

## t11\_topalg\_6

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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  $v1\_topalg\_6 : \iota \Rightarrow o$  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  $r3\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_topalg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_topalg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_topalg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_borsuk\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_topalg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_topalg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_zfmisc\_1 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (X2 \in u1\_struct\_0 (k5\_topalg\_1 X0 X1)) \Leftrightarrow (\exists X3.(m1\_borsuk\_2 \\ & X3 X0 X1 X1) \wedge (X2 = k6\_eqrel\_1 (k2\_topalg\_1 X0 X1) (k2\_topalg\_1 X0 \\ & X1) (k4\_topalg\_1 X0 X1) X3)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((r1\_borsuk\_6 X0 X1 X2) \Rightarrow (\forall X3. \\ & (m1\_borsuk\_2 X3 X0 X1 X2) \Rightarrow (\forall X4.(m1\_borsuk\_2 X4 X0 X1 X2) \Rightarrow \\ & ((k6\_eqrel\_1 (k1\_topalg\_1 X0 X1 X2) (k1\_topalg\_1 X0 X1 X2) (k3\_topalg\_1 \\ & X0 X1 X2) X3 = k6\_eqrel\_1 (k1\_topalg\_1 X0 X1 X2) (k1\_topalg\_1 X0 X1 \\ & X2) (k3\_topalg\_1 X0 X1 X2) X4) \Leftrightarrow (r3\_borsuk\_2 X0 X1 X2 X3 X4)))))) \end{aligned} \tag{2}$$

Assume the following.

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

Assume the following.

$$\forall X0.((v7\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (v1\_zfmisc\_1 (u1\_struct\_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow ((v15\_algstr\_0 (k5\_topalg\_1 X0 X1)) \wedge (l3\_algstr\_0 (k5\_topalg\_1 X0 X1))) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k4\_topalg\_1 X0 X1 = k3\_topalg\_1 X0 X1 X1)) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k2\_topalg\_1 X0 X1 = k1\_topalg\_1 X0 X1 X1)) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \Rightarrow ((v1\_topalg\_6 X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (v7\_struct\_0 (k5\_topalg\_1 X0 X1)))) \quad (9)$$

Assume the following.

$$\forall X0.(v1\_zfmisc\_1 X0) \Leftrightarrow (\forall X1.\forall X2.((X1 \in X0) \wedge (X2 \in X0)) \Rightarrow (X1 = X2)) \quad (10)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \Rightarrow ((v1\_topalg\_6 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_borsuk\_2 X2 X0 X1 X1) \Rightarrow (\forall X3.(m1\_borsuk\_2 X3 X0 X1 X1) \Rightarrow (r3\_borsuk\_2 X0 X1 X1 X2 X3))))))$$