

## t78\_borsuk\_6

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v1\_borsuk\_2 : \iota \Rightarrow o$  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  $m1\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r4\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_borsuk\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_borsuk\_2 X3 \\ & X0 X1 X2) \Rightarrow (\forall X4.(m1\_borsuk\_2 X4 X0 X1 X2) \Rightarrow (((r1\_borsuk\_6 \\ & X0 X1 X2) \wedge (r3\_borsuk\_2 X0 X1 X2 X3 X4)) \Rightarrow (r3\_borsuk\_2 X0 X2 X1 (k2\_borsuk\_2 \\ & X0 X1 X2 X3) (k2\_borsuk\_2 X0 X1 X2 X4)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2\_struct\_0 \\ & X0) \wedge ((v2\_pre\_topc X0) \wedge ((v1\_borsuk\_2 X0) \wedge (l1\_pre\_topc X0)))) \wedge \\ & ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ((m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \wedge ((m1\_borsuk\_2 X3 X0 X1 X2) \wedge (m1\_borsuk\_2 X4 X0 X1 X2)))) \Rightarrow ( \\ & (r4\_borsuk\_2 X0 X1 X2 X3 X4) \Leftrightarrow (r3\_borsuk\_2 X0 X1 X2 X3 X4)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc \\ & X0) \wedge (l1\_pre\_topc X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ( \\ & m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow ((r1\_borsuk\_6 X0 X1 X2) \Leftrightarrow (r1\_borsuk\_2 \\ & X0 X1 X2)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0 \\ & X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\wedge((m1\_subset\_1\ X1\ ( \\ & u1\_struct\_0\ X0))\wedge((m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\wedge(m1\_borsuk\_2 \\ & X3\ X0\ X1\ X2))))\Rightarrow(m1\_borsuk\_2\ (k2\_borsuk\_2\ X0\ X1\ X2\ X3)\ X0\ X2\ X1) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_pre\_topc\ X0)\Rightarrow((v1\_borsuk\_2\ X0)\Leftrightarrow(\forall X1.( \\ & m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2 \\ & (u1\_struct\_0\ X0))\Rightarrow(r1\_borsuk\_2\ X0\ X1\ X2)))) \end{aligned} \quad (5)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge((v1\_borsuk\_2 \\ & X0)\wedge(l1\_pre\_topc\ X0))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0 \\ & X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3. \\ & (m1\_borsuk\_2\ X3\ X0\ X1\ X2)\Rightarrow(\forall X4.(m1\_borsuk\_2\ X4\ X0\ X1\ X2)\Rightarrow \\ & ((r4\_borsuk\_2\ X0\ X1\ X2\ X3\ X4)\Rightarrow(r4\_borsuk\_2\ X0\ X2\ X1\ (k2\_borsuk\_2 \\ & X0\ X1\ X2\ X3)\ (k2\_borsuk\_2\ X0\ X1\ X2\ X4))))))) \end{aligned}$$