

## t5\_yellow\_5

(TMcu1NbsUbnS4DcRyAQDjEPXyJuk69trnYa)

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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  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k12\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v2\_lattice3 \\ & X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((r1\_orders\_2 X0 X3 (k12\_lattice3 \\ & X0 X1 X2)) \Rightarrow (r1\_orders\_2 X0 X3 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge (l1\_orders\_2 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow ((X3 = k13\_lattice3 X0 X1 X2) \Leftrightarrow ((r1\_orders\_2 \\ & X0 X1 X3) \wedge ((r1\_orders\_2 X0 X2 X3) \wedge (\forall X4.(m1\_subset\_1 X4 ( \\ & u1\_struct\_0 X0)) \Rightarrow ((r1\_orders\_2 X0 X1 X4) \wedge (r1\_orders\_2 X0 X2 X4)) \Rightarrow \\ & (r1\_orders\_2 X0 X3 X4)))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v2\_lattice3 \\ & X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((r1\_orders\_2 X0 X1 X2) \Rightarrow (r1\_orders\_2 \\ & X0 (k12\_lattice3 X0 X1 X3) (k12\_lattice3 X0 X2 X3)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v5\_orders\_2\ X0)\wedge((v1\_lattice3\ X0)\wedge(l1\_orders\_2\ X0)))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(m1\_subset\_1\ (k13\_lattice3\ X0\ X1\ X2)\ (u1\_struct\_0\ X0)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v5\_orders\_2\ X0)\wedge((v2\_lattice3\ X0)\wedge(l1\_orders\_2\ X0)))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(m1\_subset\_1\ (k12\_lattice3\ X0\ X1\ X2)\ (u1\_struct\_0\ X0)) \quad (5)$$

**Theorem 1**

$$\forall X0.((v4\_orders\_2\ X0)\wedge((v5\_orders\_2\ X0)\wedge((v1\_lattice3\ X0)\wedge((v2\_lattice3\ X0)\wedge(l1\_orders\_2\ X0)))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(r1\_orders\_2\ X0\ (k12\_lattice3\ X0\ X1\ X2)\ (k13\_lattice3\ X0\ X1\ X3))))))$$