

# t2\_yellow\_1 (TMND- kDhRtRd9MJRqR3Nujb6kLcEFqLKuaMj)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_yellow\_1 : \iota \Rightarrow \iota$  be given. Let  $r3\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v10\_lattices : \iota \Rightarrow o$  be given. Let  $l3\_lattices : \iota \Rightarrow o$  be given. Let  $r3\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_lattice3 : \iota \Rightarrow \iota$  be given. Let  $k4\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_lattice3 : \iota \Rightarrow \iota$  be given. Let  $r1\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v6\_lattices : \iota \Rightarrow o$  be given. Let  $v8\_lattices : \iota \Rightarrow o$  be given. Let  $v9\_lattices : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_lattices : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_lattice3 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v8\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v4\_lattices : \iota \Rightarrow o$  be given. Let  $v5\_lattices : \iota \Rightarrow o$  be given. Let  $v7\_lattices : \iota \Rightarrow o$  be given. Let  $u1\_orders\_2 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((r3\_lattices X0 X1 X2) \Leftrightarrow (r3\_orders\_2 \\ & (k3\_lattice3 X0) (k4\_lattice3 X0 X1) (k4\_lattice3 X0 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k1\_lattice3 \\ & X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k1\_lattice3 \\ & X0))) \Rightarrow ((r1\_lattices (k1\_lattice3 X0) X1 X2) \Leftrightarrow (r1\_tarski X1 X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v6\_lattices \\ & X0) \wedge ((v8\_lattices X0) \wedge ((v9\_lattices X0) \wedge (l3\_lattices X0)))))) \wedge \\ & ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0))) \Rightarrow ((r3\_lattices X0 X1 X2) \Leftrightarrow (r1\_lattices X0 X1 X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0)))\Rightarrow(\forall X2.\forall X3.(g1\_orders\_2 X0 X1 = g1\_orders\_2 X2 X3)\Rightarrow((X0 = X2)\wedge(X1 = X3))) \quad (4)$$

Assume the following.

$$\forall X0.(v3\_lattices (k1\_lattice3 X0))\wedge(v10\_lattices (k1\_lattice3 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(\neg v2\_struct\_0 (k1\_lattice3 X0))\wedge(v3\_lattices (k1\_lattice3 X0)) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v10\_lattices X0)\wedge(l3\_lattices X0)))\Rightarrow((v1\_partfun1 (k2\_lattice3 X0) (u1\_struct\_0 X0))\wedge((v1\_relat\_2 (k2\_lattice3 X0))\wedge((v4\_relat\_2 (k2\_lattice3 X0))\wedge((v8\_relat\_2 (k2\_lattice3 X0))\wedge(m1\_subset\_1 (k2\_lattice3 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))))))) \quad (7)$$

Assume the following.

$$\forall X0.(v3\_lattices (k1\_lattice3 X0))\wedge(l3\_lattices (k1\_lattice3 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0)))\Rightarrow((v1\_orders\_2 (g1\_orders\_2 X0 X1))\wedge(l1\_orders\_2 (g1\_orders\_2 X0 X1))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v10\_lattices X0)\wedge(l3\_lattices X0)))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(k4\_lattice3 X0 X1 = X1)) \quad (10)$$

Assume the following.

$$\forall X0.k3\_yellow\_1 X0 = k3\_lattice3 (k1\_lattice3 X0) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v10\_lattices X0)\wedge(l3\_lattices X0)))\Rightarrow(k3\_lattice3 X0 = g1\_orders\_2 (u1\_struct\_0 X0) (k2\_lattice3 X0)) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0. (&l3\_lattices\ X0) \Rightarrow (((\neg v2\_struct\_0\ X0) \wedge (v10\_lattices \\ &X0)) \Rightarrow ((\neg v2\_struct\_0\ X0) \wedge ((v4\_lattices\ X0) \wedge ((v5\_lattices\ X0) \wedge \\ &((v6\_lattices\ X0) \wedge ((v7\_lattices\ X0) \wedge ((v8\_lattices\ X0) \wedge (v9\_lattices \\ &X0)))))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0. (l1\_orders\_2\ X0) \Rightarrow ((v1\_orders\_2\ X0) \Rightarrow (X0 = g1\_orders\_2 \\ (u1\_struct\_0\ X0)\ (u1\_orders\_2\ X0))) \quad (14)$$

**Theorem 1**

$$\begin{aligned} \forall X0. \forall X1. (m1\_subset\_1\ X1\ (u1\_struct\_0\ (k3\_yellow\_1 \\ X0))) \Rightarrow (\forall X2. (m1\_subset\_1\ X2\ (u1\_struct\_0\ (k3\_yellow\_1 \\ X0))) \Rightarrow ((r3\_orders\_2\ (k3\_yellow\_1\ X0)\ X1\ X2) \Leftrightarrow (r1\_tarski\ X1\ X2))) \end{aligned}$$