

t27\_borsuk\_6 (TMYg-  
BQNkGw4haLfgypjjxHv8c7QqpAZHNG)

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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  $k1\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  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.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (X0 \in k2\_zfmisc\_1 X1 X2) \Rightarrow ((k1\_xtuple\_0 X0 \in X1) \wedge (k2\_xtuple\_0 X0 \in X2)) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (4)$$

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.

$$\forall X0. (l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)) \wedge \\ & ((v2\_pre\_topc\ X1) \wedge (l1\_pre\_topc\ X1))) \Rightarrow ((v1\_pre\_topc\ (k2\_borsuk\_1 \\ & X0\ X1)) \wedge ((v2\_pre\_topc\ (k2\_borsuk\_1\ X0\ X1)) \wedge (l1\_pre\_topc\ (k2\_borsuk\_1 \\ & X0\ X1)))) \end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow (\forall X1. \\ & ((v2\_pre\_topc\ X1) \wedge (l1\_pre\_topc\ X1)) \Rightarrow (\forall X2. ((v1\_pre\_topc \\ & X2) \wedge ((v2\_pre\_topc\ X2) \wedge (l1\_pre\_topc\ X2))) \Rightarrow ((X2 = k2\_borsuk\_1 \\ & X0\ X1) \Leftrightarrow ((u1\_struct\_0\ X2 = k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0 \\ & X1)) \wedge (u1\_pre\_topc\ X2 = ReplSep\ (toset\ (\lambda X3 : \iota. m1\_subset\_1 \\ & X3\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X2))))))\ (\lambda X3 : \iota. \\ & r1\_tarski\ X3\ (ReplSep2\ (toset\ (\lambda X4 : \iota. m1\_subset\_1\ X4\ (k1\_zfmisc\_1 \\ & (u1\_struct\_0\ X0))))\ (\lambda X4 : \iota. toset\ (\lambda X5 : \iota. m1\_subset\_1 \\ & X5\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X1))))\ (\lambda X4 : \iota. \lambda X5 : \iota. \\ & (X4 \in u1\_pre\_topc\ X0) \wedge (X5 \in u1\_pre\_topc\ X1))\ (\lambda X4 : \iota. \lambda X5 : \\ & \iota. k8\_mcart\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)\ X4\ X5)))\ (\lambda X3 : \\ & \iota. k5\_setfam\_1\ (u1\_struct\_0\ X2)\ X3)))))) \end{aligned} \tag{8}$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0\ X0) \wedge ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0\ X1) \wedge ((v2\_pre\_topc\ X1) \wedge (l1\_pre\_topc \\ & X1))) \Rightarrow (\forall X2. (m1\_subset\_1\ X2\ (u1\_struct\_0\ (k2\_borsuk\_1 \\ & X0\ X1))) \Rightarrow ((m1\_subset\_1\ (k1\_xtuple\_0\ X2)\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1 \\ & (k2\_xtuple\_0\ X2)\ (u1\_struct\_0\ X1)))))) \end{aligned}$$