

t14_borsuk_1 (TMLoHdanTPnAELpEBi- marUJ4fMLr8XjQiK3)

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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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_borsuk_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tops_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_borsuk_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_tarski : \iota \Rightarrow \iota$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_tops_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (r1_tarski X0 X1) \Rightarrow (r1_tarski (k3_tarski X0) (k3_tarski X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (l1_pre_topc X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (((v3_pre_topc X1 X0) \wedge (r1_tarski X1 X2)) \Rightarrow \\ (r1_tarski X1 (k1_tops_1 X0 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ (m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow \\ ((v1_tops_2 X1 X0) \Rightarrow (v3_pre_topc (k5_setfam_1 (u1_struct_0 X0) \\ X1) X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (l1_pre_topc X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (r1_tarski (k1_tops_1 X0 X1) X1)) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ ((v2_pre_topc X1) \wedge (l1_pre_topc X1)) \Rightarrow (\forall X2. (m1_subset_1 \\ X2 (k1_zfmisc_1 (u1_struct_0 (k2_borsuk_1 X0 X1)))) \Rightarrow ((v3_pre_topc \\ X2 (k2_borsuk_1 X0 X1)) \Rightarrow (X2 = k5_setfam_1 (u1_struct_0 (k2_borsuk_1 \\ X0 X1)) (k7_borsuk_1 X0 X1 X2)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ & ((v2_pre_topc\ X1)\wedge(l1_pre_topc\ X1))\Rightarrow(\forall X2.(m1_subset_1 \\ & X2\ (k1_zfmisc_1\ (u1_struct_0\ (k2_borsuk_1\ X0\ X1))))\Rightarrow(r1_tarski \\ & (k5_setfam_1\ (u1_struct_0\ (k2_borsuk_1\ X0\ X1))\ (k7_borsuk_1\ X0 \\ & X1\ X2))\ X2))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1. \\ & ((v2_pre_topc\ X1)\wedge(l1_pre_topc\ X1))\Rightarrow(\forall X2.(m1_subset_1 \\ & X2\ (k1_zfmisc_1\ (u1_struct_0\ (k2_borsuk_1\ X0\ X1))))\Rightarrow(\forall X3. \\ & (m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ (k2_borsuk_1\ X0\ X1))))\Rightarrow \\ & ((r1_tarski\ X2\ X3)\Rightarrow(r1_tarski\ (k7_borsuk_1\ X0\ X1\ X2)\ (k7_borsuk_1 \\ & X0\ X1\ X3)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ X0)))\Rightarrow(k5_setfam_1\ X0\ X1 = k3_tarski\ X1) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\wedge \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow(v3_pre_topc \\ & (k1_tops_1\ X0\ X1)\ X0) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ & X0))\wedge(((v2_pre_topc\ X1)\wedge(l1_pre_topc\ X1))\wedge(m1_subset_1\ X2\ (\\ & k1_zfmisc_1\ (u1_struct_0\ (k2_borsuk_1\ X0\ X1))))))\Rightarrow(v1_tops_2 \\ & (k7_borsuk_1\ X0\ X1\ X2)\ (k2_borsuk_1\ X0\ X1)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v2_pre_topc\ X0)\wedge(l1_pre_topc \\ & X0))\wedge(((v2_pre_topc\ X1)\wedge(l1_pre_topc\ X1))\wedge(m1_subset_1\ X2\ (\\ & k1_zfmisc_1\ (u1_struct_0\ (k2_borsuk_1\ X0\ X1))))))\Rightarrow(m1_subset_1 \\ & (k7_borsuk_1\ X0\ X1\ X2)\ (k1_zfmisc_1\ (k1_zfmisc_1\ (u1_struct_0 \\ & (k2_borsuk_1\ X0\ X1)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k1_zfmisc_1\ X0)))\Rightarrow(m1_subset_1\ (k5_setfam_1\ X0\ X1)\ (k1_zfmisc_1\ X0)) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \wedge \\ & ((v2_pre_topc\ X1) \wedge (l1_pre_topc\ X1))) \Rightarrow ((v1_pre_topc\ (k2_borsuk_1 \\ & X0\ X1)) \wedge ((v2_pre_topc\ (k2_borsuk_1\ X0\ X1)) \wedge (l1_pre_topc\ (k2_borsuk_1 \\ & X0\ X1)))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1_pre_topc\ X0) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0)))) \Rightarrow (m1_subset_1\ (k1_tops_1\ X0\ X1)\ (k1_zfmisc_1 \\ & (u1_struct_0\ X0))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. (X0 = X1) \Leftrightarrow ((r1_tarski\ X0\ X1) \wedge (r1_tarski\ X1\ X0)) \quad (15)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\ & ((v2_pre_topc\ X1) \wedge (l1_pre_topc\ X1)) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2\ (k1_zfmisc_1\ (u1_struct_0\ (k2_borsuk_1\ X0\ X1)))) \Rightarrow (k1_tops_1 \\ & (k2_borsuk_1\ X0\ X1)\ X2 = k5_setfam_1\ (u1_struct_0\ (k2_borsuk_1 \\ & X0\ X1))\ (k7_borsuk_1\ X0\ X1\ X2)))) \end{aligned}$$