

# t51\_tmap\_1

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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  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  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  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\
& X1)))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))) \Rightarrow ((v5\_pre\_topc X2 X1 X0) \Leftrightarrow \\
& (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (r1\_tmap\_1 X1 X0 \\
& X2 X3))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\
& ((\neg v1\_xboole\_0 X1)\wedge(\neg v1\_xboole\_0 X3)\wedge(((v1\_funct\_1 X4)\wedge((v1\_funct\_2 X4 X0 X1)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\wedge((v1\_funct\_1 X5)\wedge((v1\_funct\_2 X5 X2 X3)\wedge(m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X2 X3))))))\Rightarrow((r1\_funct\_2 X0 X1 X2 X3 X4 X5)\Leftrightarrow(X4 = X5))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0)\Rightarrow(l1\_struct\_0 X0) \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_pre\_topc X0)\wedge(l1\_pre\_topc X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge((v2\_pre\_topc X1)\wedge(l1\_pre\_topc X1))))\Rightarrow(\forall X2.((\neg v2\_struct\_0 X2)\wedge((v2\_pre\_topc X2)\wedge(l1\_pre\_topc X2))))\Rightarrow(((u1\_struct\_0 X1 = u1\_struct\_0 X2)\wedge(r1\_tarski (u1\_pre\_topc X2) (u1\_pre\_topc X1))))\Rightarrow(\forall X3.((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (u1\_struct\_0 X0) (u1\_struct\_0 X1))\wedge((v5\_pre\_topc X3 X0 X1)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1))))))\Rightarrow((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (u1\_struct\_0 X0) (u1\_struct\_0 X2))\wedge((v5\_pre\_topc X3 X0 X2)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X2))))))))))
\end{aligned}$$