

t46\_waybel21  
(TMLnJgMLwzdPcxNePhJeB2ava1JzqFn7D1r)

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Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. 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  $v3\_lattice3 : \iota \Rightarrow o$  be given. Let  $v2\_waybel19 : \iota \Rightarrow o$  be given. Let  $l1\_waybel\_9 : \iota \Rightarrow o$  be given. Let  $m1\_waybel21 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v17\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v22\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $v19\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r3\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_yellow\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v3\_yellow\_0 : \iota \Rightarrow o$  be given. Let  $v1\_yellow\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v2\_pre\_topc X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\
& X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge \\
& ((v3\_lattice3 X0) \wedge ((v2\_waybel19 X0) \wedge (l1\_waybel\_9 X0)))))))) \Rightarrow \\
& (\forall X1.((v2\_pre\_topc X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 \\
& X1) \wedge ((v5\_orders\_2 X1) \wedge ((v1\_lattice3 X1) \wedge ((v2\_lattice3 X1) \wedge \\
& ((v3\_lattice3 X1) \wedge ((v2\_waybel19 X1) \wedge (l1\_waybel\_9 X1)))))))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) \\
& (u1\_struct\_0 X1)) \wedge ((v19\_waybel\_0 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((v5\_pre\_topc \\
& X2 X0 X1) \Leftrightarrow ((v22\_waybel\_0 X2 X0 X1) \wedge (\forall X3.((\neg v1\_xboole\_0 \\
& X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (r3\_waybel\_0 \\
& X0 X1 X2 X3))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge \\ & ((v5\_orders\_2 X0) \wedge ((v2\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \wedge \\ & (v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge ((v2\_lattice3 \\ & X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (\forall X2. (m1\_waybel21 X2 X0 X1) \Rightarrow \\ & ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X1))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. (l1\_waybel\_9 X0) \Rightarrow ((l1\_pre\_topc X0) \wedge (l1\_orders\_2 X0)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_orders\_2 X1)) \Rightarrow (\forall X2. ((v1\_funct\_1 \\ & X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow \\ & ((v17\_waybel\_0 X2 X0 X1) \Leftrightarrow (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))) \Rightarrow (r3\_waybel\_0 X0 X1 X2 X3)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ & X0) \wedge ((v2\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1. ((v3\_orders\_2 \\ & X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge ((v2\_lattice3 X1) \wedge \\ & (l1\_orders\_2 X1)))))) \Rightarrow (((v2\_yellow\_0 X0) \Rightarrow (v2\_yellow\_0 X1)) \Rightarrow \\ & (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) \\ & (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((m1\_waybel21 X2 X0 X1) \Leftrightarrow \\ & (\forall X3. ((v1\_finset\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 ( \\ & u1\_struct\_0 X0)))) \Rightarrow (r3\_waybel\_0 X0 X1 X2 X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. (l1\_orders\_2 X0) \Rightarrow ((v3\_yellow\_0 X0) \Rightarrow ((v1\_yellow\_0 X0) \wedge (v2\_yellow\_0 X0))) \quad (6)$$

Assume the following.

$$\forall X0. (l1\_orders\_2 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge (v3\_lattice3 X0)) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge (v3\_yellow\_0 X0))) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge \\ & ((v5\_orders\_2 X0) \wedge ((v2\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \wedge ( \\ & (v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge ((v2\_yellow\_0 \\ & X1) \wedge ((v2\_lattice3 X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (\forall X2. ( \\ & m1\_waybel21 X2 X0 X1) \Rightarrow (v19\_waybel\_0 X2 X0 X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. (l1\_orders\_2 X0) \Rightarrow ((v2\_lattice3 X0) \Rightarrow (\neg v2\_struct\_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (v1\_finset\_1 X0) \quad (10)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((v2\_pre\_topc X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\ & X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge \\ & ((v3\_lattice3 X0) \wedge ((v2\_waybel19 X0) \wedge (l1\_waybel\_9 X0)))))))) \Rightarrow \\ & (\forall X1. ((v2\_pre\_topc X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 \\ & X1) \wedge ((v5\_orders\_2 X1) \wedge ((v1\_lattice3 X1) \wedge ((v2\_lattice3 X1) \wedge \\ & ((v3\_lattice3 X1) \wedge ((v2\_waybel19 X1) \wedge (l1\_waybel\_9 X1)))))))) \Rightarrow \\ & (\forall X2. (m1\_waybel21 X2 X0 X1) \Rightarrow ((v5\_pre\_topc X2 X0 X1) \Leftrightarrow ((v17\_waybel\_0 \\ & X2 X0 X1) \wedge (v22\_waybel\_0 X2 X0 X1)))) \end{aligned}$$