

t47_knaster

(TMLg2XxnL6uAJgHcVTCU6fB6BtNLYKgzUHA)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_lattice3 : \iota \Rightarrow \iota$ be given. Let $v14_quantal1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_setfam_1 : \iota \Rightarrow \iota$ be given. Let $v6_cohsp_1 : \iota \Rightarrow o$ be given. Let $k1_knaster : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_knaster : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_abian : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_knaster : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v4_lattice3 : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_knaster : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $r1_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k5_knaster : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_lattices : \iota \Rightarrow \iota$ 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 $v3_lattices : \iota \Rightarrow o$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k9_setfam_1 \\
 & X0) (k9_setfam_1 X0)) \wedge ((v6_cohsp_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
 & (k2_zfmisc_1 (k9_setfam_1 X0) (k9_setfam_1 X0)))))) \Rightarrow (\forall X2. \\
 & (m1_subset_1 X2 (k1_zfmisc_1 X0)) \Rightarrow ((r2_abian (k9_setfam_1 X0) \\
 & X2 X1) \Rightarrow ((r1_tarski (k1_knaster X0 X1) X2) \wedge (r1_tarski X2 (k2_knaster \\
 & X0 X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k9_setfam_1 \\
 & X0) (k9_setfam_1 X0)) \wedge ((v6_cohsp_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
 & (k2_zfmisc_1 (k9_setfam_1 X0) (k9_setfam_1 X0)))))) \Rightarrow (r2_abian \\
 & (k9_setfam_1 X0) (k1_knaster X0 X1) X1)
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ (v1_funct_2 X1 (u1_struct_0 (k1_lattice3 X0)) (u1_struct_0 (k1_lattice3 \\ X0))) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\ (k1_lattice3 X0)) (u1_struct_0 (k1_lattice3 X0)))))) \Rightarrow ((v14_quantal1 \\ X1 (k1_lattice3 X0)) \Leftrightarrow (v6_cohsp_1 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v4_lattice3 \\ X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 \\ X1 (u1_struct_0 X0) (u1_struct_0 X0)) \wedge ((v14_quantal1 X1 X0) \wedge (\\ m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ X0)))))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((r2_abian \\ (u1_struct_0 X0) X2 X1) \Rightarrow ((r3_lattices X0 (k9_knaster X0 X1) X2) \wedge \\ (r3_lattices X0 X2 (k10_knaster X0 X1)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v4_lattice3 \\ X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 \\ X1 (u1_struct_0 X0) (u1_struct_0 X0)) \wedge ((v14_quantal1 X1 X0) \wedge (\\ m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ X0)))))) \Rightarrow ((r2_abian (u1_struct_0 X0) (k9_knaster X0 X1) X1) \wedge \\ (\exists X2.(v3_ordinal1 X2) \wedge ((r1_ordinal1 (k1_card_1 X2) (k1_card_1 \\ (u1_struct_0 X0))) \wedge (k5_knaster X0 X1 (k5_lattices X0) X2 = k9_knaster \\ X0 X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1_subset_1 X1 (u1_struct_0 (k1_lattice3 \\ X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 (k1_lattice3 \\ X0))) \Rightarrow ((r1_lattices (k1_lattice3 X0) X1 X2) \Leftrightarrow (r1_tarski X1 X2))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v6_lattices \\ X0) \wedge ((v8_lattices X0) \wedge ((v9_lattices X0) \wedge (l3_lattices X0)))) \wedge \\ ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 \\ X0)))) \Rightarrow ((r3_lattices X0 X1 X2) \Leftrightarrow (r1_lattices X0 X1 X2)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.k9_setfam_1 X0 = k1_zfmisc_1 X0 \quad (8)$$

Assume the following.

$$\forall X0.(v3_lattices (k1_lattice3 X0)) \wedge (v4_lattice3 (k1_lattice3 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(v3_lattices (k1_lattice3 X0)) \wedge (v10_lattices (k1_lattice3 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(\neg v2_struct_0 (k1_lattice3 X0)) \wedge (v3_lattices (k1_lattice3 X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ & ((v4_lattice3 X0) \wedge (l3_lattices X0)))) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 \\ & X1 (u1_struct_0 X0) (u1_struct_0 X0)) \wedge ((v14_quantal1 X1 X0) \wedge \\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & X0)))))) \Rightarrow (m1_subset_1 (k9_knaster X0 X1) (u1_struct_0 X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(v3_lattices (k1_lattice3 X0)) \wedge (l3_lattices (k1_lattice3 X0)) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k9_setfam_1 \\ & X0) (k9_setfam_1 X0)) \wedge ((v6_cohsp_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k9_setfam_1 X0) (k9_setfam_1 X0)))))) \Rightarrow (m1_subset_1 \\ & (k1_knaster X0 X1) (k1_zfmisc_1 X0)) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v3_lattices X1) \wedge (l3_lattices X1)) \Rightarrow (\\ & (X1 = k1_lattice3 X0) \Leftrightarrow ((u1_struct_0 X1 = k9_setfam_1 X0) \wedge (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (k1_zfmisc_1 X0)) \Rightarrow ((k1_binop_1 (u2_lattices X1) X2 X3 = k4_subset_1 \\ & X0 X2 X3) \wedge (k1_binop_1 (u1_lattices X1) X2 X3 = k9_subset_1 X0 X2 X3)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1) \Leftrightarrow ((r1_tarski X0 X1) \wedge (r1_tarski X1 X0)) \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l3_lattices X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v10_lattices \\ & X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v4_lattices X0) \wedge ((v5_lattices X0) \wedge \\ & ((v6_lattices X0) \wedge ((v7_lattices X0) \wedge ((v8_lattices X0) \wedge (v9_lattices \\ & X0)))))))) \end{aligned} \quad (17)$$

Theorem 1

$$\begin{aligned} \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge \\ (v1_funct_2 X1 (u1_struct_0 (k1_lattice3 X0)) (u1_struct_0 (k1_lattice3 \\ X0))) \wedge ((v14_quantal1 X1 (k1_lattice3 X0)) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ (k2_zfmisc_1 (u1_struct_0 (k1_lattice3 X0)) (u1_struct_0 (k1_lattice3 \\ X0)))))) \Rightarrow (\exists X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k9_setfam_1 \\ X0) (k9_setfam_1 X0)) \wedge ((v6_cohsp_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 (k9_setfam_1 X0) (k9_setfam_1 X0)))))) \wedge (k1_knaster \\ X0 X2 = k9_knaster (k1_lattice3 X0) X1))) \end{aligned}$$