

## t19\_tsep\_1

(TMYyEMK2c14bME9jZFxbaWDLA2pk4ib3DeT)

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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  $v1\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & (m1\_pre\_topc X1 X0) \Rightarrow (\forall X2.(m1\_pre\_topc X2 X0) \Rightarrow ((r1\_tarski \\ & (u1\_struct\_0 X1) (u1\_struct\_0 X2)) \Leftrightarrow (m1\_pre\_topc X1 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1\_pre\_topc X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))) \Rightarrow (\forall X2. (m1\_pre\_topc X2 X0) \Rightarrow ((v3\_pre\_topc \\ & X1 X0) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X2))) \Rightarrow ((X3 = X1) \Rightarrow (v3\_pre\_topc X3 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (l1\_pre\_topc X0) \Rightarrow (\forall X1. (m1\_pre\_topc X1 X0) \Rightarrow (m1\_subset\_1 (u1\_struct\_0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (4)$$

Assume the following.

$$\forall X0. (l1\_pre\_topc X0) \Rightarrow (\forall X1. (m1\_pre\_topc X1 X0) \Rightarrow (l1\_pre\_topc X1)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1\_pre\_topc X0) \Rightarrow (\forall X1. (m1\_pre\_topc X1 X0) \Rightarrow \\ & ((v1\_tsep\_1 X1 X0) \Leftrightarrow (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 ( \\ & u1\_struct\_0 X0))) \Rightarrow ((X2 = u1\_struct\_0 X1) \Rightarrow (v3\_pre\_topc X2 X0)))) \end{aligned} \quad (6)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.((v1\_tsep\_1 X1 X0) \wedge (m1\_pre\_topc X1 X0)) \Rightarrow (\forall X2. \\ & ((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0)) \Rightarrow ((r1\_tarski (u1\_struct\_0 \\ & X1) (u1\_struct\_0 X2)) \Rightarrow ((v1\_tsep\_1 X1 X2) \wedge (m1\_pre\_topc X1 X2)))))) \end{aligned}$$