

# t23\_borsuk\_4 (TMdzEDhuAg- phJkASARtjKQpowuRB9BVvF9F)

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Let  $v1\_xreal\_0 : \iota \Rightarrow o$  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  $k5\_topmetr : \iota$  be given. Let  $k1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_borsuk\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_topmetr : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xxreal\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k17\_borsuk\_1 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  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  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v8\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v1\_compts\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v2\_compts\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow (\forall X3.(v1\_xreal\_0 X3) \Rightarrow (((r1\_xxreal\_0 \\ & X0 X1) \wedge ((r1\_xxreal\_0 X2 X3) \wedge (r1\_xxreal\_0 X1 X2))) \Rightarrow ((v1\_borsuk\_1 \\ & (k4\_topmetr X1 X2) (k4\_topmetr X0 X3)) \wedge (m1\_pre\_topc (k4\_topmetr \\ & X1 X2) (k4\_topmetr X0 X3))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow ((\neg r1\_xxreal\_0 X1 X0) \Rightarrow (k1\_xxreal\_1 X1 X0 = k1\_xboole\_0))) \tag{2}$$

Assume the following.

$$k4\_topmetr k6\_numbers np\_1 = k17\_borsuk\_1 \tag{3}$$

Assume the following.

$$m1\_subset\_1 k1\_xboole\_0 k4\_ordinal1 \tag{4}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Rightarrow (u1\_struct\_0 (k4\_topmetr X0 X1) = k1\_rcomp\_1 X0 X1))) \quad (5)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 (u1\_struct\_0 k5\_topmetr))) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2.(v1\_xreal\_0 X2) \Rightarrow (((r1\_xxreal\_0 X1 X2) \wedge (X0 = k1\_rcomp\_1 X1 X2)) \Rightarrow ((r1\_xxreal\_0 k6\_numbers X1) \wedge (r1\_xxreal\_0 X2 np\_1)))))) \quad (6)$$

Assume the following.

$$((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers)) \quad (7)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (8)$$

Assume the following.

$$k5\_topmetr = k17\_borsuk\_1 \quad (9)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k1\_rcomp\_1 X0 X1 = k1\_xxreal\_1 X0 X1) \quad (11)$$

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.

$$(v8\_pre\_topc k17\_borsuk\_1) \wedge (v1\_compts\_1 k17\_borsuk\_1) \quad (13)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (14)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (15)$$

Assume the following.

$$l1\_pre\_topc k17\_borsuk\_1 \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1. \\ (m1\_pre\_topc\ X1\ X0)\Rightarrow((v1\_borsuk\_1\ X1\ X0)\Leftrightarrow(\forall X2.(m1\_subset\_1 \\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((X2 = u1\_struct\_0\ X1)\Rightarrow(v4\_pre\_topc \\ X2\ X0)))))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers))\Rightarrow(v3\_membered\ X0) \quad (18)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(v1\_xxreal\_0\ X0) \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge((v8\_pre\_topc \\ X0)\wedge(l1\_pre\_topc\ X0))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0)))\Rightarrow((v2\_compts\_1\ X1\ X0)\Rightarrow(v4\_pre\_topc\ X1\ X0))) \end{aligned} \quad (20)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xreal\_0\ X0) \quad (21)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0)))\Rightarrow((v1\_xboole\_0\ X1)\Rightarrow(v2\_compts\_1\ X1\ X0))) \quad (22)$$

Assume the following.

$$\forall X0.(v3\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow \\ (v1\_xreal\_0\ X1)) \quad (23)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v1\_xreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xreal\_0\ X1)\Rightarrow(\forall X2. \\ (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ k5\_topmetr)))\Rightarrow((X2 = \\ k1\_rcomp\_1\ X0\ X1)\Rightarrow(v4\_pre\_topc\ X2\ k5\_topmetr)))) \end{aligned}$$