 X1 \\ & X2)) \wedge (v8_relat_2 (k3_topalg_1 X0 X1 X2)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc \\ & X0)\wedge(l1_pre_topc X0)))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge \\ & m1_subset_1 X2 (u1_struct_0 X0)))\Rightarrow(m1_subset_1 (k3_topalg_1 \\ & X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k1_topalg_1 X0 X1 X2) (k1_topalg_1 \\ & X0 X1 X2)))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc \\ & X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow((r1_borsuk_6 X0 X1 X2)\Rightarrow(\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k1_topalg_1 X0 X1 X2) \\ & (k1_topalg_1 X0 X1 X2))))\Rightarrow((X3 = k3_topalg_1 X0 X1 X2)\Leftrightarrow(\forall X4. \\ & (m1_borsuk_2 X4 X0 X1 X2)\Rightarrow(\forall X5.(m1_borsuk_2 X5 X0 X1 X2)\Rightarrow \\ & ((k4_tarski X4 X5 \in X3)\Leftrightarrow(r3_borsuk_2 X0 X1 X2 X4 X5)))))))))) \end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc \\ & X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow((r1_borsuk_6 X0 X1 X2)\Rightarrow(\forall X3. \\ & (m1_borsuk_2 X3 X0 X1 X2)\Rightarrow(\forall X4.(m1_borsuk_2 X4 X0 X1 X2)\Rightarrow \\ & ((X4 \in k6_eqrel_1 (k1_topalg_1 X0 X1 X2) (k1_topalg_1 X0 X1 X2) (k3_topalg_1 \\ & X0 X1 X2) X3)\Leftrightarrow(r3_borsuk_2 X0 X1 X2 X3 X4)))))))))) \end{aligned}$$