

t45\_knaster  
(TMXVr1QpkJNcfGVn7bUWB25hq76ex76YrVr)

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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  $v1\_funct\_1 : \iota \Rightarrow o$  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  $v14\_quantal1 : \iota \Rightarrow \iota \Rightarrow o$  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  $r3\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_knaster : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_lattices : \iota \Rightarrow o$  be given. Let  $l2\_lattices : \iota \Rightarrow o$  be given. Let  $r1\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_abian : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_knaster : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k5\_knaster : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $l1\_lattices : \iota \Rightarrow o$  be given. Let  $v4\_lattices : \iota \Rightarrow o$  be given. Let  $v7\_lattices : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v5\_lattices X0) \wedge (l2\_lattices \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow (((r1\_lattices X0 X1 X2) \wedge (r1\_lattices X0 X2 \\ & X3)) \Rightarrow (r1\_lattices X0 X1 X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v4\_lattice3 \\ & X0) \wedge (l3\_lattices X0)))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\ & X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v14\_quantal1 X1 X0) \wedge \\ & m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X0)))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((r2\_abian \\ & (u1\_struct\_0 X0) X2 X1) \Rightarrow ((r3\_lattices X0 (k9\_knaster X0 X1) X2) \wedge \\ & (r3\_lattices X0 X2 (k10\_knaster X0 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v4\_lattice3 \\
& X0) \wedge (l3\_lattices X0)))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\
& X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v14\_quantal1 X1 X0) \wedge ( \\
& m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\neg( \\
& r3\_lattices X0 X2 (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) \\
& X1 X2)) \wedge (\forall X3.(v3\_ordinal1 X3) \Rightarrow (\neg(r1\_ordinal1 (k1\_card\_1 \\
& X3) (k1\_card\_1 (u1\_struct\_0 X0))) \wedge (r2\_abian (u1\_struct\_0 X0) \\
& (k5\_knaster X0 X1 X2 X3) X1))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v4\_lattice3 \\
& X0) \wedge (l3\_lattices X0)))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\
& X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v14\_quantal1 X1 X0) \wedge ( \\
& m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((r3\_lattices \\
& X0 X2 (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X1 X2)) \Rightarrow (\forall X3. \\
& (v3\_ordinal1 X3) \Rightarrow (r3\_lattices X0 X2 (k5\_knaster X0 X1 X2 X3))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v6\_lattices \\
& X0) \wedge ((v8\_lattices X0) \wedge ((v9\_lattices X0) \wedge (l3\_lattices X0)))) \wedge \\
& ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0)))) \Rightarrow ((r3\_lattices X0 X1 X2) \Leftrightarrow (r1\_lattices X0 X1 X2))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0. (l3\_lattices X0) \Rightarrow ((l1\_lattices X0) \wedge (l2\_lattices X0)) \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2\_struct\_0 \\
& X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices X0))) \wedge (((v1\_funct\_1 X1) \wedge \\
& ((v1\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \wedge \\
& ((m1\_subset\_1 X2 (u1\_struct\_0 X0)) \wedge (v3\_ordinal1 X3))) \Rightarrow (m1\_subset\_1 \\
& (k5\_knaster X0 X1 X2 X3) (u1\_struct\_0 X0))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge \\
& ((v4\_lattice3 X0) \wedge (l3\_lattices X0)))) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\
& X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v14\_quantal1 X1 X0) \wedge ( \\
& m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)))))) \Rightarrow (m1\_subset\_1 (k10\_knaster X0 X1) (u1\_struct\_0 X0))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} \forall X0. (&l3\_lattices\ X0) \Rightarrow (((\neg v2\_struct\_0\ X0) \wedge (v10\_lattices \\ &X0)) \Rightarrow ((\neg v2\_struct\_0\ X0) \wedge ((v4\_lattices\ X0) \wedge ((v5\_lattices\ X0) \wedge \\ &((v6\_lattices\ X0) \wedge ((v7\_lattices\ X0) \wedge ((v8\_lattices\ X0) \wedge (v9\_lattices \\ &X0)))))))) \end{aligned} \quad (9)$$

**Theorem 1**

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0\ X0) \wedge ((v10\_lattices\ X0) \wedge ((v4\_lattice3 \\ &X0) \wedge (l3\_lattices\ X0)))) \Rightarrow (\forall X1. ((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2 \\ &X1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \wedge ((v14\_quantal1\ X1\ X0) \wedge ( \\ &m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0 \\ &X0)))))) \Rightarrow (\forall X2. (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow ((r3\_lattices \\ &X0\ X2\ (k3\_funct\_2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ X1\ X2)) \Rightarrow (r3\_lattices \\ &X0\ X2\ (k10\_knaster\ X0\ X1)))))) \end{aligned}$$