

t39\_borsuk\_1 (TMLm-  
NYcR8GFJzR18RWfexasamZMdwtKcQHq)

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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  $m1\_borsuk\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_borsuk\_1 : \iota \Rightarrow \iota$  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  $m2\_connsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow (\forall X2.(m2\_connsp\_2 X2 X0 X1) \Rightarrow (\exists X3.(m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \wedge ((v3\_pre\_topc X3 X0) \wedge ((r1\_tarski \\ & X1 X3) \wedge ((r1\_tarski X3 X2) \wedge (\forall X4.(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))) \Rightarrow ((X4 \in k10\_borsuk\_1 X0) \Rightarrow ((r1\_xboole\_0 X4 X3) \vee \\ & (r1\_tarski X4 X3)))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (k10\_borsuk\_1 X0)) \tag{2}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (m1\_eqrel\_1 (k10\_borsuk\_1 X0) (u1\_struct\_0 X0)) \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge (m1\_eqrel\_1 X1 (u1\_struct\_0 \\
& X0))) \Rightarrow ((m1\_borsuk\_1 X1 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X0))) \Rightarrow ((X2 \in X1) \Rightarrow (\forall X3.(m2\_connsp\_2 X3 X0 X2) \Rightarrow \\
& (\exists X4.(m1\_subset\_1 X4 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \wedge \\
& ((v3\_pre\_topc X4 X0) \wedge ((r1\_tarski X2 X4) \wedge ((r1\_tarski X4 X3) \wedge (\forall X5. \\
& (m1\_subset\_1 X5 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((X5 \in X1) \Rightarrow (( \\
& r1\_xboole\_0 X5 X4) \vee (r1\_tarski X5 X4)))))))))))))
\end{aligned} \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (m1\_borsuk\_1 (k10\_borsuk\_1 X0) X0)
\end{aligned}$$