

t26\_topgrp\_1  
(TMRRLzVCQjsu3PztrojLNdaQHe97ZAq7ba)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  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  $v3\_tops\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_tops\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& (l1\_pre\_topc X1)) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
& X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((v3\_tops\_2 \\
& X2 X0 X1) \Leftrightarrow ((k1\_relset\_1 (u1\_struct\_0 X0) X2 = k2\_struct\_0 X0) \wedge ( \\
& (k2\_relset\_1 (u1\_struct\_0 X1) X2 = k2\_struct\_0 X1) \wedge ((v2\_funct\_1 \\
& X2) \wedge (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\
& ((v4\_pre\_topc X3 X0) \Leftrightarrow (v4\_pre\_topc (k7\_relset\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1) X2 X3) X1))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& (l1\_pre\_topc X1)) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
& X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((v3\_tops\_2 \\
& X2 X0 X1) \Rightarrow (v3\_tops\_2 (k2\_tops\_2 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1) X2) X1 X0)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_struct\_0 X0) \Rightarrow (\forall X1.(l1\_struct\_0 X1) \Rightarrow (\forall X2. \\
& ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1)))))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X1))) \Rightarrow (((k2\_relset\_1 (u1\_struct\_0 X1) X2 = k2\_struct\_0 \\
& X1) \wedge (v2\_funct\_1 X2)) \Rightarrow (k8\_relset\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1) X2 X3 = k7\_relset\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0) (k2\_tops\_2 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2) X3))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_struct\_0 X0) \Rightarrow (\forall X1.(l1\_struct\_0 X1) \Rightarrow (\forall X2. \\
& ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1)))))) \Rightarrow (((k2\_relset\_1 (u1\_struct\_0 X1) X2 = \\
& k2\_struct\_0 X1) \wedge (v2\_funct\_1 X2)) \Rightarrow (v2\_funct\_1 (k2\_tops\_2 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1) X2))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_struct\_0 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& (l1\_struct\_0 X1)) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
& X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow (((k2\_relset\_1 \\
& (u1\_struct\_0 X1) X2 = k2\_struct\_0 X1) \wedge (v2\_funct\_1 X2)) \Rightarrow ((k1\_relset\_1 \\
& (u1\_struct\_0 X1) (k2\_tops\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X1) \\
& X2) = k2\_struct\_0 X1) \wedge (k2\_relset\_1 (u1\_struct\_0 X0) (k2\_tops\_2 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2) = k2\_struct\_0 X0))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge (l1\_pre\_topc X1)) \Rightarrow (\forall X2.((v1\_funct\_1 \\
& X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow \\
& ((v3\_tops\_2 X2 X0 X1) \Leftrightarrow ((k1\_relset\_1 (u1\_struct\_0 X0) X2 = k2\_struct\_0 \\
& X0) \wedge ((k2\_relset\_1 (u1\_struct\_0 X1) X2 = k2\_struct\_0 X1) \wedge ((v2\_funct\_1 \\
& X2) \wedge (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\
& ((v3\_pre\_topc X3 X0) \Leftrightarrow (v3\_pre\_topc (k7\_relset\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1) X2 X3) X1))))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 \\ & X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow \\ & ((v1\_funct\_1 (k2\_tops\_2 X0 X1 X2))\wedge((v1\_funct\_2 (k2\_tops\_2 X0 \\ & X1 X2) X1 X0)\wedge(m1\_subset\_1 (k2\_tops\_2 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X1 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_pre\_topc X0)\Rightarrow(\forall X1.(l1\_pre\_topc X1)\Rightarrow(\forall X2. \\ & ((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X1))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X1))))))\Rightarrow((v5\_pre\_topc X2 X0 X1)\Leftrightarrow(\forall X3. \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X1)))\Rightarrow((v4\_pre\_topc \\ & X3 X1)\Rightarrow(v4\_pre\_topc (k8\_relset\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X1) X2 X3) X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_pre\_topc X0)\Rightarrow(\forall X1.(l1\_pre\_topc X1)\Rightarrow(\forall X2. \\ & ((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X1))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X1))))))\Rightarrow((v3\_tops\_2 X2 X0 X1)\Leftrightarrow((k1\_relset\_1 \\ & (u1\_struct\_0 X0) X2 = k2\_struct\_0 X0)\wedge((k2\_relset\_1 (u1\_struct\_0 \\ & X1) X2 = k2\_struct\_0 X1)\wedge((v2\_funct\_1 X2)\wedge((v5\_pre\_topc X2 X0 X1)\wedge \\ & (v5\_pre\_topc (k2\_tops\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2) \\ & X1 X0))))))))) \end{aligned} \quad (10)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_pre\_topc X0))\Rightarrow(\forall X1. \\ & ((\neg v2\_struct\_0 X1)\wedge(l1\_pre\_topc X1))\Rightarrow(\forall X2.((v1\_funct\_1 \\ & X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1))\wedge(m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1))))))\Rightarrow \\ & ((v3\_tops\_2 X2 X0 X1)\Leftrightarrow((k1\_relset\_1 (u1\_struct\_0 X0) X2 = k2\_struct\_0 \\ & X0)\wedge((k2\_relset\_1 (u1\_struct\_0 X1) X2 = k2\_struct\_0 X1)\wedge((v2\_funct\_1 \\ & X2)\wedge(\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X1)))\Rightarrow \\ & ((v3\_pre\_topc X3 X1)\Leftrightarrow(v3\_pre\_topc (k8\_relset\_1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X1) X2 X3) X0))))))))) \end{aligned}$$