

t37\_waybel\_7  
(TMG3KcPqPT5BFZbrmcPBUo3KRScfyPMeeEh)

October 27, 2020

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  $v3\_waybel\_3 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v1\_waybel\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_yellow\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  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  $r1\_waybel\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r3\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_waybel\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_yellow\_0 : \iota \Rightarrow o$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v13\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v24\_waybel\_0 : \iota \Rightarrow o$  be given. Let  $v2\_waybel\_3 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (1)$$

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.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v2\_yellow\_0 X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (r1\_orders\_2 X0 X1 (k4\_yellow\_0 X0))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (\neg (\neg r1\_xboole\_0 X0 X1) \wedge (\forall X2. \neg (X2 \in X0) \wedge (X2 \in X1))) \wedge (\neg (\exists X2. (X2 \in X0) \wedge (X2 \in X1)) \wedge (r1\_xboole\_0 X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1)\Rightarrow((v1\_xboole\_0 X1)\vee (X0 \in X1)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge((v4\_orders\_2 \\ X0)\wedge((v5\_orders\_2 X0)\wedge((v2\_yellow\_0 X0)\wedge(l1\_orders\_2 X0))))))\Rightarrow \\ (\forall X1.((\neg v1\_xboole\_0 X1)\wedge((v2\_waybel\_0 X1 X0)\wedge((v13\_waybel\_0 \\ X1 X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))))\Rightarrow(k4\_yellow\_0 \\ X0 \in X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 \\ X0)\wedge(l1\_orders\_2 X0)))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge( \\ m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow((r3\_orders\_2 X0 X1 X2)\Leftrightarrow(r1\_orders\_2 \\ X0 X1 X2)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(\neg v1\_xboole\_0 X1))\Rightarrow (r2\_subset\_1 X0 X1)\Leftrightarrow(r1\_xboole\_0 X0 X1) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge \\ (l1\_orders\_2 X0)))\wedge((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))))))\Rightarrow(\neg v1\_xboole\_0 (k4\_waybel\_0 X0 X1)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v3\_orders\_2 X0)\wedge((v4\_orders\_2 X0)\wedge \\ ((v5\_orders\_2 X0)\wedge((v2\_lattice3 X0)\wedge(l1\_orders\_2 X0))))))\wedge( \\ m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow(v2\_waybel\_0 \\ (k12\_waybel\_0 X0 X1) X0) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v5\_orders\_2 X0)\wedge \\ ((v2\_yellow\_0 X0)\wedge(l1\_orders\_2 X0))))\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))))\Rightarrow(\neg v1\_xboole\_0 (k12\_waybel\_0 X0 X1)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge \\ ((v4\_orders\_2 X0)\wedge(l1\_orders\_2 X0))))\wedge((v2\_waybel\_0 X1 X0)\wedge \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow(v2\_waybel\_0 \\ (k4\_waybel\_0 X0 X1) X0) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v4\_orders\_2 X0)\wedge(l1\_orders\_2 X0)))\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow(v13\_waybel\_0 (k4\_waybel\_0 X0 X1) X0) \quad (13)$$

Assume the following.

$$\forall X0.\exists X1.m1\_subset\_1 X1 X0 \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(l1\_orders\_2 X0))\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow(m1\_subset\_1 (k5\_waybel\_0 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (15)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow(m1\_subset\_1 (k4\_yellow\_0 X0) (u1\_struct\_0 X0)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(((l1\_orders\_2 X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow(m1\_subset\_1 (k4\_waybel\_0 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(m1\_subset\_1 (k3\_subset\_1 X0 X1) (k1\_zfmisc\_1 X0)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(l1\_orders\_2 X0))\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow(m1\_subset\_1 (k12\_waybel\_0 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (19)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge(l1\_orders\_2 X0)))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(k1\_waybel\_3 X0 X1 = \text{ReplSep} (\text{toset} (\lambda X2 : \iota.m1\_subset\_1 X2 (u1\_struct\_0 X0)) (\lambda X2 : \iota.r1\_waybel\_3 X0 X2 X1) (\lambda X2 : \iota.X2)))) \quad (20)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge(l1\_orders\_2 X0)))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow((v1\_waybel\_3 X1 X0)\Leftrightarrow(r1\_waybel\_3 X0 X1 X1))) \quad (21)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge (v3\_waybel\_3 X0))) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v24\_waybel\_0 X0) \wedge (v2\_waybel\_3 X0)))))) \quad (22)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow ((v1\_lattice3 X0) \Rightarrow (\neg v2\_struct\_0 X0)) \quad (23)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (((v3\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge (v24\_waybel\_0 X0))) \Rightarrow ((v3\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge (v2\_yellow\_0 X0)))) \quad (24)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_waybel\_3 X0) \wedge (l1\_orders\_2 X0))))))) \Rightarrow ((v1\_waybel\_3 (k4\_yellow\_0 X0) X0) \Rightarrow ( \\ & (\forall X1.((\neg v1\_xboole\_0 X1) \wedge ((v1\_finset\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow (\neg(r1\_waybel\_3 X0 (k2\_yellow\_0 X0 X1) (k4\_yellow\_0 X0)) \wedge (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0) \Rightarrow (\neg(X2 \in X1) \wedge (r3\_orders\_2 X0 X2 (k4\_yellow\_0 X0)))))) \wedge (\neg r2\_subset\_1 (k4\_waybel\_0 X0 (k12\_waybel\_0 X0 (k3\_subset\_1 (u1\_struct\_0 X0) (k5\_waybel\_0 X0 (k4\_yellow\_0 X0)))))) (k1\_waybel\_3 X0 (k4\_yellow\_0 X0)))))) \end{aligned}$$