

# t44\_yellow\_5 (TM- cyv5JxWK92wMGWmfwZyzVEkm7HarBbYuL)

October 27, 2020

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  $r3\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k13\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_yellow\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $v2\_lattice3 : \iota \Rightarrow o$  be given. Let  $k12\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_yellow\_0 : \iota \Rightarrow \iota$  be given. Let  $v3\_yellow\_0 : \iota \Rightarrow o$  be given. Let  $v2\_waybel\_1 : \iota \Rightarrow o$  be given. Let  $v10\_waybel\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ & X0) \wedge ((v1\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (((r3\_orders\_2 \\ & X0 X1 X3) \wedge (r3\_orders\_2 X0 X2 X3)) \Rightarrow (r3\_orders\_2 X0 (k13\_lattice3 \\ & X0 X1 X2) X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v11\_waybel\_1 X0) \wedge (l1\_orders\_2 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow ((r3\_orders\_2 X0 (k1\_yellow\_5 X0 X1 X2) X3) \Rightarrow \\ & (r3\_orders\_2 X0 X1 (k13\_lattice3 X0 X2 X3)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v2\_lattice3 \\ & X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((X1 = k12\_lattice3 \\ & X0 X1 X2) \Leftrightarrow (r3\_orders\_2 X0 X1 X2)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 \\ X0) \wedge ((v2\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((r1\_orders\_2 \\ X0 X1 X3) \Rightarrow (r1\_orders\_2 X0 (k1\_yellow\_5 X0 X1 X2) X3)))))) \end{aligned} \quad (4)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 \\ X0) \wedge (l1\_orders\_2 X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ( \\ m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow ((r3\_orders\_2 X0 X1 X2) \Leftrightarrow (r1\_orders\_2 \\ X0 X1 X2)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (m1\_subset\_1 (k3\_yellow\_0 X0) (u1\_struct\_0 X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 \\ X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\ X0)))) \Rightarrow (m1\_subset\_1 (k1\_yellow\_5 X0 X1 X2) (u1\_struct\_0 X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v5\_orders\_2 X0) \wedge ((v1\_lattice3 \\ X0) \wedge (l1\_orders\_2 X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ( \\ m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 (k13\_lattice3 \\ X0 X1 X2) (u1\_struct\_0 X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v5\_orders\_2 X0) \wedge ((v2\_lattice3 \\ X0) \wedge (l1\_orders\_2 X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ( \\ m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (k12\_lattice3 X0 X1 X2 = k12\_lattice3 \\ X0 X2 X1) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_orders\_2 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge (v11\_waybel\_1 \\ X0)) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge \\ ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_yellow\_0 \\ X0) \wedge ((v2\_waybel\_1 X0) \wedge (v10\_waybel\_1 X0)))))))))) \end{aligned} \quad (11)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v11\_waybel\_1 X0) \wedge (l1\_orders\_2 \\ & X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((r3\_orders\_2 X0 X1 X2) \Rightarrow (X2 = \\ & k13\_lattice3 X0 X1 (k1\_yellow\_5 X0 X2 X1)))))) \end{aligned}$$