

# t78\_tmap\_1 (TM- MdES1FV73UoHYMJqKgzXsmr2vm9vsFcnb)

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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  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\
& X1))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0)) \Rightarrow ( \\
& \forall X3.((\neg v2\_struct\_0 X3) \wedge (m1\_pre\_topc X3 X0)) \Rightarrow (\forall X4. \\
& ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X3) (u1\_struct\_0 \\
& X1)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X3) (u1\_struct\_0 X1)))))) \Rightarrow ((m1\_pre\_topc X2 X3) \Rightarrow (\forall X5.( \\
& m1\_subset\_1 X5 (k1\_zfmisc\_1 (u1\_struct\_0 X3))) \Rightarrow (\forall X6.( \\
& m1\_subset\_1 X6 (u1\_struct\_0 X3)) \Rightarrow (\forall X7.(m1\_subset\_1 X7 \\
& (u1\_struct\_0 X2)) \Rightarrow (((v3\_pre\_topc X5 X3) \wedge ((X6 \in X5) \wedge (r1\_tarski \\
& X5 (u1\_struct\_0 X2)) \wedge (X6 = X7)))) \Rightarrow ((r1\_tmap\_1 X3 X1 X4 X6) \Leftrightarrow (r1\_tmap\_1 \\
& X2 X1 (k3\_tmap\_1 X0 X1 X3 X2 X4) X7)))))))))
\end{aligned} \tag{1}$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1. \\ & (m1\_pre\_topc\ X1\ X0)\Rightarrow(\forall X2.(m1\_pre\_topc\ X2\ X0)\Rightarrow((r1\_tarski \\ & (u1\_struct\_0\ X1)\ (u1\_struct\_0\ X2))\Leftrightarrow(m1\_pre\_topc\ X1\ X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2)))\Rightarrow(m1\_subset\_1\ X0\ X2) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ X1))\Leftrightarrow(r1\_tarski\ X0\ X1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ & (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.(m1\_pre\_topc\ X2\ X0)\Rightarrow((v3\_pre\_topc \\ & X1\ X0)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0 \\ & X2))))\Rightarrow((X3 = X1)\Rightarrow(v3\_pre\_topc\ X3\ X2)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarski\ X0\ X1)\wedge(r1\_tarski\ X1\ X2))\Rightarrow(r1\_tarski\ X0\ X2) \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc \\ & X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_pre\_topc\ X1)\wedge(l1\_pre\_topc \\ & X1)))\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge(m1\_pre\_topc\ X2\ X1))\Rightarrow( \\ & \forall X3.((\neg v2\_struct\_0\ X3)\wedge(m1\_pre\_topc\ X3\ X1))\Rightarrow(\forall X4. \\ & ((v1\_funct\_1\ X4)\wedge((v1\_funct\_2\ X4\ (u1\_struct\_0\ X3)\ (u1\_struct\_0 \\ & X0))\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0 \\ & X3)\ (u1\_struct\_0\ X0))))))\Rightarrow((m1\_pre\_topc\ X2\ X3)\Rightarrow(\forall X5.( \\ & m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X1)))\Rightarrow(\forall X6.( \\ & m1\_subset\_1\ X6\ (u1\_struct\_0\ X3))\Rightarrow(\forall X7.(m1\_subset\_1\ X7 \\ & (u1\_struct\_0\ X2))\Rightarrow(((v3\_pre\_topc\ X5\ X1)\wedge((X6 \in X5)\wedge((r1\_tarski \\ & X5\ (u1\_struct\_0\ X2))\wedge(X6 = X7))))\Rightarrow((r1\_tmap\_1\ X3\ X0\ X4\ X6)\Leftrightarrow(r1\_tmap\_1 \\ & X2\ X0\ (k3\_tmap\_1\ X1\ X0\ X3\ X2\ X4)\ X7)))))))))) \end{aligned}$$