

## t39\_borsuk\_6

(TMbr5WdQZsqknMtBetk4dpRQnJrdWPyeLe4)

October 27, 2020

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  $m1\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_topmetr : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_topmetr : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k3\_treal\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_treal\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_treal\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k18\_borsuk\_1 : \iota$  be given. Let  $k19\_borsuk\_1 : \iota$  be given. Let  $k17\_borsuk\_1 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $np\_0 : \iota$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 \\ & X0 X1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k4\_topmetr X0 \\ & X1))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k4\_topmetr X0 \\ & X1)))) \Rightarrow (v5\_pre\_topc (k3\_treal\_1 X0 X1 X2 X3) (k4\_topmetr k6\_numbers \\ & np\_1) (k4\_topmetr X0 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{2}$$

Assume the following.

$$(k18\_borsuk\_1 = k1\_treal\_1 k6\_numbers np\_1) \wedge (k19\_borsuk\_1 = k2\_treal\_1 k6\_numbers np\_1) \tag{3}$$

Assume the following.

$$k4\_topmetr k6\_numbers np\_1 = k17\_borsuk\_1 \tag{4}$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$(m2\_subset\_1 \ np\_0 \ k1\_numbers \ k5\_numbers) \wedge ((m1\_subset\_1 \ np\_0 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_0 \ k1\_numbers)) \quad (6)$$

Assume the following.

$$v1\_xboole\_0 \ np\_0 \quad (7)$$

Assume the following.

$$r1\_xxreal\_0 \ np\_0 \ np\_1 \quad (8)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (9)$$

Assume the following.

$$k5\_topmetr = k17\_borsuk\_1 \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 \ X0) \wedge ((v2\_pre\_topc \ X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 \ X1) \wedge ((v2\_pre\_topc \ X1) \wedge (l1\_pre\_topc \\ & X1))) \Rightarrow (\forall X2. ((\neg v2\_struct\_0 \ X2) \wedge ((v2\_pre\_topc \ X2) \wedge (l1\_pre\_topc \\ & X2)))) \Rightarrow (\forall X3. ((v1\_funct\_1 \ X3) \wedge ((v1\_funct\_2 \ X3 \ (u1\_struct\_0 \\ & X0) \ (u1\_struct\_0 \ X1)) \wedge ((v5\_pre\_topc \ X3 \ X0 \ X1) \wedge (m1\_subset\_1 \ X3 \\ & (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X1)))))) \Rightarrow \\ & (\forall X4. ((v1\_funct\_1 \ X4) \wedge ((v1\_funct\_2 \ X4 \ (u1\_struct\_0 \ X1) \\ & (u1\_struct\_0 \ X2)) \wedge ((v5\_pre\_topc \ X4 \ X1 \ X2) \wedge (m1\_subset\_1 \ X4 \ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 \ (u1\_struct\_0 \ X1) \ (u1\_struct\_0 \ X2)))))) \Rightarrow ((v1\_funct\_1 \\ & (k1\_partfun1 \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X1) \ (u1\_struct\_0 \ X1) \\ & (u1\_struct\_0 \ X2) \ X3 \ X4)) \wedge ((v1\_funct\_2 \ (k1\_partfun1 \ (u1\_struct\_0 \\ & X0) \ (u1\_struct\_0 \ X1) \ (u1\_struct\_0 \ X1) \ (u1\_struct\_0 \ X2) \ X3 \ X4) \ (u1\_struct\_0 \\ & X0) \ (u1\_struct\_0 \ X2)) \wedge ((v5\_pre\_topc \ (k1\_partfun1 \ (u1\_struct\_0 \\ & X0) \ (u1\_struct\_0 \ X1) \ (u1\_struct\_0 \ X1) \ (u1\_struct\_0 \ X2) \ X3 \ X4) \ X0 \\ & X2) \wedge (m1\_subset\_1 \ (k1\_partfun1 \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \\ & X1) \ (u1\_struct\_0 \ X1) \ (u1\_struct\_0 \ X2) \ X3 \ X4) \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \\ & (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X2)))))))))) \end{aligned} \quad (11)$$

Assume the following.

$$(\neg v2\_struct\_0 \ k17\_borsuk\_1) \wedge ((v1\_pre\_topc \ k17\_borsuk\_1) \wedge (v2\_pre\_topc \ k17\_borsuk\_1)) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((l1\_pre\_topc\ X0)\wedge((m1\_subset\_1 \\ & X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(\forall X3. \\ & (m1\_borsuk\_2\ X3\ X0\ X1\ X2)\Rightarrow((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ (u1\_struct\_0 \\ & k5\_topmetr)\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ ( \\ & k2\_zfmisc\_1\ (u1\_struct\_0\ k5\_topmetr)\ (u1\_struct\_0\ X0))))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1\_xreal\_0\ X0)\wedge \\ & ((v1\_xreal\_0\ X1)\wedge((m1\_subset\_1\ X2\ (u1\_struct\_0\ (k4\_topmetr\ X0 \\ & X1))))\wedge(m1\_subset\_1\ X3\ (u1\_struct\_0\ (k4\_topmetr\ X0\ X1))))))\Rightarrow( \\ & (v1\_funct\_1\ (k3\_treal\_1\ X0\ X1\ X2\ X3))\wedge((v1\_funct\_2\ (k3\_treal\_1 \\ & X0\ X1\ X2\ X3)\ (u1\_struct\_0\ (k4\_topmetr\ k6\_numbers\ np\_1))\ (u1\_struct\_0 \\ & (k4\_topmetr\ X0\ X1))))\wedge(m1\_subset\_1\ (k3\_treal\_1\ X0\ X1\ X2\ X3)\ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1\ (u1\_struct\_0\ (k4\_topmetr\ k6\_numbers\ np\_1))\ (u1\_struct\_0 \\ & (k4\_topmetr\ X0\ X1)))))) \end{aligned} \quad (14)$$

Assume the following.

$$m1\_subset\_1\ k19\_borsuk\_1\ (u1\_struct\_0\ k17\_borsuk\_1) \quad (15)$$

Assume the following.

$$m1\_subset\_1\ k18\_borsuk\_1\ (u1\_struct\_0\ k17\_borsuk\_1) \quad (16)$$

Assume the following.

$$l1\_pre\_topc\ k17\_borsuk\_1 \quad (17)$$

Assume the following.

$$k19\_borsuk\_1 = np\_1 \quad (18)$$

Assume the following.

$$k18\_borsuk\_1 = k6\_numbers \quad (19)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xreal\_0\ X0) \quad (20)$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_borsuk\_2 X3 \\
X0 X1 X2) \Rightarrow ((v5\_pre\_topc X3 k5\_topmetr X0) \Rightarrow ((v1\_funct\_1 (k1\_partfun1 \\
& (u1\_struct\_0 (k4\_topmetr k6\_numbers np\_1)) (u1\_struct\_0 (k4\_topmetr \\
& k6\_numbers np\_1)) (u1\_struct\_0 k5\_topmetr) (u1\_struct\_0 X0) \\
& (k3\_treal\_1 k6\_numbers np\_1 (k2\_treal\_1 k6\_numbers np\_1) (k1\_treal\_1 \\
& k6\_numbers np\_1) X3)) \wedge ((v1\_funct\_2 (k1\_partfun1 (u1\_struct\_0 \\
& (k4\_topmetr k6\_numbers np\_1)) (u1\_struct\_0 (k4\_topmetr k6\_numbers \\
& np\_1)) (u1\_struct\_0 k5\_topmetr) (u1\_struct\_0 X0) (k3\_treal\_1 \\
& k6\_numbers np\_1 (k2\_treal\_1 k6\_numbers np\_1) (k1\_treal\_1 k6\_numbers \\
& np\_1) X3) (u1\_struct\_0 k5\_topmetr) (u1\_struct\_0 X0)) \wedge ((v5\_pre\_topc \\
& (k1\_partfun1 (u1\_struct\_0 (k4\_topmetr k6\_numbers np\_1)) (u1\_struct\_0 \\
& (k4\_topmetr k6\_numbers np\_1)) (u1\_struct\_0 k5\_topmetr) (u1\_struct\_0 \\
& X0) (k3\_treal\_1 k6\_numbers np\_1 (k2\_treal\_1 k6\_numbers np\_1) \\
& (k1\_treal\_1 k6\_numbers np\_1) X3) k5\_topmetr X0) \wedge (m1\_subset\_1 \\
& (k1\_partfun1 (u1\_struct\_0 (k4\_topmetr k6\_numbers np\_1)) (u1\_struct\_0 \\
& (k4\_topmetr k6\_numbers np\_1)) (u1\_struct\_0 k5\_topmetr) (u1\_struct\_0 \\
& X0) (k3\_treal\_1 k6\_numbers np\_1 (k2\_treal\_1 k6\_numbers np\_1) \\
& (k1\_treal\_1 k6\_numbers np\_1) X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 k5\_topmetr) (u1\_struct\_0 X0))))))))))
\end{aligned}$$