

## t24\_waybel\_9

(TMWU7o6TVQifGhqkiJmpxaAC1WcwKwCWe6s)

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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v4\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v7\_waybel\_0 : \iota \Rightarrow o$  be given. Let  $l1\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_yellow\_6 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $r1\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_tops\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_connsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_waybel\_0 X1 X0)) \Rightarrow (r1\_waybel\_0 X0 X1 (k2\_relset\_1 \\ & (u1\_struct\_0 X0) (u1\_waybel\_0 X0 X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1\_pre\_topc X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow ((X2 \in k2\_pre\_topc X0 X1) \Leftrightarrow ((\neg v2\_struct\_0 X0) \wedge (\forall X3. \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\neg (v3\_pre\_topc \\ & X3 X0) \wedge ((X2 \in X3) \wedge (r1\_xboole\_0 X1 X3)))))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & (l1\_pre\_topc X1) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X1))) \Rightarrow (((v3\_pre\_topc X3 X1) \Rightarrow (k1\_tops\_1 X1 X3 = X3)) \wedge ((k1\_tops\_1 \\ & X0 X2 = X2) \Rightarrow (v3\_pre\_topc X2 X0)))))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v7\_waybel\_0 X1) \wedge (l1\_waybel\_0 \\ & X1 X0)))) \Rightarrow (\forall X2. \forall X3. \neg (r1\_waybel\_0 X0 X1 X2) \wedge ((r1\_waybel\_0 \\ & X0 X1 X3) \wedge (r1\_xboole\_0 X2 X3))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge \\ & (l1\_pre\_topc X0))) \wedge ((\neg v2\_struct\_0 X1) \wedge ((v4\_orders\_2 X1) \wedge (( \\ & v7\_waybel\_0 X1) \wedge (l1\_waybel\_0 X1 X0)))) \Rightarrow (m1\_subset\_1 (k10\_yellow\_6 \\ & X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((m1\_connsp\_2 \\ & X2 X0 X1) \Leftrightarrow (X1 \in k1\_tops\_1 X0 X2))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v7\_waybel\_0 \\ & X1) \wedge (l1\_waybel\_0 X1 X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))) \Rightarrow ((X2 = k10\_yellow\_6 X0 X1) \Leftrightarrow (\forall X3. (m1\_subset\_1 \\ & X3 (u1\_struct\_0 X0)) \Rightarrow ((X3 \in X2) \Leftrightarrow (\forall X4. (m1\_connsp\_2 X4 X0 \\ & X3) \Rightarrow (r1\_waybel\_0 X0 X1 X4)))))) \end{aligned} \quad (9)$$

### Theorem 1

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