

## t55\_yellow\_5

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v11\_waybel\_1 : \iota \Rightarrow o$  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  $k1\_yellow\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $r3\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_yellow\_0 : \iota \Rightarrow \iota$  be given. Let  $v2\_lattice3 : \iota \Rightarrow o$  be given. Let  $v2\_waybel\_1 : \iota \Rightarrow o$  be given. Let  $v3\_yellow\_0 : \iota \Rightarrow o$  be given. Let  $v10\_waybel\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ & X0) \wedge ((v1\_lattice3 X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow ((r3\_orders\_2 X0 X1 X2) \Rightarrow (k13\_lattice3 X0 X1 X2 = X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v11\_waybel\_1 X0) \wedge (l1\_orders\_2 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k13\_lattice3 X0 X1 (k1\_yellow\_5 \\ & X0 X2 X1) = k13\_lattice3 X0 X1 X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v11\_waybel\_1 X0) \wedge (l1\_orders\_2 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k1\_yellow\_5 X0 X1 (k13\_lattice3 \\ & X0 X1 X2) = k3\_yellow\_0 X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\
& X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow \\
& ((v2\_waybel\_1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 X0)) \Rightarrow (k1\_yellow\_5 X0 (k13\_lattice3 X0 X1 X2) X3 = \\
& k13\_lattice3 X0 (k1\_yellow\_5 X0 X1 X3) (k1\_yellow\_5 X0 X2 X3))))))
\end{aligned} \tag{4}$$

Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 \\
& X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (m1\_subset\_1 (k1\_yellow\_5 X0 X1 X2) (u1\_struct\_0 X0))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_orders\_2 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge (v11\_waybel\_1 \\
& X0)) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge \\
& ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_yellow\_0 \\
& X0) \wedge ((v2\_waybel\_1 X0) \wedge (v10\_waybel\_1 X0))))))))))
\end{aligned} \tag{7}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(((\neg v2\_struct\_0 X0) \wedge ((v11\_waybel\_1 X0) \wedge (l1\_orders\_2 \\
& X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k1\_yellow\_5 X0 (k13\_lattice3 \\
& X0 X1 X2) X2 = k1\_yellow\_5 X0 X1 X2)))
\end{aligned}$$