

t1_conlat_2 (TMHDFpEVRfRQGZPhmAiFeFX- foNFkPT3uUhU)

October 27, 2020

Let $v1_conlat_1 : \iota \Rightarrow o$ be given. Let $l1_conlat_1 : \iota \Rightarrow o$ be given. Let $k5_lattices : \iota \Rightarrow \iota$ be given. Let $k11_conlat_1 : \iota \Rightarrow \iota$ be given. Let $k6_conlat_1 : \iota \Rightarrow \iota$ be given. Let $k6_lattices : \iota \Rightarrow \iota$ be given. Let $k5_conlat_1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_conlat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_conlat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_conlat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7_conlat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l2_conlat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ 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 $l3_lattices : \iota \Rightarrow o$ be given. Let $r1_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $k3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v13_lattices : \iota \Rightarrow o$ be given. Let $v3_lattices : \iota \Rightarrow o$ be given. Let $v15_lattices : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $v4_conlat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v9_conlat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v8_conlat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_conlat_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v14_lattices : \iota \Rightarrow o$ be given. Let $v5_lattices : \iota \Rightarrow o$ be given. Let $v7_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \Rightarrow (\forall X1. \\
 & (m1_subset_1 X1 (u1_struct_0 (k11_conlat_1 X0))) \Rightarrow (\forall X2. \\
 & (m1_subset_1 X2 (u1_struct_0 (k11_conlat_1 X0))) \Rightarrow ((r3_lattices \\
 & (k11_conlat_1 X0) X1 X2) \Leftrightarrow (r2_conlat_1 X0 (k12_conlat_1 X0 X1) (\\
 & k12_conlat_1 X0 X2))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \Rightarrow (\forall X1. \\
 & ((\neg v5_conlat_1 X1 X0) \wedge ((v7_conlat_1 X1 X0) \wedge (l2_conlat_1 X1 X0))) \Rightarrow \\
 & ((r2_conlat_1 X0 X1 (k5_conlat_1 X0)) \wedge (r2_conlat_1 X0 (k6_conlat_1 \\
 & X0) X1)))
 \end{aligned} \tag{2}$$

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.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v4_lattices \\ & X0) \wedge (l2_lattices X0)) \wedge (m1_subset_1 X1 (u1_struct_0 X0)) \wedge \\ & m1_subset_1 X2 (u1_struct_0 X0))) \Rightarrow (k3_lattices X0 X1 X2 = k1_lattices \\ & X0 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (v10_lattices X0) \wedge \\ & (v13_lattices X0) \wedge (l3_lattices X0))) \wedge (m1_subset_1 X1 (u1_struct_0 \\ & X0))) \Rightarrow (k3_lattices X0 (k5_lattices X0) X1 = X1) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \Rightarrow ((\neg v2_struct_0 \\ & (k11_conlat_1 X0)) \wedge (v3_lattices (k11_conlat_1 X0)) \wedge (v10_lattices \\ & (k11_conlat_1 X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \Rightarrow ((\neg v2_struct_0 \\ & (k11_conlat_1 X0)) \wedge (v3_lattices (k11_conlat_1 X0)) \wedge (v15_lattices \\ & (k11_conlat_1 X0))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. (l3_lattices X0) \Rightarrow ((l1_lattices X0) \wedge (l2_lattices X0)) \quad (8)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l2_lattices X0)) \Rightarrow (m1_subset_1 \\ (k6_lattices X0) (u1_struct_0 X0)) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \Rightarrow ((v4_conlat_1 \\ & (k6_conlat_1 X0) X0) \wedge ((\neg v5_conlat_1 (k6_conlat_1 X0) X0) \wedge ((v7_conlat_1 \\ & (k6_conlat_1 X0) X0) \wedge ((v9_conlat_1 (k6_conlat_1 X0) X0) \wedge (l2_conlat_1 \\ & (k6_conlat_1 X0) X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_lattices X0)) \Rightarrow (m1_subset_1 (k5_lattices X0) (u1_struct_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \Rightarrow ((v4_conlat_1 (k5_conlat_1 X0) X0) \wedge ((\neg v5_conlat_1 (k5_conlat_1 X0) X0) \wedge ((v7_conlat_1 (k5_conlat_1 X0) X0) \wedge ((v8_conlat_1 (k5_conlat_1 X0) X0) \wedge (l2_conlat_1 (k5_conlat_1 X0) X0)))))) \quad (12)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \wedge ((v4_conlat_1 X1 X0) \wedge ((\neg v5_conlat_1 X1 X0) \wedge ((v7_conlat_1 X1 X0) \wedge (l2_conlat_1 X1 X0)))))) \Rightarrow (m1_subset_1 (k1_conlat_2 X0 X1) (u1_struct_0 (k11_conlat_1 X0))) \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \wedge (m1_subset_1 X1 (u1_struct_0 (k11_conlat_1 X0)))) \Rightarrow ((v4_conlat_1 (k12_conlat_1 X0 X1) X0) \wedge ((\neg v5_conlat_1 (k12_conlat_1 X0 X1) X0) \wedge ((v7_conlat_1 (k12_conlat_1 X0 X1) X0) \wedge (l2_conlat_1 (k12_conlat_1 X0 X1) X0)))))) \quad (14)$$

Assume the following.

$$\forall X0. ((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \Rightarrow ((\neg v2_struct_0 (k11_conlat_1 X0)) \wedge ((v3_lattices (k11_conlat_1 X0)) \wedge (l3_lattices (k11_conlat_1 X0)))) \quad (15)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l2_lattices X0)) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((r1_lattices X0 X1 X2) \Leftrightarrow (k1_lattices X0 X1 X2 = X2)))) \quad (16)$$

Assume the following.

$$\forall X0. ((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 (k11_conlat_1 X0))) \Rightarrow (k12_conlat_1 X0 X1 = X1)) \quad (17)$$

Assume the following.

$$\forall X0. ((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \Rightarrow (\forall X1. ((v4_conlat_1 X1 X0) \wedge ((\neg v5_conlat_1 X1 X0) \wedge ((v7_conlat_1 X1 X0) \wedge (l2_conlat_1 X1 X0)))) \Rightarrow (k1_conlat_2 X0 X1 = X1)) \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l2_lattices X0)) \Rightarrow ((v14_lattices \\ X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((X1 = k6_lattices \\ X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((k1_lattices \\ X0 X1 X2 = X1) \wedge (k1_lattices X0 X2 X1 = X1)))))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge (v4_lattices \\ X0) \wedge (l2_lattices X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k3_lattices X0 X1 X2 = k3_lattices \\ X0 X2 X1) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_lattices X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v15_lattices \\ X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v13_lattices X0) \wedge (v14_lattices X0)))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_lattices X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v10_lattices \\ X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v4_lattices X0) \wedge ((v5_lattices X0) \wedge \\ ((v6_lattices X0) \wedge ((v7_lattices X0) \wedge ((v8_lattices X0) \wedge (v9_lattices \\ X0)))))))) \end{aligned} \quad (22)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v1_conlat_1 X0) \wedge (l1_conlat_1 X0)) \Rightarrow ((k5_lattices \\ (k11_conlat_1 X0) = k6_conlat_1 X0) \wedge (k6_lattices (k11_conlat_1 \\ X0) = k5_conlat_1 X0)) \end{aligned}$$