

t54\_tops\_1 (TMWSD-  
Npn6dkNpTMQHAb9LJXdiraMvX3Nz5)

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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  $v3\_tops\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_tops\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_tops\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0)))) \Rightarrow (((v1\_tops\_1\ X1\ X0) \wedge (r1\_tarski\ X1\ X2)) \Rightarrow (v1\_tops\_1 \\ X2\ X0)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0))) \Rightarrow (r1\_tarski\ X1\ (k2\_pre\_topc\ X0\ X1))) \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (\forall X2. \\ (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)) \Rightarrow ((r1\_tarski\ X1\ X2) \Leftrightarrow (r1\_tarski \\ (k3\_subset\_1\ X0\ X2)\ (k3\_subset\_1\ X0\ X1)))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (m1\_subset\_1 \\ (k3\_subset\_1\ X0\ X1)\ (k1\_zfmisc\_1\ X0)) \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l1\_pre\_topc\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0)))) \Rightarrow (m1\_subset\_1\ (k2\_pre\_topc\ X0\ X1)\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0))) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((v3\_tops\_1\ X1\ X0) \Leftrightarrow (v2\_tops\_1\ (k2\_pre\_topc\ X0\ X1)\ X0))) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((v2\_tops\_1\ X1\ X0) \Leftrightarrow (v1\_tops\_1\ (k3\_subset\_1\ (u1\_struct\_0\ X0)\ X1)\ X0))) \quad (7)$$

**Theorem 1**

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((v3\_tops\_1\ X1\ X0) \Rightarrow (v1\_tops\_1\ (k3\_subset\_1\ (u1\_struct\_0\ X0)\ X1)\ X0)))$$