

# t39\_waybel23 (TM- NFd1VfVhNPTVLJqau1wSY69ar3pN8QR2N)

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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  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v2\_waybel23 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_waybel\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v12\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ & \quad X0) \wedge ((v1\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((\neg \\ & v1\_xboole\_0 X1) \wedge ((v12\_waybel\_0 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & \quad (u1\_struct\_0 X0)))))) \Rightarrow (((\neg v1\_xboole\_0 X1) \wedge ((v1\_waybel\_0 X1 X0) \wedge \\ & \quad ((v12\_waybel\_0 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & \quad \quad X0)))))) \Leftrightarrow (v2\_waybel23 X1 X0))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge (l1\_orders\_2 \\ & \quad X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & \quad X0))) \Rightarrow ((v2\_waybel23 X1 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & \quad X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (((X2 \in X1) \wedge \\ & \quad (X3 \in X1)) \Rightarrow (k1\_yellow\_0 X0 (k7\_domain\_1 (u1\_struct\_0 X0) X2 X3) \in \\ & \quad \quad X1)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge \\ & \quad ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \wedge ( \\ & \quad m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (v1\_waybel\_0 (k1\_waybel\_3 \\ & \quad \quad X0 X1) X0) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge((v4\_orders\_2 X0)\wedge(l1\_orders\_2 X0))))\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow(v12\_waybel\_0 (k1\_waybel\_3 X0 X1) X0) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge(l1\_orders\_2 X0)))\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow(m1\_subset\_1 (k1\_waybel\_3 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (5)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0)\Leftrightarrow(\forall X1.\neg X1 \in X0) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow((v1\_lattice3 X0)\Rightarrow(\neg v2\_struct\_0 X0)) \quad (7)$$

**Theorem 1**

$$\forall X0.((v3\_orders\_2 X0)\wedge((v4\_orders\_2 X0)\wedge((v5\_orders\_2 X0)\wedge((v1\_lattice3 X0)\wedge(l1\_orders\_2 X0)))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(v2\_waybel23 (k1\_waybel\_3 X0 X1) X0))$$