

# t44\_tops\_3 (TMM- SjSJTqc44gMvBykMELrBwoPmyKmyMJXH)

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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  $k1\_zfmisc.1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct.0 : \iota \Rightarrow \iota$  be given. Let  $v1\_tops.3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_subset.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_tops.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tops.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct.0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset.1 X1 (k1\_zfmisc.1 (u1\_struct.0 \\ & X0))) \Rightarrow ((v1\_tops.1 X1 X0) \Leftrightarrow (\forall X2.(m1\_subset.1 X2 (k1\_zfmisc.1 \\ & (u1\_struct.0 X0)))) \Rightarrow ((v3\_pre\_topc X2 X0) \Rightarrow (k2\_pre\_topc X0 X2 = k2\_pre\_topc \\ & X0 (k9\_subset.1 (u1\_struct.0 X0) X2 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & (m1\_subset.1 X1 (k1\_zfmisc.1 (u1\_struct.0 X0))) \Rightarrow (\forall X2. \\ & (m1\_subset.1 X2 (k1\_zfmisc.1 (u1\_struct.0 X0))) \Rightarrow (k9\_subset.1 \\ & (u1\_struct.0 X0) (k1\_tops.1 X0 X1) (k1\_tops.1 X0 X2) = k1\_tops.1 \\ & X0 (k9\_subset.1 (u1\_struct.0 X0) X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \wedge \\ & (m1\_subset.1 X1 (k1\_zfmisc.1 (u1\_struct.0 X0)))) \Rightarrow (v3\_pre\_topc \\ & (k1\_tops.1 X0 X1) X0) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1\_subset.1 X2 (k1\_zfmisc.1 \\ & X0)) \Rightarrow (m1\_subset.1 (k9\_subset.1 X0 X1 X2) (k1\_zfmisc.1 X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1\_pre\_topc X0) \wedge (m1\_subset.1 X1 (k1\_zfmisc.1 \\ & (u1\_struct.0 X0)))) \Rightarrow (m1\_subset.1 (k1\_tops.1 X0 X1) (k1\_zfmisc.1 \\ & (u1\_struct.0 X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0))) \Rightarrow ((v1\_tops\_3\ X1\ X0) \Leftrightarrow (k2\_pre\_topc\ X0\ (k1\_tops\_1 \\ X0\ X1) = u1\_struct\_0\ X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0))) \Rightarrow ((v1\_tops\_1\ X1\ X0) \Leftrightarrow (k2\_pre\_topc\ X0\ X1 = u1\_struct\_0 \\ X0))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc \\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0 \\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0 \\ X0))) \Rightarrow (((v1\_tops\_3\ X1\ X0) \wedge (v1\_tops\_3\ X2\ X0)) \Rightarrow (v1\_tops\_3\ (k9\_subset\_1 \\ (u1\_struct\_0\ X0)\ X1\ X2)\ X0)))) \end{aligned}$$