

t19\_yellow\_0

(TMMpeJcZivbkCgsnkZ4MFJY3PzQGoXYdZii)

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Let  $v5\_orders\_2 : \iota \Rightarrow o$  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  $k11\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  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. Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& \quad X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& \quad (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (((r1\_lattice3 X0 (k2\_tarski \\
& \quad X2 X3) X1) \Rightarrow ((r1\_orders\_2 X0 X1 X2) \wedge (r1\_orders\_2 X0 X1 X3))) \wedge ((( \\
& \quad (r1\_orders\_2 X0 X1 X2) \wedge (r1\_orders\_2 X0 X1 X3)) \Rightarrow (r1\_lattice3 X0 \\
& \quad (k2\_tarski X2 X3) X1)) \wedge (((r2\_lattice3 X0 (k2\_tarski X2 X3) X1) \Rightarrow \\
& \quad ((r1\_orders\_2 X0 X2 X1) \wedge (r1\_orders\_2 X0 X3 X1))) \wedge (((r1\_orders\_2 \\
& \quad X0 X2 X1) \wedge (r1\_orders\_2 X0 X3 X1)) \Rightarrow (r2\_lattice3 X0 (k2\_tarski X2 \\
& \quad X3) X1)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& \quad (r2\_yellow\_0 X0 X1) \Leftrightarrow (\exists X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\
& \quad X0)) \wedge ((r1\_lattice3 X0 X1 X2) \wedge (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\
& \quad X0)) \Rightarrow ((r1\_lattice3 X0 X1 X3) \Rightarrow (r1\_orders\_2 X0 X3 X2))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((l1\_orders\_2 X0) \wedge ((m1\_subset\_1 \\
& \quad X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 \\
& \quad (k11\_lattice3 X0 X1 X2) (u1\_struct\_0 X0))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_orders\_2 X0) \Rightarrow ((v5\_orders\_2 X0) \Rightarrow (\forall X1.( \\
& m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\
& (u1\_struct\_0 X0)) \Rightarrow ((\exists X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\
& X0)) \wedge ((r1\_orders\_2 X0 X3 X1) \wedge ((r1\_orders\_2 X0 X3 X2) \wedge (\forall X4. \\
& (m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow (((r1\_orders\_2 X0 X4 X1) \wedge (r1\_orders\_2 \\
& X0 X4 X2)) \Rightarrow (r1\_orders\_2 X0 X4 X3)))))) \Rightarrow (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 X0)) \Rightarrow ((X3 = k11\_lattice3 X0 X1 X2) \Leftrightarrow ((r1\_orders\_2 \\
& X0 X3 X1) \wedge ((r1\_orders\_2 X0 X3 X2) \wedge (\forall X4.(m1\_subset\_1 X4 ( \\
& u1\_struct\_0 X0)) \Rightarrow (((r1\_orders\_2 X0 X4 X1) \wedge (r1\_orders\_2 X0 X4 X2)) \Rightarrow \\
& (r1\_orders\_2 X0 X4 X3))))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarSKI X0 X1 = k2\_tarSKI X1 X0 \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow \\
& (((X3 = k11\_lattice3 X0 X1 X2) \wedge (r2\_yellow\_0 X0 (k2\_tarSKI X1 X2))) \Rightarrow \\
& ((r1\_orders\_2 X0 X3 X1) \wedge ((r1\_orders\_2 X0 X3 X2) \wedge (\forall X4.(m1\_subset\_1 \\
& X4 (u1\_struct\_0 X0)) \Rightarrow (((r1\_orders\_2 X0 X4 X1) \wedge (r1\_orders\_2 X0 \\
& X4 X2)) \Rightarrow (r1\_orders\_2 X0 X4 X3)))))) \wedge (((r1\_orders\_2 X0 X3 X1) \wedge ( \\
& (r1\_orders\_2 X0 X3 X2) \wedge (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\
& X0)) \Rightarrow ((r1\_orders\_2 X0 X4 X1) \wedge (r1\_orders\_2 X0 X4 X2)) \Rightarrow (r1\_orders\_2 \\
& X0 X4 X3)))))) \Rightarrow ((X3 = k11\_lattice3 X0 X1 X2) \wedge (r2\_yellow\_0 X0 (k2\_tarSKI \\
& X1 X2))))))
\end{aligned}$$