

# l50\_poset\_1

(TMS7sSTF2Ue3HQ8HMZU3CeLjVVk2VD b8ZRF)

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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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_poset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_poset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_poset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $u1\_orders\_2 : \iota \Rightarrow \iota$  be given. Let  $k4\_poset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_poset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ & X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow \\ & (((X1 = k1\_xboole\_0) \Rightarrow (X0 = k1\_xboole\_0)) \Rightarrow (X2 \in k1\_funct\_2 X0 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1)))))) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow ((r2\_funct\_2 X0 X1 X2 \\ & X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X1) \wedge (m1\_funct\_2 \\ & X2 X0 X1)) \Rightarrow (\forall X3. (m2\_funct\_2 X3 X0 X1 X2) \Leftrightarrow (m1\_subset\_1 X3 \\ & X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow (k9\_funct\_2 X0 X1 = k1\_funct\_2 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))) \Rightarrow (\forall X2.\forall X3.(g1\_orders\_2 X0 X1 = g1\_orders\_2 X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0) \wedge ((v1\_orders\_2 X0) \wedge \\ & ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_poset\_1 \\ & X0) \wedge (l1\_orders\_2 X0)))))) \wedge ((\neg v2\_struct\_0 X1) \wedge ((v1\_orders\_2 \\ & X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge \\ & ((v1\_poset\_1 X1) \wedge (l1\_orders\_2 X1)))))))) \Rightarrow ((v1\_funct\_1 (k9\_poset\_1 \\ & X0 X1)) \wedge ((v1\_funct\_2 (k9\_poset\_1 X0 X1) (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X1)) \wedge (v2\_poset\_1 (k9\_poset\_1 X0 X1) X0 X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (8)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (9)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (m1\_subset\_1 (u1\_orders\_2 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))) \quad (10)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (l1\_struct\_0 X0) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0) \wedge ((v1\_orders\_2 X0) \wedge \\ & ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_poset\_1 \\ & X0) \wedge (l1\_orders\_2 X0)))))) \wedge ((\neg v2\_struct\_0 X1) \wedge ((v1\_orders\_2 \\ & X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge \\ & ((v1\_poset\_1 X1) \wedge (l1\_orders\_2 X1)))))))) \Rightarrow ((v1\_funct\_1 (k9\_poset\_1 \\ & X0 X1)) \wedge ((v1\_funct\_2 (k9\_poset\_1 X0 X1) (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X1)) \wedge (m1\_subset\_1 (k9\_poset\_1 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0 X1)\Rightarrow(m1\_funct\_2 (k9\_funct\_2 X0 X1) X0 X1) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v1\_orders\_2 X0)\wedge \\ & ((v3\_orders\_2 X0)\wedge((v4\_orders\_2 X0)\wedge((v5\_orders\_2 X0)\wedge((v1\_poset\_1 \\ & X0)\wedge(l1\_orders\_2 X0))))))\wedge((\neg v2\_struct\_0 X1)\wedge((v1\_orders\_2 \\ & X1)\wedge((v3\_orders\_2 X1)\wedge((v4\_orders\_2 X1)\wedge((v5\_orders\_2 X1)\wedge \\ & ((v1\_poset\_1 X1)\wedge(l1\_orders\_2 X1))))))\Rightarrow((\neg v2\_struct\_0 (k6\_poset\_1 \\ & X0 X1))\wedge((v1\_orders\_2 (k6\_poset\_1 X0 X1))\wedge((v3\_orders\_2 (k6\_poset\_1 \\ & X0 X1))\wedge((v4\_orders\_2 (k6\_poset\_1 X0 X1))\wedge((v5\_orders\_2 (k6\_poset\_1 \\ & X0 X1))\wedge(l1\_orders\_2 (k6\_poset\_1 X0 X1)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v1\_orders\_2 X0)\wedge((v3\_orders\_2 \\ & X0)\wedge((v4\_orders\_2 X0)\wedge((v5\_orders\_2 X0)\wedge((v1\_poset\_1 X0)\wedge \\ & l1\_orders\_2 X0))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge((v1\_orders\_2 \\ & X1)\wedge((v3\_orders\_2 X1)\wedge((v4\_orders\_2 X1)\wedge((v5\_orders\_2 X1)\wedge \\ & ((v1\_poset\_1 X1)\wedge(l1\_orders\_2 X1))))))\Rightarrow(k6\_poset\_1 X0 X1 = g1\_orders\_2 \\ & (k4\_poset\_1 X0 X1) (k5\_poset\_1 X0 X1)) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((\neg v2\_struct\_0 X0)\wedge((v1\_orders\_2 X0)\wedge((v3\_orders\_2 \\ & X0)\wedge((v4\_orders\_2 X0)\wedge((v5\_orders\_2 X0)\wedge((v1\_poset\_1 X0)\wedge \\ & l1\_orders\_2 X0))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge((v1\_orders\_2 \\ & X1)\wedge((v3\_orders\_2 X1)\wedge((v4\_orders\_2 X1)\wedge((v5\_orders\_2 X1)\wedge \\ & ((v1\_poset\_1 X1)\wedge(l1\_orders\_2 X1))))))\Rightarrow(k4\_poset\_1 X0 X1 = ReplSep \\ & (toset (\lambda X2 : \iota.m2\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X1) (k9\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X1))) (\lambda X2 : \\ & \iota.\exists X3.((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X1))\wedge((v2\_poset\_1 X3 X0 X1)\wedge(m1\_subset\_1 X3 ( \\ & k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1))))))\wedge \\ & (r2\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X1) X3 X2)) (\lambda X2 : \\ & \iota.X2))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow((v1\_orders\_2 X0)\Rightarrow(X0 = g1\_orders\_2 (u1\_struct\_0 X0) (u1\_orders\_2 X0))) \quad (17)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (v1\_orders\_2 X0) \wedge ((v3\_orders\_2 \\ & X0) \wedge (v4\_orders\_2 X0) \wedge (v5\_orders\_2 X0) \wedge ((v1\_poset\_1 X0) \wedge \\ & l1\_orders\_2 X0)))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge (v1\_orders\_2 \\ & X1) \wedge (v3\_orders\_2 X1) \wedge (v4\_orders\_2 X1) \wedge (v5\_orders\_2 X1) \wedge \\ & ((v1\_poset\_1 X1) \wedge (l1\_orders\_2 X1)))) \Rightarrow (m1\_subset\_1 (k9\_poset\_1 \\ & X0 X1) (u1\_struct\_0 (k6\_poset\_1 X0 X1))) \end{aligned}$$