

## l5\_topalg\_2

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Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_borsuk\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_topmetr : \iota$  be given. Let  $k5\_topmetr : \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k17\_borsuk\_1 : \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_setfam\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarSKI : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_mcart\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$k5\_topmetr = k17\_borsuk\_1 \quad (1)$$

Assume the following.

$$(\neg v2\_struct\_0 \ k17\_borsuk\_1) \wedge ((v1\_pre\_topc \ k17\_borsuk\_1) \wedge (v2\_pre\_topc \ k17\_borsuk\_1)) \quad (2)$$

Assume the following.

$$(v2\_pre\_topc \ k3\_topmetr) \wedge (l1\_pre\_topc \ k3\_topmetr) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v2\_pre\_topc \ X0) \wedge (l1\_pre\_topc \ X0)) \wedge \\ & ((v2\_pre\_topc \ X1) \wedge (l1\_pre\_topc \ X1))) \Rightarrow ((v1\_pre\_topc \ (k2\_borsuk\_1 \\ & X0 \ X1)) \wedge ((v2\_pre\_topc \ (k2\_borsuk\_1 \ X0 \ X1)) \wedge (l1\_pre\_topc \ (k2\_borsuk\_1 \\ & X0 \ X1)))) \end{aligned} \quad (4)$$

Assume the following.

$$l1\_pre\_topc \ k17\_borsuk\_1 \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1. \\
& ((v2\_pre\_topc\ X1)\wedge(l1\_pre\_topc\ X1))\Rightarrow(\forall X2.((v1\_pre\_topc \\
& X2)\wedge((v2\_pre\_topc\ X2)\wedge(l1\_pre\_topc\ X2)))\Rightarrow((X2 = k2\_borsuk\_1 \\
& X0\ X1)\Leftrightarrow((u1\_struct\_0\ X2 = k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0 \\
& X1))\wedge(u1\_pre\_topc\ X2 = ReplSep\ (toset\ (\lambda X3 : \iota.m1\_subset\_1 \\
& X3\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X2))))))\ (\lambda X3 : \iota. \\
& r1\_tarski\ X3\ (ReplSep2\ (toset\ (\lambda X4 : \iota.m1\_subset\_1\ X4\ (k1\_zfmisc\_1 \\
& (u1\_struct\_0\ X0))))\ (\lambda X4 : \iota.toset\ (\lambda X5 : \iota.m1\_subset\_1 \\
& X5\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X1))))\ (\lambda X4 : \iota.\lambda X5 : \iota. \\
& (X4 \in u1\_pre\_topc\ X0)\wedge(X5 \in u1\_pre\_topc\ X1))\ (\lambda X4 : \iota.\lambda X5 : \\
& \iota.k8\_mcart\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)\ X4\ X5)))\ (\lambda X3 : \\
& \iota.k5\_setfam\_1\ (u1\_struct\_0\ X2)\ X3))))))
\end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned}
& u1\_struct\_0\ (k2\_borsuk\_1\ k3\_topmetr\ k5\_topmetr) = k2\_zfmisc\_1 \\
& (u1\_struct\_0\ k3\_topmetr)\ (u1\_struct\_0\ k5\_topmetr)
\end{aligned}$$