

## t36\_yellow\_0

(TMVXogTGnLJUN2uou3aayHUbbxLaqzR6xeq)

October 27, 2020

Let  $v4\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v5\_orders\_2 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $r1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  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  $r1\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 (k2\_xboole\_0 X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v4\_orders\_2 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\ & (u1\_struct\_0 X0)) \Rightarrow ((r1\_orders\_2 X0 X1 X2) \Rightarrow (\forall X3. ((r1\_lattice3 \\ & X0 X3 X2) \Rightarrow (r1\_lattice3 X0 X3 X1)) \wedge ((r2\_lattice3 X0 X3 X1) \Rightarrow (r2\_lattice3 \\ & X0 X3 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1\_orders\_2 X0) \Rightarrow (\forall X1. \forall X2. ((r1\_tarski \\ & X1 X2) \wedge ((r1\_yellow\_0 X0 X1) \wedge (r1\_yellow\_0 X0 X2))) \Rightarrow (r1\_orders\_2 \\ & X0 (k1\_yellow\_0 X0 X1) (k1\_yellow\_0 X0 X2))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (((X1 = k1\_yellow\_0 \\ & X0 X2) \wedge (r1\_yellow\_0 X0 X2)) \Rightarrow ((r2\_lattice3 X0 X2 X1) \wedge (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((r2\_lattice3 X0 X2 X3) \Rightarrow (r1\_orders\_2 \\ & X0 X1 X3)))))) \wedge (((r2\_lattice3 X0 X2 X1) \wedge (\forall X3. (m1\_subset\_1 \\ & X3 (u1\_struct\_0 X0)) \Rightarrow ((r2\_lattice3 X0 X2 X3) \Rightarrow (r1\_orders\_2 X0 X1 \\ & X3)))) \Rightarrow ((X1 = k1\_yellow\_0 X0 X2) \wedge (r1\_yellow\_0 X0 X2)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow \\
& (((X3 = k10\_lattice3 X0 X1 X2) \wedge (r1\_yellow\_0 X0 (k2\_tarski X1 X2))) \Rightarrow \\
& ((r1\_orders\_2 X0 X1 X3) \wedge ((r1\_orders\_2 X0 X2 X3) \wedge (\forall X4.(m1\_subset\_1 \\
& X4 (u1\_struct\_0 X0)) \Rightarrow ((r1\_orders\_2 X0 X1 X4) \wedge (r1\_orders\_2 X0 \\
& X2 X4)) \Rightarrow (r1\_orders\_2 X0 X3 X4)))))) \wedge (((r1\_orders\_2 X0 X1 X3) \wedge ( \\
& r1\_orders\_2 X0 X2 X3) \wedge (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\
& X0)) \Rightarrow ((r1\_orders\_2 X0 X1 X4) \wedge (r1\_orders\_2 X0 X2 X4)) \Rightarrow (r1\_orders\_2 \\
& X0 X3 X4)))) \Rightarrow ((X3 = k10\_lattice3 X0 X1 X2) \wedge (r1\_yellow\_0 X0 (k2\_tarski \\
& X1 X2))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.\forall X2.\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (((r1\_lattice3 X0 X1 X3) \wedge ( \\
& r1\_lattice3 X0 X2 X3)) \Rightarrow (r1\_lattice3 X0 (k2\_xboole\_0 X1 X2) X3)) \wedge \\
& (((r2\_lattice3 X0 X1 X3) \wedge (r2\_lattice3 X0 X2 X3)) \Rightarrow (r2\_lattice3 \\
& X0 (k2\_xboole\_0 X1 X2) X3))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(l1\_orders\_2 X0) \Rightarrow (m1\_subset\_1 (k1\_yellow\_0 X0 X1) (u1\_struct\_0 X0)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0 X0 X1 = k2\_xboole\_0 X1 X0 \tag{8}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 \\
& X0))) \Rightarrow (\forall X1.\forall X2.((r1\_yellow\_0 X0 X1) \wedge ((r1\_yellow\_0 \\
& X0 X2) \wedge (r1\_yellow\_0 X0 (k2\_xboole\_0 X1 X2)))) \Rightarrow (k1\_yellow\_0 X0 \\
& (k2\_xboole\_0 X1 X2) = k10\_lattice3 X0 (k1\_yellow\_0 X0 X1) (k1\_yellow\_0 \\
& X0 X2)))
\end{aligned}$$