

# t64\_tmap\_1

## (TMcsHW75faie7gvhtmegwRGS9kfd4iitvRg)

October 27, 2020

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  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $k2\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\
& X1))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((v2\_pre\_topc X2) \wedge (l1\_pre\_topc \\
& X2)))) \Rightarrow (\forall X3.((\neg v2\_struct\_0 X3) \wedge (m1\_pre\_topc X3 X0)) \Rightarrow ( \\
& \forall X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X1) \\
& (u1\_struct\_0 X2)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X1) (u1\_struct\_0 X2)))))) \Rightarrow (\forall X5.((v1\_funct\_1 \\
& X5) \wedge ((v1\_funct\_2 X5 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\
& X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow \\
& (((v5\_pre\_topc X4 X1 X2) \wedge (v5\_pre\_topc (k2\_tmap\_1 X0 X1 X5 X3) X3 \\
& X1)) \Rightarrow (v5\_pre\_topc (k2\_tmap\_1 X0 X2 (k1\_partfun1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1) (u1\_struct\_0 X1) (u1\_struct\_0 X2) X5 X4) X3 \\
& X3 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& (((v1\_funct\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X1)))) \wedge ((v1\_funct\_1 X5) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X2 X3)))) \Rightarrow (k1\_partfun1 X0 X1 X2 X3 X4 X5 = k3\_relat\_1 X4 X5)
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0 \\ & X1)\wedge(((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 X3 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\wedge((v1\_funct\_1 X4)\wedge((v1\_funct\_2 \\ & X4 X1 X2)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X2))))))\Rightarrow \\ & ((v1\_funct\_1 (k3\_relat\_1 X3 X4))\wedge(v1\_funct\_2 (k3\_relat\_1 X3 X4) \\ & X0 X2)) \end{aligned} \tag{3}$$

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.

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

Assume the following.

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

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & (((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1))))\wedge((v1\_funct\_1 X5)\wedge(m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X2 X3))))\Rightarrow((v1\_funct\_1 (k1\_partfun1 X0 X1 X2 X3 X4 X5))\wedge(m1\_subset\_1 \\ & (k1\_partfun1 X0 X1 X2 X3 X4 X5) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X3)))) \end{aligned} \tag{8}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\
& X1))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((v2\_pre\_topc X2) \wedge (l1\_pre\_topc \\
& X2)))) \Rightarrow (\forall X3.((\neg v2\_struct\_0 X3) \wedge (m1\_pre\_topc X3 X0)) \Rightarrow ( \\
& \forall X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X1) \\
& (u1\_struct\_0 X2)) \wedge ((v5\_pre\_topc X4 X1 X2) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X2)))))) \Rightarrow (\forall X5. \\
& ((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 X5 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1)) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1)))))) \Rightarrow (((v1\_funct\_1 (k2\_tmap\_1 X0 X1 X5 X3)) \wedge \\
& ((v1\_funct\_2 (k2\_tmap\_1 X0 X1 X5 X3) (u1\_struct\_0 X3) (u1\_struct\_0 \\
& X1)) \wedge ((v5\_pre\_topc (k2\_tmap\_1 X0 X1 X5 X3) X3 X1) \wedge (m1\_subset\_1 \\
& (k2\_tmap\_1 X0 X1 X5 X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X3) (u1\_struct\_0 X1)))))) \Rightarrow ((v1\_funct\_1 (k2\_tmap\_1 X0 X2 (k1\_partfun1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X1) (u1\_struct\_0 X1) (u1\_struct\_0 \\
& X2) X5 X4) X3)) \wedge ((v1\_funct\_2 (k2\_tmap\_1 X0 X2 (k1\_partfun1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1) (u1\_struct\_0 X1) (u1\_struct\_0 X2) X5 X4) X3) \\
& (u1\_struct\_0 X3) (u1\_struct\_0 X2)) \wedge ((v5\_pre\_topc (k2\_tmap\_1 \\
& X0 X2 (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X2) X5 X4) X3) X3 X2) \wedge (m1\_subset\_1 (k2\_tmap\_1 X0 \\
& X2 (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X2) X5 X4) X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X3) (u1\_struct\_0 X2))))))))))
\end{aligned}$$