

# l37\_waybel13 (TMdoBoHGBPcd- tADrPGNX5d4P5CveAsDmj7L)

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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  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_yellow\_1 : \iota \Rightarrow \iota$  be given. Let  $v7\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v22\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r5\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_yellow\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_waybel\_8 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v3\_lattice3 : \iota \Rightarrow o$  be given. Let  $v11\_quantal1 : \iota \Rightarrow o$  be given. Let  $v4\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_yellow\_0 : \iota \Rightarrow o$  be given. Let  $v1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v3\_yellow\_0 : \iota \Rightarrow o$  be given. Let  $v2\_yellow\_0 : \iota \Rightarrow o$  be given. Let  $v6\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_orders\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_orders\_2 X1)) \Rightarrow ((r5\_waybel\_1 X0 X1) \Rightarrow (r5\_waybel\_1 X1 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ & X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_lattice3 X0) \wedge \\ & (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\ & X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow (((v11\_quantal1 \\ & X1) \wedge (v22\_waybel\_0 X1 X0 X0)) \Rightarrow ((v4\_waybel\_0 (k1\_yellow\_2 X0 X0 \\ & X1) X0) \wedge ((v3\_orders\_2 (k1\_yellow\_2 X0 X0 X1)) \wedge ((v4\_orders\_2 ( \\ & k1\_yellow\_2 X0 X0 X1)) \wedge ((v5\_orders\_2 (k1\_yellow\_2 X0 X0 X1)) \wedge ( \\ & (v1\_lattice3 (k1\_yellow\_2 X0 X0 X1)) \wedge ((v2\_lattice3 (k1\_yellow\_2 \\ & X0 X0 X1)) \wedge ((v3\_lattice3 (k1\_yellow\_2 X0 X0 X1)) \wedge (l1\_orders\_2 \\ & (k1\_yellow\_2 X0 X0 X1)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ X0) \wedge ((v1\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((v3\_orders\_2 \\ X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge ((v1\_lattice3 X1) \wedge \\ (l1\_orders\_2 X1)))))) \Rightarrow (((r5\_waybel\_1 X0 X1) \wedge ((v1\_yellow\_0 X0) \wedge \\ (v2\_waybel\_8 X0))) \Rightarrow (v2\_waybel\_8 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v1\_yellow\_0 X0) \wedge \\ ((v2\_waybel\_8 X0) \wedge (l1\_orders\_2 X0)))))))))) \Rightarrow (\forall X1.((v1\_funct\_1 \\ X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v7\_waybel\_1 \\ X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v22\_waybel\_0 X1 X0 X0) \Rightarrow ((v3\_orders\_2 \\ (k1\_yellow\_2 X0 X0 X1)) \wedge ((v4\_orders\_2 (k1\_yellow\_2 X0 X0 X1)) \wedge \\ ((v5\_orders\_2 (k1\_yellow\_2 X0 X0 X1)) \wedge ((v1\_lattice3 (k1\_yellow\_2 \\ X0 X0 X1)) \wedge ((v2\_lattice3 (k1\_yellow\_2 X0 X0 X1)) \wedge ((v2\_waybel\_8 \\ (k1\_yellow\_2 X0 X0 X1)) \wedge (l1\_orders\_2 (k1\_yellow\_2 X0 X0 X1))))))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(v1\_orders\_2 (k3\_yellow\_1 X0)) \wedge (v3\_lattice3 (k3\_yellow\_1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(\neg v2\_struct\_0 (k3\_yellow\_1 X0)) \wedge ((v1\_orders\_2 (k3\_yellow\_1 X0)) \wedge ((v3\_orders\_2 (k3\_yellow\_1 X0)) \wedge ((v4\_orders\_2 (k3\_yellow\_1 X0)) \wedge (v5\_orders\_2 (k3\_yellow\_1 X0)))))) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_orders\_2 (k3\_yellow\_1 X0)) \wedge (v2\_waybel\_8 (k3\_yellow\_1 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_orders\_2 (k3\_yellow\_1 X0)) \wedge (l1\_orders\_2 (k3\_yellow\_1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow ((v3\_yellow\_0 X0) \Rightarrow ((v1\_yellow\_0 X0) \wedge (v2\_yellow\_0 X0))) \quad (9)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge (v3\_lattice3 X0)) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge (v3\_yellow\_0 X0))) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X0)))) \Rightarrow (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X0)) \wedge (v7\_waybel\_1 X1 X0))) \Rightarrow ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge (v6\_waybel\_1 X1 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_orders\_2 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge (v3\_lattice3 \\ & X0)) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge ((v1\_lattice3 X0) \wedge (v2\_lattice3 X0)))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X0)))) \Rightarrow (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X0)) \wedge (v6\_waybel\_1 X1 X0))) \Rightarrow ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v11\_quantal1 X1) \wedge (v5\_orders\_3 \\ & X1 X0 X0)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow ((v1\_lattice3 X0) \Rightarrow (\neg v2\_struct\_0 X0)) \quad (14)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ & X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow \\ & ((\exists X1. \exists X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 \\ & (k3\_yellow\_1 X1)) (u1\_struct\_0 (k3\_yellow\_1 X1))) \wedge ((v7\_waybel\_1 \\ & X2 (k3\_yellow\_1 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 (k3\_yellow\_1 X1)) (u1\_struct\_0 (k3\_yellow\_1 X1)))))) \wedge \\ & ((v22\_waybel\_0 X2 (k3\_yellow\_1 X1) (k3\_yellow\_1 X1)) \wedge (r5\_waybel\_1 \\ & X0 (k1\_yellow\_2 (k3\_yellow\_1 X1) (k3\_yellow\_1 X1) X2)))) \Rightarrow (v2\_waybel\_8 \\ & X0)) \end{aligned}$$