

# l56\_poset\_1

(TMKU8z2Ef5x9Hia8xha9RUC7fKj5ZXT3Lqb)

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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  $k10\_poset\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_poset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_orders\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $v2\_poset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_yellow\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_poset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_poset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_poset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_orders\_2 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v1\_orders\_2 X0) \wedge ((v3\_orders\_2 \\
& X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_poset\_1 X0) \wedge ( \\
& l1\_orders\_2 X0)))))) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\
& X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v2\_poset\_1 X1 X0 X0) \wedge ( \\
& m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)))))) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)) \wedge ((v2\_poset\_1 X2 X0 X0) \wedge (m1\_subset\_1 X2 ( \\
& k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow \\
& ((r1\_yellow\_2 (u1\_struct\_0 X0) X0 X1 X2) \Rightarrow (r3\_orders\_2 X0 (k3\_poset\_1 \\
& X0 X1) (k3\_poset\_1 X0 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 \\
& X0) \wedge (l1\_orders\_2 X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ( \\
& m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow ((r3\_orders\_2 X0 X1 X2) \Leftrightarrow (r1\_orders\_2 \\
& X0 X1 X2))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & (((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))))\wedge(m1\_subset\_1 X3 X0)))\Rightarrow(k3\_funct\_2 X0 \\ & X1 X2 X3 = k1\_funct\_1 X2 X3) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v1\_orders\_2 X0)\wedge((v3\_orders\_2 \\ & X0)\wedge((v4\_orders\_2 X0)\wedge((v5\_orders\_2 X0)\wedge((v1\_poset\_1 X0)\wedge( \\ & l1\_orders\_2 X0))))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & (k6\_poset\_1 X0 X0)))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & (k6\_poset\_1 X0 X0)))\Rightarrow((r3\_orders\_2 (k6\_poset\_1 X0 X0) X1 X2)\Rightarrow( \\ & (X1 \in k4\_poset\_1 X0 X0)\wedge((X2 \in k4\_poset\_1 X0 X0)\wedge(\exists X3.((v1\_funct\_1 \\ & X3)\wedge((v1\_funct\_2 X3 (u1\_struct\_0 X0) (u1\_struct\_0 X0))\wedge((v2\_poset\_1 \\ & X3 X0 X0)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X0))))))\wedge(\exists X4.((v1\_funct\_1 X4)\wedge((v1\_funct\_2 \\ & X4 (u1\_struct\_0 X0) (u1\_struct\_0 X0))\wedge((v2\_poset\_1 X4 X0 X0)\wedge( \\ & m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X0))))))\wedge((X1 = X3)\wedge((X2 = X4)\wedge(r1\_yellow\_2 (u1\_struct\_0 X0) \\ & X0 X3 X4)))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X0)))\Rightarrow(\forall X2.\forall X3.(g1\_orders\_2 X0 X1 = g1\_orders\_2 \\ & X2 X3)\Rightarrow((X0 = X2)\wedge(X1 = X3))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v1\_orders\_2 X0)\wedge \\ & ((v3\_orders\_2 X0)\wedge((v4\_orders\_2 X0)\wedge((v5\_orders\_2 X0)\wedge((v1\_poset\_1 \\ & X0)\wedge(l1\_orders\_2 X0))))))\wedge((\neg v2\_struct\_0 X1)\wedge((v1\_orders\_2 \\ & X1)\wedge((v3\_orders\_2 X1)\wedge((v4\_orders\_2 X1)\wedge((v5\_orders\_2 X1)\wedge \\ & ((v1\_poset\_1 X1)\wedge(l1\_orders\_2 X1))))))\Rightarrow((\neg v2\_struct\_0 (k6\_poset\_1 \\ & X0 X1))\wedge((v1\_orders\_2 (k6\_poset\_1 X0 X1))\wedge((v3\_orders\_2 (k6\_poset\_1 \\ & X0 X1))\wedge((v4\_orders\_2 (k6\_poset\_1 X0 X1))\wedge((v5\_orders\_2 (k6\_poset\_1 \\ & X0 X1))\wedge(v1\_poset\_1 (k6\_poset\_1 X0 X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v1\_orders\_2 X0) \wedge \\ & ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_poset\_1 \\ & X0) \wedge (l1\_orders\_2 X0)))))) \wedge ((\neg v2\_struct\_0 X1) \wedge ((v1\_orders\_2 \\ & X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge \\ & ((v1\_poset\_1 X1) \wedge (l1\_orders\_2 X1))))))))) \Rightarrow ((\neg v2\_struct\_0 (k6\_poset\_1 \\ & X0 X1)) \wedge ((v1\_orders\_2 (k6\_poset\_1 X0 X1)) \wedge ((v3\_orders\_2 (k6\_poset\_1 \\ & X0 X1)) \wedge ((v4\_orders\_2 (k6\_poset\_1 X0 X1)) \wedge ((v5\_orders\_2 (k6\_poset\_1 \\ & X0 X1)) \wedge (l1\_orders\_2 (k6\_poset\_1 X0 X1)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v1\_orders\_2 X0) \wedge \\ & ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_poset\_1 \\ & X0) \wedge (l1\_orders\_2 X0)))))) \wedge ((\neg v2\_struct\_0 X1) \wedge ((v1\_orders\_2 \\ & X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge \\ & ((v1\_poset\_1 X1) \wedge (l1\_orders\_2 X1))))))))) \Rightarrow (m1\_subset\_1 (k5\_poset\_1 \\ & X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k4\_poset\_1 X0 X1) (k4\_poset\_1 \\ & X0 X1)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v1\_orders\_2 X0) \wedge \\ & ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_poset\_1 \\ & X0) \wedge (l1\_orders\_2 X0)))))) \wedge ((\neg v2\_struct\_0 X1) \wedge ((v1\_orders\_2 \\ & X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge \\ & ((v1\_poset\_1 X1) \wedge (l1\_orders\_2 X1))))))))) \Rightarrow (\neg v1\_xboole\_0 (k4\_poset\_1 \\ & X0 X1)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v1\_orders\_2 X0) \wedge ((v3\_orders\_2 \\ & X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_poset\_1 X0) \wedge ( \\ & l1\_orders\_2 X0)))))) \Rightarrow ((v1\_funct\_1 (k10\_poset\_1 X0)) \wedge ((v1\_funct\_2 \\ & (k10\_poset\_1 X0) (u1\_struct\_0 (k6\_poset\_1 X0 X0)) (u1\_struct\_0 \\ & X0)) \wedge (m1\_subset\_1 (k10\_poset\_1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 (k6\_poset\_1 X0 X0)) (u1\_struct\_0 X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v1\_orders\_2 X0) \wedge ((v3\_orders\_2 \\ & X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_poset\_1 X0) \wedge ( \\ & l1\_orders\_2 X0)))))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v1\_orders\_2 \\ & X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge \\ & ((v1\_poset\_1 X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (k6\_poset\_1 X0 X1 = g1\_orders\_2 \\ & (k4\_poset\_1 X0 X1) (k5\_poset\_1 X0 X1))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.(l1\_orders\_2 X1) \Rightarrow (\forall X2. \\
& ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1)))))) \Rightarrow ((v5\_orders\_3 X2 X0 X1) \Leftrightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 X0)) \Rightarrow ((r1\_orders\_2 X0 X3 X4) \Rightarrow (\forall X5.(m1\_subset\_1 \\
& X5 (u1\_struct\_0 X1)) \Rightarrow (\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 \\
& X1)) \Rightarrow (((X5 = k1\_funct\_1 X2 X3) \wedge (X6 = k1\_funct\_1 X2 X4)) \Rightarrow (r1\_orders\_2 \\
& X1 X5 X6))))))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_orders\_2 X0) \wedge ((v3\_orders\_2 \\
& X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_poset\_1 X0) \wedge ( \\
& l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\
& X1 (u1\_struct\_0 (k6\_poset\_1 X0 X0)) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 (k6\_poset\_1 X0 X0)) \\
& (u1\_struct\_0 X0)))))) \Rightarrow ((X1 = k10\_poset\_1 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 \\
& X2 (u1\_struct\_0 (k6\_poset\_1 X0 X0)) \Rightarrow (\forall X3.((v1\_funct\_1 \\
& X3) \wedge ((v1\_funct\_2 X3 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v2\_poset\_1 \\
& X3 X0 X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)))))) \Rightarrow ((X2 = X3) \Rightarrow (k3\_funct\_2 (u1\_struct\_0 \\
& (k6\_poset\_1 X0 X0)) (u1\_struct\_0 X0) X1 X2 = k3\_poset\_1 X0 X3))))))
\end{aligned} \tag{13}$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow ((v1\_orders\_2 X0) \Rightarrow (X0 = g1\_orders\_2 (u1\_struct\_0 X0) (u1\_orders\_2 X0))) \tag{14}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_orders\_2 X0) \wedge ((v3\_orders\_2 \\
& X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_poset\_1 X0) \wedge ( \\
& l1\_orders\_2 X0)))))) \Rightarrow ((v1\_funct\_1 (k10\_poset\_1 X0)) \wedge ((v1\_funct\_2 \\
& (k10\_poset\_1 X0) (u1\_struct\_0 (k6\_poset\_1 X0 X0)) (u1\_struct\_0 \\
& X0)) \wedge ((v5\_orders\_3 (k10\_poset\_1 X0) (k6\_poset\_1 X0 X0) X0) \wedge (m1\_subset\_1 \\
& (k10\_poset\_1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 (k6\_poset\_1 \\
& X0 X0)) (u1\_struct\_0 X0))))))
\end{aligned}$$