

t1\_tex\_3 (TM-  
SJSNnGoU1wNCMuEKwQQAhVeRUmremaExj)

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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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r2\_tsep\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $r1\_tsep\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow ((r1\_tsep\_2 \\ & X0 X1 X2) \Rightarrow ((X1 = k3\_subset\_1 (u1\_struct\_0 X0) X2) \wedge (X2 = k3\_subset\_1 \\ & (u1\_struct\_0 X0) X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))) \Rightarrow (((X1 = k1\_struct\_0 X0) \Rightarrow (k3\_subset\_1 (u1\_struct\_0 \\ & X0) X1 = k2\_struct\_0 X0)) \wedge (((k3\_subset\_1 (u1\_struct\_0 X0) X1 = k2\_struct\_0 \\ & X0) \Rightarrow (X1 = k1\_struct\_0 X0)) \wedge (((X1 = k1\_xboole\_0) \Rightarrow (k3\_subset\_1 \\ & (u1\_struct\_0 X0) X1 = u1\_struct\_0 X0)) \wedge ((k3\_subset\_1 (u1\_struct\_0 \\ & X0) X1 = u1\_struct\_0 X0) \Rightarrow (X1 = k1\_xboole\_0))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 \\ & X0)) \wedge ((m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow ((r2\_tsep\_2 X0 X1 X2) \Leftrightarrow (r1\_tsep\_2 \\ & X0 X1 X2)) \end{aligned} \quad (4)$$

Assume the following.

$$v1\_xboole\_0 \ k1\_xboole\_0 \tag{5}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ X0)) \Rightarrow ((v1\_subset\_1 \ X1 \ X0) \Leftrightarrow (X1 \neq X0)) \tag{7}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 \ X0) \wedge ((v2\_pre\_topc \ X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (u1\_struct\_0 \\ & X0))) \Rightarrow (\forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (u1\_struct\_0 \\ & X0)))) \Rightarrow ((r2\_tsep\_2 \ X0 \ X1 \ X2) \Rightarrow ((\neg v1\_xboole\_0 \ X1) \Leftrightarrow (v1\_subset\_1 \\ & X2 \ (u1\_struct\_0 \ X0)))))) \end{aligned}$$