

# t133\_tmap\_1

## (TMUbCE3L59dkDrvngxqFeuY2SYoJLrJzgsCe)

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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  $r1\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $r4\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $k2\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\
& X1))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0)) \Rightarrow ( \\
& \forall X3.((\neg v2\_struct\_0 X3) \wedge (m1\_pre\_topc X3 X0)) \Rightarrow ((r4\_tsep\_1 \\
& X0 X2 X3) \Rightarrow (\forall X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 \\
& (k1\_tsep\_1 X0 X2 X3)) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 (k1\_tsep\_1 X0 X2 X3)) (u1\_struct\_0 X1)))))) \Rightarrow \\
& (((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 (k1\_tsep\_1 X0 \\
& X2 X3)) (u1\_struct\_0 X1)) \wedge ((v5\_pre\_topc X4 (k1\_tsep\_1 X0 X2 X3) \\
& X1) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 ( \\
& k1\_tsep\_1 X0 X2 X3)) (u1\_struct\_0 X1)))))) \Leftrightarrow (((v1\_funct\_1 (k3\_tmap\_1 \\
& X0 X1 (k1\_tsep\_1 X0 X2 X3) X2 X4) \wedge ((v1\_funct\_2 (k3\_tmap\_1 X0 X1 ( \\
& k1\_tsep\_1 X0 X2 X3) X2 X4) (u1\_struct\_0 X2) (u1\_struct\_0 X1)) \wedge (( \\
& v5\_pre\_topc (k3\_tmap\_1 X0 X1 (k1\_tsep\_1 X0 X2 X3) X2 X4) X2 X1) \wedge (m1\_subset\_1 \\
& (k3\_tmap\_1 X0 X1 (k1\_tsep\_1 X0 X2 X3) X2 X4) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X2) (u1\_struct\_0 X1)))))) \wedge ((v1\_funct\_1 (k3\_tmap\_1 \\
& X0 X1 (k1\_tsep\_1 X0 X2 X3) X3 X4) \wedge ((v1\_funct\_2 (k3\_tmap\_1 X0 X1 ( \\
& k1\_tsep\_1 X0 X2 X3) X3 X4) (u1\_struct\_0 X3) (u1\_struct\_0 X1)) \wedge (( \\
& v5\_pre\_topc (k3\_tmap\_1 X0 X1 (k1\_tsep\_1 X0 X2 X3) X3 X4) X3 X1) \wedge (m1\_subset\_1 \\
& (k3\_tmap\_1 X0 X1 (k1\_tsep\_1 X0 X2 X3) X3 X4) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X3) (u1\_struct\_0 X1)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1)))) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow ((r2\_funct\_2 X0 X1 X2 \\ & X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((\neg v2\_struct\_0 \\ & X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \wedge (((\neg v2\_struct\_0 X1) \wedge \\ & ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc X1))) \wedge ((m1\_pre\_topc X2 X0) \wedge \\ & (m1\_pre\_topc X3 X0) \wedge ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 \\ & X2) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X2) (u1\_struct\_0 X1)))))))))) \Rightarrow ((v1\_funct\_1 (k3\_tmap\_1 \\ & X0 X1 X2 X3 X4) \wedge ((v1\_funct\_2 (k3\_tmap\_1 X0 X1 X2 X3 X4) (u1\_struct\_0 \\ & X3) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 (k3\_tmap\_1 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X3) (u1\_struct\_0 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (l1\_pre\_topc \\ & X0)) \wedge (((\neg v2\_struct\_0 X1) \wedge (m1\_pre\_topc X1 X0)) \wedge ((\neg v2\_struct\_0 \\ & X2) \wedge (m1\_pre\_topc X2 X0)))) \Rightarrow ((\neg v2\_struct\_0 (k1\_tsep\_1 X0 X1 X2)) \wedge \\ & ((v1\_pre\_topc (k1\_tsep\_1 X0 X1 X2)) \wedge (m1\_pre\_topc (k1\_tsep\_1 X0 \\ & X1 X2) X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & (((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \wedge ( \\ & ((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc X1))) \wedge (( \\ & (\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0)) \wedge (((\neg v2\_struct\_0 X3) \wedge \\ & (m1\_pre\_topc X3 X0)) \wedge ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 \\ & X2) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X2) (u1\_struct\_0 X1)))))) \wedge ((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 \\ & X5 (u1\_struct\_0 X3) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X3) (u1\_struct\_0 X1)))))))))) \Rightarrow (( \\ & v1\_funct\_1 (k10\_tmap\_1 X0 X1 X2 X3 X4 X5) \wedge ((v1\_funct\_2 (k10\_tmap\_1 \\ & X0 X1 X2 X3 X4 X5) (u1\_struct\_0 (k1\_tsep\_1 X0 X2 X3)) (u1\_struct\_0 \\ & X1)) \wedge (m1\_subset\_1 (k10\_tmap\_1 X0 X1 X2 X3 X4 X5) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 (k1\_tsep\_1 X0 X2 X3)) (u1\_struct\_0 X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\
& X1))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0)) \Rightarrow ( \\
& \forall X3.((\neg v2\_struct\_0 X3) \wedge (m1\_pre\_topc X3 X0)) \Rightarrow (\forall X4. \\
& ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X2) (u1\_struct\_0 \\
& X1)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X2) (u1\_struct\_0 X1)))))) \Rightarrow (\forall X5.((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 \\
& X5 (u1\_struct\_0 X3) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X3) (u1\_struct\_0 X1)))))) \Rightarrow (((r1\_tsep\_1 \\
& X2 X3) \vee (r2\_funct\_2 (u1\_struct\_0 (k2\_tsep\_1 X0 X2 X3)) (u1\_struct\_0 \\
& X1) (k3\_tmap\_1 X0 X1 X2 (k2\_tsep\_1 X0 X2 X3) X4) (k3\_tmap\_1 X0 X1 X3 \\
& (k2\_tsep\_1 X0 X2 X3) X5))) \Rightarrow (\forall X6.((v1\_funct\_1 X6) \wedge ((v1\_funct\_2 \\
& X6 (u1\_struct\_0 (k1\_tsep\_1 X0 X2 X3)) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\
& X6 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 (k1\_tsep\_1 X0 X2 X3)) \\
& (u1\_struct\_0 X1)))))) \Rightarrow ((X6 = k10\_tmap\_1 X0 X1 X2 X3 X4 X5) \Leftrightarrow ((r2\_funct\_2 \\
& (u1\_struct\_0 X2) (u1\_struct\_0 X1) (k3\_tmap\_1 X0 X1 (k1\_tsep\_1 X0 \\
& X2 X3) X2 X6) X4) \wedge (r2\_funct\_2 (u1\_struct\_0 X3) (u1\_struct\_0 X1) \\
& (k3\_tmap\_1 X0 X1 (k1\_tsep\_1 X0 X2 X3) X3 X6) X5))))))))) \\
& \tag{6}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\
& X1))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0)) \Rightarrow ( \\
& \forall X3.((\neg v2\_struct\_0 X3) \wedge (m1\_pre\_topc X3 X0)) \Rightarrow ((r1\_tsep\_1 \\
& X2 X3) \Rightarrow (\forall X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 \\
& X2) (u1\_struct\_0 X1)) \wedge ((v5\_pre\_topc X4 X2 X1) \wedge (m1\_subset\_1 X4 \\
& (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X2) (u1\_struct\_0 X1)))))) \Rightarrow \\
& (\forall X5.((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 X5 (u1\_struct\_0 X3) \\
& (u1\_struct\_0 X1)) \wedge ((v5\_pre\_topc X5 X3 X1) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X3) (u1\_struct\_0 X1)))))) \Rightarrow ((r4\_tsep\_1 \\
& X0 X2 X3) \Rightarrow ((v1\_funct\_1 (k10\_tmap\_1 X0 X1 X2 X3 X4 X5)) \wedge ((v1\_funct\_2 \\
& (k10\_tmap\_1 X0 X1 X2 X3 X4 X5) (u1\_struct\_0 (k1\_tsep\_1 X0 X2 X3)) ( \\
& u1\_struct\_0 X1)) \wedge ((v5\_pre\_topc (k10\_tmap\_1 X0 X1 X2 X3 X4 X5) (k1\_tsep\_1 \\
& X0 X2 X3) X1) \wedge (m1\_subset\_1 (k10\_tmap\_1 X0 X1 X2 X3 X4 X5) (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 (k1\_tsep\_1 X0 X2 X3)) (u1\_struct\_0 X1)))))))))
\end{aligned}$$