

# t81\_tmap\_1 (TM- NrSMgd3PBSWUaJxWPoJmtDyLxn1qehgQd)

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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  $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  be given. Let  $r1\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & \quad X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\ & \quad X1))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0)) \Rightarrow ( \\ & \quad \quad \forall X3.((\neg v2\_struct\_0 X3) \wedge (m1\_pre\_topc X3 X0)) \Rightarrow (\forall X4. \\ & \quad \quad ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X3) (u1\_struct\_0 \\ & \quad \quad X1)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & \quad \quad X3) (u1\_struct\_0 X1)))))) \Rightarrow (((v1\_tsep\_1 X2 X3) \wedge (m1\_pre\_topc X2 \\ & \quad \quad X3)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X3)) \Rightarrow (\forall X6. \\ & \quad \quad (m1\_subset\_1 X6 (u1\_struct\_0 X2)) \Rightarrow ((X5 = X6) \Rightarrow ((r1\_tmap\_1 X3 X1 \\ & \quad \quad X4 X5) \Leftrightarrow (r1\_tmap\_1 X2 X1 (k3\_tmap\_1 X0 X1 X3 X2 X4) X6)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (m1\_pre\_topc X0 X0) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1. \\ (m1\_pre\_topc\ X1\ X0)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0)))\Rightarrow((X2 = u1\_struct\_0\ X1)\Rightarrow(((v1\_tsep\_1\ X1\ X0)\wedge \\ (m1\_pre\_topc\ X1\ X0))\Leftrightarrow(v3\_pre\_topc\ X2\ X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1 \\ X0)))\Rightarrow(\forall X2.\forall X3.(g1\_pre\_topc\ X0\ X1 = g1\_pre\_topc \\ X2\ X3)\Rightarrow((X0 = X2)\wedge(X1 = X3))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(v3\_pre\_topc \\ (k2\_struct\_0\ X0)\ X0) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(m1\_subset\_1\ (u1\_pre\_topc\ X0)\ (k1\_zfmisc\_1 \\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \quad (7)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_pre\_topc\ X1\ X0)\Rightarrow \\ (l1\_pre\_topc\ X1)) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(l1\_struct\_0\ X0) \quad (9)$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(m1\_subset\_1\ (k2\_struct\_0\ X0)\ (k1\_zfmisc\_1 \\ (u1\_struct\_0\ X0))) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1 \\ X0)))\Rightarrow((v1\_pre\_topc\ (g1\_pre\_topc\ X0\ X1))\wedge(l1\_pre\_topc\ (g1\_pre\_topc \\ X0\ X1))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(k2\_struct\_0\ X0 = u1\_struct\_0\ X0) \quad (12)$$

Assume the following.

$$\forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1. \\ (m1\_pre\_topc\ X1\ X0)\Rightarrow(v2\_pre\_topc\ X1)) \quad (13)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow((v1\_pre\_topc\ X0)\Rightarrow(X0 = g1\_pre\_topc \\ (u1\_struct\_0\ X0)\ (u1\_pre\_topc\ X0))) \quad (14)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\ & X1)))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0))) \Rightarrow ( \\ & \forall X3.((\neg v2\_struct\_0 X3) \wedge (m1\_pre\_topc X3 X0))) \Rightarrow (\forall X4. \\ & ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X3) (u1\_struct\_0 \\ & X1)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & X3) (u1\_struct\_0 X1)))))) \Rightarrow ((g1\_pre\_topc (u1\_struct\_0 X2) (u1\_pre\_topc \\ & X2) = X3) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X3))) \Rightarrow (\forall X6. \\ & (m1\_subset\_1 X6 (u1\_struct\_0 X2))) \Rightarrow (((X5 = X6) \wedge (r1\_tmap\_1 X2 X1 \\ & (k3\_tmap\_1 X0 X1 X3 X2 X4) X6)) \Rightarrow (r1\_tmap\_1 X3 X1 X4 X5)))))) \end{aligned}$$