

## l43\_waybel\_4

(TMVpe6cYjyuCuq1X44YSiqUkNbRMJWDNoni)

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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  $l1\_orders\_2 : \iota \Rightarrow o$  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  $k2\_yellow\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_waybel\_0 : \iota \Rightarrow \iota$  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  $r1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_yellow\_0 : \iota \Rightarrow \iota$  be given. Let  $v5\_orders\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r3\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (X1 \in X0) \Rightarrow (k1\_funct\_1 (k2\_funcop\_1 X0 X2) X1 = X2) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\ (k2\_yellow\_1 X0))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ (k2\_yellow\_1 X0))) \Rightarrow ((r3\_orders\_2 (k2\_yellow\_1 X0) X1 X2) \Leftrightarrow (r1\_tarski \\ X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 X0 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 \\ & X0)\wedge(l1\_orders\_2 X0)))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge( \\ & m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow((r3\_orders\_2 X0 X1 X2)\Leftrightarrow(r1\_orders\_2 \\ & X0 X1 X2)) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1\_xboole\_0 X1)\wedge(\neg v1\_xboole\_0 X3)\wedge(((v1\_funct\_1 X4)\wedge(( \\ & v1\_funct\_2 X4 X0 X1)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1))))\wedge((v1\_funct\_1 X5)\wedge((v1\_funct\_2 X5 X2 X3)\wedge(m1\_subset\_1 \\ & X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X2 X3))))))))\Rightarrow((r1\_funct\_2 X0 X1 \\ & X2 X3 X4 X5)\Leftrightarrow(X4 = X5)) \end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X2 X0))\Rightarrow(k8\_funcop\_1 X0 X1 X2 = k2\_funcop\_1 X1 X2) \tag{7}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow((\neg v2\_struct\_0 (k2\_yellow\_1 X0))\wedge (v1\_orders\_2 (k2\_yellow\_1 X0))) \tag{8}$$

Assume the following.

$$\forall X0.(v1\_orders\_2 (k2\_yellow\_1 X0))\wedge((v3\_orders\_2 (k2\_yellow\_1 X0))\wedge((v4\_orders\_2 (k2\_yellow\_1 X0))\wedge(v5\_orders\_2 (k2\_yellow\_1 X0)))) \tag{9}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge((v4\_orders\_2 X0)\wedge(l1\_orders\_2 X0))))\Rightarrow(\neg v1\_xboole\_0 (k7\_waybel\_0 X0)) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \tag{11}$$

Assume the following.

$$\forall X0.\neg v1\_xboole\_0 (k1\_zfmisc\_1 X0) \tag{12}$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow(l1\_struct\_0 X0) \tag{13}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 \\ & X2 X0)) \Rightarrow ((v1\_funct\_1 (k8\_funcop\_1 X0 X1 X2)) \wedge ((v1\_funct\_2 (k8\_funcop\_1 \\ & X0 X1 X2) X1 X0) \wedge (m1\_subset\_1 (k8\_funcop\_1 X0 X1 X2) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X1 X0)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow \\ & (m1\_subset\_1 (k6\_domain\_1 X0 X1) (k1\_zfmisc\_1 X0)) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1\_orders\_2 X0) \Rightarrow (m1\_subset\_1 (k3\_yellow\_0 X0) (u1\_struct\_0 \\ & X0)) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1\_orders\_2 (k2\_yellow\_1 X0)) \wedge (l1\_orders\_2 (k2\_yellow\_1 \\ & X0)) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1\_orders\_2 X0) \Rightarrow (\forall X1. (l1\_orders\_2 X1) \Rightarrow (\forall X2. \\ & ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X1)))))) \Rightarrow ((v5\_orders\_3 X2 X0 X1) \Leftrightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 \\ & (u1\_struct\_0 X0)) \Rightarrow ((r1\_orders\_2 X0 X3 X4) \Rightarrow (\forall X5. (m1\_subset\_1 \\ & X5 (u1\_struct\_0 X1)) \Rightarrow (\forall X6. (m1\_subset\_1 X6 (u1\_struct\_0 \\ & X1)) \Rightarrow (((X5 = k1\_funct\_1 X2 X3) \wedge (X6 = k1\_funct\_1 X2 X4)) \Rightarrow (r1\_orders\_2 \\ & X1 X5 X6)))))))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1\_orders\_2 X0) \Rightarrow ((v1\_lattice3 X0) \Rightarrow (\neg v2\_struct\_0 X0)) \end{aligned} \quad (19)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ & X0) \wedge ((v1\_yellow\_0 X0) \wedge ((v1\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow \\ & (\forall X1. ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) \\ & (u1\_struct\_0 (k2\_yellow\_1 (k7\_waybel\_0 X0)))) \wedge (m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 (k2\_yellow\_1 \\ & (k7\_waybel\_0 X0)))))) \Rightarrow ((r1\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & (k2\_yellow\_1 (k7\_waybel\_0 X0)) (u1\_struct\_0 X0) (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0) X1 (k8\_funcop\_1 (k1\_zfmisc\_1 (u1\_struct\_0 X0) \\ & (u1\_struct\_0 X0) (k6\_domain\_1 (u1\_struct\_0 X0) (k3\_yellow\_0 X0)))) \Rightarrow \\ & (v5\_orders\_3 X1 X0 (k2\_yellow\_1 (k7\_waybel\_0 X0)))))) \end{aligned}$$