t20_yellow_0 (TM-Fai94X1DhVwMnGWap9BiRrX6APLsKNN3x)

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Let $v5\_orders\_2 : \iota \Rightarrow o$ be given. Let $l1\_orders\_2 : \iota \Rightarrow o$ be given. Let $v1\_lattice3 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((v5\_orders\_2\ X0) \wedge (l1\_orders\_2\ X0)) \Rightarrow (\forall X1.\ (m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow ((((X3 = k10\_lattice3\ X0\ X1\ X2) \wedge (r1\_yellow\_0\ X0\ (k2\_tarski\ X1\ X2))) \Rightarrow ((r1\_orders\_2\ X0\ X1\ X3) \wedge ((r1\_orders\_2\ X0\ X2\ X3) \wedge (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0)) \Rightarrow (((r1\_orders\_2\ X0\ X1\ X4) \wedge (r1\_orders\_2\ X0\ X2\ X4)) \Rightarrow (r1\_orders\_2\ X0\ X3\ X4)))))) \wedge (((r1\_orders\_2\ X0\ X1\ X3) \wedge ((r1\_orders\_2\ X0\ X2\ X3) \wedge (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0)) \Rightarrow (((r1\_orders\_2\ X0\ X1\ X4) \wedge (r1\_orders\_2\ X0\ X2\ X4)) \Rightarrow (r1\_orders\_2\ X0\ X3\ X4))))) \Rightarrow ((X3 = k10\_lattice3\ X0\ X1\ X2) \wedge (r1\_yellow\_0\ X0\ (k2\_tarski\ X1\ X2)))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1\_orders\_2\ X0) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)))) \Rightarrow (m1\_subset\_1\ (k10\_lattice3\ X0\ X1\ X2)\ (u1\_struct\_0\ X0)) \tag{2}$$

Assume the following.

$$\forall X0.(l1\_orders\_2\ X0) \Rightarrow ((v1\_lattice3\ X0) \Leftrightarrow (\forall X1.(\ m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\exists X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \wedge ((r1\_orders\_2\ X0\ X1\ X3) \wedge ((r1\_orders\_2\ X0\ X2\ X3) \wedge (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0)) \Rightarrow (((r1\_orders\_2\ X0\ X1\ X4) \wedge (r1\_orders\_2\ X0\ X2\ X4)) \Rightarrow (r1\_orders\_2\ X0\ X3\ X4)))))))) \tag{3}$$

Theorem 1

$$\forall X0.((v5\_orders\_2\ X0)\wedge(l1\_orders\_2\ X0))\Rightarrow((v1\_lattice3\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(r1\_yellow\_0\ X0\ (k2\_tarski\ X1\ X2)))))$$