

## t26\_waybel16

(TMJqqY1ekMmFh3SLaoCV1Hd2FnL5LzjFqKK)

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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  $v1\_lattice3 : \iota \Rightarrow o$  be given. Let  $v2\_lattice3 : \iota \Rightarrow o$  be given. Let  $v3\_lattice3 : \iota \Rightarrow o$  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  $r3\_waybel\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_waybel16 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k13\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ &X0) \wedge ((v1\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ &X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ &X0)) \Rightarrow (k6\_waybel\_0 X0 (k13\_lattice3 X0 X1 X2) = k9\_subset\_1 (u1\_struct\_0 \\ &X0) (k6\_waybel\_0 X0 X1) (k6\_waybel\_0 X0 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ &(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\ &(u1\_struct\_0 X0)) \Rightarrow ((r3\_waybel\_4 X0 (k6\_subset\_1 (u1\_struct\_0 \\ &X0) (k6\_waybel\_0 X0 X2)) X1) \Rightarrow (k7\_subset\_1 (u1\_struct\_0 X0) (k6\_waybel\_0 \\ &X0 X1) (k6\_domain\_1 (u1\_struct\_0 X0) X1) = k9\_subset\_1 (u1\_struct\_0 \\ &X0) (k6\_waybel\_0 X0 X1) (k6\_waybel\_0 X0 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\ &X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ &X1 (u1\_struct\_0 X0)) \Rightarrow ((r2\_yellow\_0 X0 (k6\_waybel\_0 X0 X1)) \wedge (k2\_yellow\_0 \\ &X0 (k6\_waybel\_0 X0 X1) = X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(((X1 = k2\_yellow\_0 \\
& X0 X2) \wedge (r2\_yellow\_0 X0 X2)) \Rightarrow ((r1\_lattice3 X0 X2 X1) \wedge (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((r1\_lattice3 X0 X2 X3) \Rightarrow (r1\_orders\_2 \\
& X0 X3 X1)))))) \wedge (((r1\_lattice3 X0 X2 X1) \wedge (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 X0)) \Rightarrow ((r1\_lattice3 X0 X2 X3) \Rightarrow (r1\_orders\_2 X0 X3 \\
& X1)))))) \Rightarrow ((X1 = k2\_yellow\_0 X0 X2) \wedge (r2\_yellow\_0 X0 X2)))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\
& (u1\_struct\_0 X0)) \Rightarrow ((X2 \in k6\_waybel\_0 X0 X1) \Leftrightarrow (r1\_orders\_2 X0 X1 \\
& X2))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v5\_orders\_2 X0) \wedge ((v1\_lattice3 \\
& X0) \wedge (l1\_orders\_2 X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge \\
& m1\_subset\_1 X2 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 (k13\_lattice3 \\
& X0 X1 X2) (u1\_struct\_0 X0))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (r1\_waybel\_1 X0 X1) \Leftrightarrow ((r2\_yellow\_0 X0 X1) \wedge (k2\_yellow\_0 X0 X1 \in X1)))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((v1\_waybel16 X1 X0) \Leftrightarrow (r1\_waybel\_1 \\
& X0 (k7\_subset\_1 (u1\_struct\_0 X0) (k6\_waybel\_0 X0 X1) (k6\_domain\_1 \\
& (u1\_struct\_0 X0) X1))))))
\end{aligned} \tag{8}$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow ((v1\_lattice3 X0) \Rightarrow (\neg v2\_struct\_0 X0)) \tag{9}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\
& X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_lattice3 X0) \wedge \\
& (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow ((\exists X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \wedge (r3\_waybel\_4 \\
& X0 (k6\_subset\_1 (u1\_struct\_0 X0) (k6\_waybel\_0 X0 X2)) X1)) \Rightarrow (v1\_waybel16 \\
& X1 X0)))
\end{aligned}$$