

## t8\_topalg\_5

(TMaNW5nkHkmEcigHcDR8CddC9BHRsSkE2SZR)

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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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_connsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $g1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_tops\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc X1)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X3.(m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (u1\_struct\_0 X1))) \Rightarrow (((X2 = X3) \wedge (g1\_pre\_topc ( \\ & u1\_struct\_0 X0) (u1\_pre\_topc X0) = g1\_pre\_topc (u1\_struct\_0 X1) \\ & (u1\_pre\_topc X1))) \Rightarrow (k1\_tops\_1 X0 X2 = k1\_tops\_1 X1 X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\ & X0))) \Rightarrow (\forall X2. \forall X3.(g1\_pre\_topc X0 X1 = g1\_pre\_topc \\ & X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_pre\_topc X0) \Rightarrow (m1\_subset\_1 (u1\_pre\_topc X0) (k1\_zfmisc\_1 \\ & (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge \\ & (l1\_pre\_topc X0))) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow (\forall X2. \\ & (m1\_connsp\_2 X2 X0 X1) \Rightarrow (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((m1\_connsp\_2 \\ & X2 X0 X1) \Leftrightarrow (X1 \in k1\_tops\_1 X0 X2)))) \end{aligned} \quad (5)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\ & X1))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4.(m1\_connsp\_2 X4 \\ & X0 X2) \Rightarrow (((g1\_pre\_topc (u1\_struct\_0 X0) (u1\_pre\_topc X0) = g1\_pre\_topc \\ & (u1\_struct\_0 X1) (u1\_pre\_topc X1)) \wedge (X2 = X3)) \Rightarrow (m1\_connsp\_2 X4 \\ & X1 X3)))))) \end{aligned}$$