

t75\_tmap\_1  
(TMQPWBfStsZjxjapRHdrJ5sszsEBPtfPEgR)

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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  $r1\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\
& X1)))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0))) \Rightarrow ( \\
& \forall X3.((\neg v2\_struct\_0 X3) \wedge (m1\_pre\_topc X3 X0))) \Rightarrow (\forall X4. \\
& ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1)))))) \Rightarrow ((m1\_pre\_topc X2 X3) \Rightarrow (r2\_funct\_2 ( \\
& u1\_struct\_0 X2) (u1\_struct\_0 X1) (k3\_tmap\_1 X0 X1 X3 X2 (k2\_tmap\_1 \\
& X0 X1 X4 X3)) (k2\_tmap\_1 X0 X1 X4 X2))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X2)\wedge \\ & ((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1)))))\wedge((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\Rightarrow((r2\_funct\_2 X0 X1 X2 \\ & X3)\Leftrightarrow(X2 = X3)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1\_funct\_1 X2)\wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow(k2\_partfun1 \\ & X0 X1 X2 X3 = k5\_relat\_1 X2 X3) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_pre\_topc X0)\Rightarrow(\forall X1.(m1\_pre\_topc X1 X0)\Rightarrow \\ & (l1\_pre\_topc X1)) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0)\Rightarrow(l1\_struct\_0 X0) \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2\_struct\_0 \\ & X0)\wedge((v2\_pre\_topc X0)\wedge(l1\_pre\_topc X0)))\wedge(((\neg v2\_struct\_0 X1)\wedge \\ & ((v2\_pre\_topc X1)\wedge(l1\_pre\_topc X1)))\wedge((m1\_pre\_topc X2 X0)\wedge( \\ & (m1\_pre\_topc X3 X0)\wedge((v1\_funct\_1 X4)\wedge((v1\_funct\_2 X4 (u1\_struct\_0 \\ & X2) (u1\_struct\_0 X1))\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X2) (u1\_struct\_0 X1))))))))))\Rightarrow((v1\_funct\_1 (k3\_tmap\_1 \\ & X0 X1 X2 X3 X4)\wedge((v1\_funct\_2 (k3\_tmap\_1 X0 X1 X2 X3 X4) (u1\_struct\_0 \\ & X3) (u1\_struct\_0 X1))\wedge(m1\_subset\_1 (k3\_tmap\_1 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X3) (u1\_struct\_0 X1)))))) \end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((l1\_struct\_0 X0)\wedge \\ & ((l1\_struct\_0 X1)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X1))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 X1))))))\wedge(l1\_struct\_0 X3))))\Rightarrow \\ & ((v1\_funct\_1 (k2\_tmap\_1 X0 X1 X2 X3)\wedge((v1\_funct\_2 (k2\_tmap\_1 \\ & X0 X1 X2 X3) (u1\_struct\_0 X3) (u1\_struct\_0 X1))\wedge(m1\_subset\_1 (k2\_tmap\_1 \\ & X0 X1 X2 X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X3) (u1\_struct\_0 \\ & X1)))))) \end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1\_funct\_1 X2) \wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((v1\_funct\_1 \\ & (k2\_partfun1 X0 X1 X2 X3)) \wedge (m1\_subset\_1 (k2\_partfun1 X0 X1 X2 X3) \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\ & X1)))) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow (\forall X3. (m1\_pre\_topc \\ & X3 X0) \Rightarrow (k2\_tmap\_1 X0 X1 X2 X3 = k2\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X1) X2 (u1\_struct\_0 X3)))))) \end{aligned} \quad (10)$$

**Theorem 1**

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