

# l62\_poset\_1 (TMXYYyMSECHf- pxq5oC8KmA6dUPqTtVi3Wgp)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v3\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v4\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v5\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v1\_poset\_1 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  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  $k6\_poset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v6\_orders\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (k7\_relset\_1 X0 X1 X2 X3 = k7\_relat\_1 X2 X3) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (5)$$

Assume the following.

$$v1\_xboole\_0 \ k1\_xboole\_0 \quad (6)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 \ X0) \Rightarrow (l1\_struct\_0 \ X0) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 \ X0) \wedge ((v1\_orders\_2 \ X0) \wedge \\ & ((v3\_orders\_2 \ X0) \wedge ((v4\_orders\_2 \ X0) \wedge ((v5\_orders\_2 \ X0) \wedge ((v1\_poset\_1 \\ & \ X0) \wedge (l1\_orders\_2 \ X0)))))) \wedge ((\neg v2\_struct\_0 \ X1) \wedge ((v1\_orders\_2 \\ & \ X1) \wedge ((v3\_orders\_2 \ X1) \wedge ((v4\_orders\_2 \ X1) \wedge ((v5\_orders\_2 \ X1) \wedge \\ & ((v1\_poset\_1 \ X1) \wedge (l1\_orders\_2 \ X1))))))))) \Rightarrow ((\neg v2\_struct\_0 \ (k6\_poset\_1 \\ & \ X0 \ X1)) \wedge ((v1\_orders\_2 \ (k6\_poset\_1 \ X0 \ X1)) \wedge ((v3\_orders\_2 \ (k6\_poset\_1 \\ & \ X0 \ X1)) \wedge ((v4\_orders\_2 \ (k6\_poset\_1 \ X0 \ X1)) \wedge ((v5\_orders\_2 \ (k6\_poset\_1 \\ & \ X0 \ X1)) \wedge (l1\_orders\_2 \ (k6\_poset\_1 \ X0 \ X1))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 \ X0) \wedge (v1\_funct\_1 \ X0)) \Rightarrow (\forall X1.\forall X2. \\ & (X2 = k7\_relat\_1 \ X0 \ X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow (\exists X4.(X4 \in k9\_xtuple\_0 \\ & \ X0) \wedge ((X4 \in X1) \wedge (X3 = k1\_funct\_1 \ X0 \ X4)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ & \ (k2\_zfmisc\_1 \ X0 \ X1))) \Rightarrow (((X1 \neq k1\_xboole\_0) \Rightarrow ((v1\_funct\_2 \ X2 \ X0 \\ & \ X1) \Leftrightarrow (X0 = k1\_relset\_1 \ X0 \ X2))) \wedge ((X1 = k1\_xboole\_0) \Rightarrow ((v1\_funct\_2 \\ & \ X2 \ X0 \ X1) \Leftrightarrow (X2 = k1\_xboole\_0)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ & \ (k2\_zfmisc\_1 \ X0 \ X1))) \Rightarrow ((v4\_relat\_1 \ X2 \ X0) \wedge (v5\_relat\_1 \ X2 \ X1)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ & \ (k2\_zfmisc\_1 \ X0 \ X1))) \Rightarrow (v1\_relat\_1 \ X2) \end{aligned} \quad (12)$$

### Theorem 1

$$\begin{aligned} & \forall X0.(((\neg v2\_struct\_0 \ X0) \wedge ((v1\_orders\_2 \ X0) \wedge ((v3\_orders\_2 \\ & \ X0) \wedge ((v4\_orders\_2 \ X0) \wedge ((v5\_orders\_2 \ X0) \wedge ((v1\_poset\_1 \ X0) \wedge ( \\ & \ l1\_orders\_2 \ X0)))))) \Rightarrow (\forall X1.((v1\_funct\_1 \ X1) \wedge ((v1\_funct\_2 \\ & \ X1 \ (u1\_struct\_0 \ (k6\_poset\_1 \ X0 \ X0)) \ (u1\_struct\_0 \ X0)) \wedge (m1\_subset\_1 \\ & \ X1 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (u1\_struct\_0 \ (k6\_poset\_1 \ X0 \ X0)) \\ & \ (u1\_struct\_0 \ X0)))))) \Rightarrow (\forall X2.((\neg v1\_xboole\_0 \ X2) \wedge ((v6\_orders\_2 \\ & \ X2 \ (k6\_poset\_1 \ X0 \ X0)) \wedge (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (u1\_struct\_0 \\ & \ (k6\_poset\_1 \ X0 \ X0)))))) \Rightarrow (\forall X3.(X3 \in X2) \Rightarrow (k1\_funct\_1 \ X1 \ X3 \in \\ & \ k7\_relset\_1 \ (u1\_struct\_0 \ (k6\_poset\_1 \ X0 \ X0)) \ (u1\_struct\_0 \ X0 \\ & \ X1 \ X2)))))) \end{aligned}$$