

t10_borsuk_1
(TMcD4LgxGdnFXjyn1XuZPHKZa71f4TJyPRL)

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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 $k2_borsuk_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_borsuk_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $u1_pre_topc : \iota \Rightarrow \iota$ be given. Let $k5_setfam_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (\forall X2. (\neg v1_xboole_0 X2) \Rightarrow (\neg (X0 \in k2_zfmisc_1 X1 X2) \wedge (\forall X3. (m1_subset_1 X3 X1) \Rightarrow (\forall X4. (m1_subset_1 X4 X2) \Rightarrow (X0 \neq k4_tarski X3 X4)))))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \wedge (((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc X1))) \wedge ((m1_subset_1 X2 (u1_struct_0 X0)) \wedge (m1_subset_1 X3 (u1_struct_0 X1)))))) \Rightarrow (k4_borsuk_1 X0 X1 X2 X3 = k4_tarski X2 X3) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (\exists X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge ((\neg v1_xboole_0 X1) \wedge (v4_pre_topc X1 X0))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1)) \Rightarrow (\neg v1_xboole_0 (k2_zfmisc_1 X0 X1)) \quad (5)$$

Assume the following.

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

Assume the following.

$$\forall X0. \forall X1. k4_tarski X0 X1 = k2_tarski (k2_tarski X0 X1) (k1_tarski X0) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & ((v2_pre_topc X1) \wedge (l1_pre_topc X1)) \Rightarrow (\forall X2. ((v1_pre_topc \\ & X2) \wedge ((v2_pre_topc X2) \wedge (l1_pre_topc X2)))) \Rightarrow ((X2 = k2_borsuk_1 \\ & X0 X1) \Leftrightarrow ((u1_struct_0 X2 = k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & X1)) \wedge (u1_pre_topc X2 = ReplSep (toset (\lambda X3 : \iota. m1_subset_1 \\ & X3 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X2)))) (\lambda X3 : \iota. \\ & r1_tarski X3 (ReplSep2 (toset (\lambda X4 : \iota. m1_subset_1 X4 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) (\lambda X4 : \iota. toset (\lambda X5 : \iota. m1_subset_1 \\ & X5 (k1_zfmisc_1 (u1_struct_0 X1)))) (\lambda X4 : \iota. \lambda X5 : \\ & (X4 \in u1_pre_topc X0) \wedge (X5 \in u1_pre_topc X1)) (\lambda X4 : \iota. \lambda X5 : \\ & \iota. k8_mcart_1 (u1_struct_0 X0) (u1_struct_0 X1) X4 X5))) (\lambda X3 : \\ & \iota. k5_setfam_1 (u1_struct_0 X2) X3)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. k2_tarski X0 X1 = k2_tarski X1 X0 \quad (9)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge (l1_pre_topc \\ & X1))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 (k2_borsuk_1 \\ & X0 X1))) \Rightarrow (\exists X3. (m1_subset_1 X3 (u1_struct_0 X0)) \wedge (\exists X4. \\ & (m1_subset_1 X4 (u1_struct_0 X1)) \wedge (X2 = k4_borsuk_1 X0 X1 X3 X4)))))) \end{aligned}$$