

t1\_goboard9  
(TMFb1Am5e5zsoFK6q8HkQQ1vx4JUuqCB6u7)

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Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r3\_connsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_connsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $k1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\neg (v3\_connsp\_1 \\ & X1 X0) \wedge ((v3\_connsp\_1 X2 X0) \wedge ((X1 \neq X2) \wedge (\neg r1\_xboole\_0 X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (r1\_xboole\_0 X0 X1) \Rightarrow (r1\_xboole\_0 X1 X0) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow ((v1\_pre\_topc \\ & (k1\_pre\_topc X0 X1)) \wedge (v2\_pre\_topc (k1\_pre\_topc X0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (l1\_pre\_topc X0) \Rightarrow (\forall X1. (m1\_pre\_topc X1 X0) \Rightarrow (l1\_pre\_topc X1)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1\_pre\_topc X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0)))) \Rightarrow ((v1\_pre\_topc (k1\_pre\_topc X0 X1)) \wedge (m1\_pre\_topc \\ & (k1\_pre\_topc X0 X1) X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\
& \quad (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1 \\
& \quad (u1\_struct\_0\ X0))) \Rightarrow ((r3\_connsp\_1\ X0\ X1\ X2) \Leftrightarrow (\exists X3.(m1\_subset\_1\ X3 \\
& \quad (k1\_zfmisc\_1\ (u1\_struct\_0\ (k1\_pre\_topc\ X0\ X1)))) \wedge ((X3 = X2) \wedge \\
& \quad (v3\_connsp\_1\ X3\ (k1\_pre\_topc\ X0\ X1))))))
\end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow (\forall X1. \\
& \quad (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2. \\
& \quad (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X3. \\
& \quad (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\neg(r3\_connsp\_1 \\
& \quad X0\ X3\ X1) \wedge (r3\_connsp\_1\ X0\ X3\ X2) \wedge ((X1 \neq X2) \wedge (\neg r1\_xboole\_0\ X1\ X2))))))
\end{aligned}$$