

t52\_waybel\_0  
(TMGQjLE9cXAQtUnuiFd1eBpeSn2f6dimEbD)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v3\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v4\_orders\_2 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $r1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.\forall X2.(r1\_tarski \\ & X1 X2) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((r1\_lattice3 \\ & X0 X2 X3) \Rightarrow (r1\_lattice3 X0 X1 X3)) \wedge ((r2\_lattice3 X0 X2 X3) \Rightarrow (r2\_lattice3 \\ & X0 X1 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (((r1\_lattice3 \\ & X0 (k1\_tarski X2) X1) \Rightarrow (r1\_orders\_2 X0 X1 X2)) \wedge (((r1\_orders\_2 X0 \\ & X1 X2) \Rightarrow (r1\_lattice3 X0 (k1\_tarski X2) X1)) \wedge (((r2\_lattice3 X0 ( \\ & k1\_tarski X2) X1) \Rightarrow (r1\_orders\_2 X0 X2 X1)) \wedge ((r1\_orders\_2 X0 X2 X1) \Rightarrow \\ & (r2\_lattice3 X0 (k1\_tarski X2) X1))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski (k1\_tarski X0) X1) \Leftrightarrow (X0 \in X1) \tag{4}$$

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.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge(l1\_orders\_2 X0)))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow((r3\_orders\_2 X0 X1 X2)\Leftrightarrow(r1\_orders\_2 X0 X1 X2)) \quad (6)$$

Assume the following.

$$\forall X0.\neg v1\_xboole\_0 (k1\_tarski X0) \quad (7)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (8)$$

Assume the following.

$$\forall X0.v1\_finset\_1 (k1\_tarski X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(l1\_orders\_2 X0)\Rightarrow(m1\_subset\_1 (k1\_yellow\_0 X0 X1) (u1\_struct\_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow(\forall X1.\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow((r1\_yellow\_0 X0 X1)\Rightarrow((X2 = k1\_yellow\_0 X0 X1)\Leftrightarrow((r2\_lattice3 X0 X1 X2)\wedge(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow((r2\_lattice3 X0 X1 X3)\Rightarrow(r1\_orders\_2 X0 X2 X3))))))) \quad (11)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow(\forall X1.\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow((r2\_lattice3 X0 X1 X2)\Leftrightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow((X3 \in X1)\Rightarrow(r1\_orders\_2 X0 X3 X2)))))) \quad (12)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\ & X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))) \Rightarrow ((\forall X3.((v1\_finset\_1 X3) \wedge (m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 X1))) \Rightarrow ((X3 \neq k1\_xboole\_0) \Rightarrow (r1\_yellow\_0 X0 X3)))) \wedge \\ & ((\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\neg(X3 \in X2) \wedge (\forall X4. \\ & ((v1\_finset\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 X1))) \Rightarrow (\neg(r1\_yellow\_0 \\ & X0 X4) \wedge (X3 = k1\_yellow\_0 X0 X4)))))) \wedge (\forall X3.((v1\_finset\_1 \\ & X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 X1))) \Rightarrow ((X3 \neq k1\_xboole\_0) \Rightarrow ( \\ & k1\_yellow\_0 X0 X3 \in X2)))))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\ & X0)) \Rightarrow ((r2\_lattice3 X0 X1 X3) \Leftrightarrow (r2\_lattice3 X0 X2 X3)))))) \end{aligned}$$