

# t53\_waybel\_4 (TMEqo- ToeJ6TcLHm7mcmrHgQFBLLnVazq6JP)

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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  $v1\_yellow\_0 : \iota \Rightarrow o$  be given. Let  $v1\_lattice3 : \iota \Rightarrow o$  be given. Let  $v2\_lattice3 : \iota \Rightarrow o$  be given. Let  $v3\_waybel\_3 : \iota \Rightarrow o$  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  $r1\_waybel\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r3\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ & X0) \wedge ((v1\_yellow\_0 X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge \\ & ((v3\_waybel\_3 X0) \wedge (l1\_orders\_2 X0))))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow (\neg(r1\_waybel\_3 X0 X1 X2) \wedge (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\ & X0)) \Rightarrow (\neg(r1\_waybel\_3 X0 X1 X3) \wedge (r1\_waybel\_3 X0 X3 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\ & X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\ & (u1\_struct\_0 X0)) \Rightarrow (((r3\_orders\_2 X0 X1 X2) \wedge ((r1\_waybel\_3 X0 X2 \\ & X3) \wedge (r3\_orders\_2 X0 X3 X4)) \Rightarrow (r1\_waybel\_3 X0 X1 X4)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ & X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((r1\_waybel\_3 \\ & X0 X1 X2) \Rightarrow (r3\_orders\_2 X0 X1 X2)))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge(l1\_orders\_2 X0)))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(r3\_orders\_2 X0 X1 X1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge(l1\_orders\_2 X0)))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow((r1\_waybel\_3 X0 X1 X2)\Leftrightarrow(\forall X3. \\ & ((\neg v1\_xboole\_0 X3)\wedge((v1\_waybel\_0 X3 X0)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))))))\Rightarrow(\neg(r3\_orders\_2 X0 X2 (k1\_yellow\_0 X0 X3))\wedge \\ & (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0))\Rightarrow(\neg(X4 \in X3)\wedge(r3\_orders\_2 \\ & X0 X1 X4))))))))) \quad (6) \end{aligned}$$

Assume the following.

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

**Theorem 1**

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0)\wedge((v4\_orders\_2 X0)\wedge((v5\_orders\_2 X0)\wedge((v1\_yellow\_0 X0)\wedge((v1\_lattice3 X0)\wedge((v2\_lattice3 X0)\wedge \\ & ((v3\_waybel\_3 X0)\wedge(l1\_orders\_2 X0))))))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow((r1\_waybel\_3 X0 X1 X2)\Leftrightarrow(\forall X3.((\neg v1\_xboole\_0 X3)\wedge \\ & ((v1\_waybel\_0 X3 X0)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))))\Rightarrow(\neg(r3\_orders\_2 X0 X2 (k1\_yellow\_0 X0 X3))\wedge(\forall X4. \\ & (m1\_subset\_1 X4 (u1\_struct\_0 X0))\Rightarrow(\neg(X4 \in X3)\wedge(r1\_waybel\_3 X0 X1 X4)))))))))) \end{aligned}$$