

t22\_yellow19  
(TMaeG6XnP2JQgYC1JJNyufSwfPUUizHJs7S)

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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  $k2\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v7\_waybel\_0 : \iota \Rightarrow o$  be given. Let  $v3\_yellow\_6 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_yellow\_6 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $r3\_waybel\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_yellow\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v7\_waybel\_0 X1) \wedge (l1\_waybel\_0 X1 X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\neg(r3\_waybel\_9 X0 X1 X2) \wedge (\forall X3. (m2\_yellow\_6 X3 X0 X1) \Rightarrow (\neg X2 \in k10\_yellow\_6 X0 X3)))))) \quad (4) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v7\_waybel\_0 X1) \wedge (l1\_waybel\_0 X1 X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((X2 \in k10\_yellow\_6 X0 X1) \Rightarrow (r3\_waybel\_9 X0 X1 X2)))) \quad (5) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((X2 \in k2\_pre\_topc \\ & X0 X1) \Leftrightarrow (\exists X3.((\neg v2\_struct\_0 X3) \wedge ((v4\_orders\_2 X3) \wedge ((v7\_waybel\_0 \\ & X3) \wedge (l1\_waybel\_0 X3 X0)))) \wedge ((r1\_waybel\_0 X0 X3 X1) \wedge (r3\_waybel\_9 \\ & X0 X3 X2)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\forall X1. \\ & \forall X2.((\neg v2\_struct\_0 X2) \wedge ((v4\_orders\_2 X2) \wedge ((v7\_waybel\_0 \\ & X2) \wedge (l1\_waybel\_0 X2 X0)))) \Rightarrow ((r1\_waybel\_0 X0 X2 X1) \Rightarrow (\forall X3. \\ & (m2\_yellow\_6 X3 X0 X2) \Rightarrow (r1\_waybel\_0 X0 X3 X1)))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. \exists X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \wedge (v1\_xboole\_0 X1) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \wedge \\ & ((\neg v2\_struct\_0 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v7\_waybel\_0 X1) \wedge (l1\_waybel\_0 \\ & X1 X0)))) \Rightarrow (\forall X2.(m2\_yellow\_6 X2 X0 X1) \Rightarrow ((\neg v2\_struct\_0 \\ & X2) \wedge ((v4\_orders\_2 X2) \wedge ((v7\_waybel\_0 X2) \wedge (l1\_waybel\_0 X2 X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(((l1\_pre\_topc X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 (k2\_pre\_topc X0 X1) (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0)))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v7\_waybel\_0 \\ & X1) \wedge (l1\_waybel\_0 X1 X0)))) \Rightarrow ((v3\_yellow\_6 X1 X0) \Leftrightarrow (k10\_yellow\_6 \\ & X0 X1 \neq k1\_xboole\_0))) \end{aligned} \quad (12)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((X2 \in k2\_pre\_topc \\ & X0 X1) \Leftrightarrow (\exists X3.((\neg v2\_struct\_0 X3) \wedge ((v4\_orders\_2 X3) \wedge ((v7\_waybel\_0 \\ & X3) \wedge ((v3\_yellow\_6 X3 X0) \wedge (l1\_waybel\_0 X3 X0)))))) \wedge ((r1\_waybel\_0 \\ & X0 X3 X1) \wedge (X2 \in k10\_yellow\_6 X0 X3)))))) \end{aligned}$$