

## t7\_waybel30

(TMUbSnrnAryJLZ7Xe7YDsaRsqTAdRbxDmjS)

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Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v3\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v4\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v5\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v1\_lattice3 : \iota \Rightarrow o$  be given. Let  $v2\_lattice3 : \iota \Rightarrow o$  be given. Let  $v3\_lattice3 : \iota \Rightarrow o$  be given. Let  $v2\_waybel19 : \iota \Rightarrow o$  be given. Let  $l1\_waybel\_9 : \iota \Rightarrow o$  be given. Let  $v4\_waybel11 : \iota \Rightarrow o$  be given. Let  $m1\_yellow\_9 : \iota \Rightarrow \iota \Rightarrow o$  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  $v4\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $u1\_orders\_2 : \iota \Rightarrow \iota$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\ & X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge \\ & ((v3\_lattice3 X0) \wedge ((v4\_waybel11 X0) \wedge (l1\_waybel\_9 X0)))))))))) \Rightarrow \\ & (\forall X1.((v2\_pre\_topc X1) \wedge ((v2\_waybel19 X1) \wedge (m1\_yellow\_9 \\ & X1 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow ((v3\_pre\_topc X2 X0) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X1))) \Rightarrow ((X3 = X2) \Rightarrow (v3\_pre\_topc X3 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (k7\_subset\_1 X0 X1 X2 = k4\_xboole\_0 X1 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))) \Rightarrow (\forall X2. \forall X3. (g1\_orders\_2 X0 X1 = g1\_orders\_2 X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \quad (3)$$

Assume the following.

$$\forall X0. (l1\_orders\_2 X0) \Rightarrow (m1\_subset\_1 (u1\_orders\_2 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))) \quad (4)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.(m1\_yellow\_9 X1 X0) \Rightarrow (l1\_waybel\_9 X1)) \quad (5)$$

Assume the following.

$$\forall X0.(l1\_waybel\_9 X0) \Rightarrow ((l1\_pre\_topc X0) \wedge (l1\_orders\_2 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (m1\_subset\_1 (k7\_subset\_1 X0 X1 X2) (k1\_zfmisc\_1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (k2\_struct\_0 X0) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (9)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.(l1\_waybel\_9 X1) \Rightarrow ((m1\_yellow\_9 X1 X0) \Leftrightarrow (g1\_orders\_2 (u1\_struct\_0 X1) (u1\_orders\_2 X1) = g1\_orders\_2 (u1\_struct\_0 X0) (u1\_orders\_2 X0)))) \quad (10)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (k2\_struct\_0 X0 = u1\_struct\_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((v4\_pre\_topc X1 X0) \Leftrightarrow (v3\_pre\_topc (k7\_subset\_1 (u1\_struct\_0 X0) (k2\_struct\_0 X0) X1) X0))) \quad (12)$$

Assume the following.

$$\forall X0.(((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_lattice3 X0) \wedge (l1\_orders\_2 X0))))))) \Rightarrow (\forall X1.(m1\_yellow\_9 X1 X0) \Rightarrow ((v4\_waybel11 X1) \Rightarrow (v2\_pre\_topc X1)))) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_lattice3 X0) \wedge (l1\_orders\_2 X0))) \Rightarrow (\forall X1.(m1\_yellow\_9 X1 X0) \Rightarrow (v3\_lattice3 X1)) \quad (14)$$

Assume the following.

$$\forall X0.((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. (m1\_yellow\_9 X1 X0) \Rightarrow (v5\_orders\_2 X1)) \quad (15)$$

Assume the following.

$$\forall X0.((v4\_orders\_2 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. (m1\_yellow\_9 X1 X0) \Rightarrow (v4\_orders\_2 X1)) \quad (16)$$

Assume the following.

$$\forall X0.((v3\_orders\_2 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. (m1\_yellow\_9 X1 X0) \Rightarrow (v3\_orders\_2 X1)) \quad (17)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. (m1\_yellow\_9 X1 X0) \Rightarrow (\neg v2\_struct\_0 X1)) \quad (18)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge (v3\_lattice3 X0)) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge ((v1\_lattice3 X0) \wedge (v2\_lattice3 X0)))) \quad (19)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow ((v1\_lattice3 X0) \Rightarrow (\neg v2\_struct\_0 X0)) \quad (20)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v2\_pre\_topc X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\ & X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge \\ & ((v3\_lattice3 X0) \wedge ((v2\_waybel19 X0) \wedge (l1\_waybel\_9 X0)))))))) \Rightarrow \\ & (\forall X1.((v4\_waybel11 X1) \wedge (m1\_yellow\_9 X1 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X1))) \Rightarrow (((X2 = X3) \wedge ( \\ & v4\_pre\_topc X3 X1)) \Rightarrow (v4\_pre\_topc X2 X0)))))) \end{aligned}$$