

l63_poset_1

(TMcZ1pXV9L7ZBRRDoHk7MK5HDsuUcmrhoQB)

October 27, 2020

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 $v2_poset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_poset_1 : \iota \Rightarrow \iota$ be given. Let $k9_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_yellow_0 : \iota \Rightarrow \iota$ 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 $k1_yellow_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_poset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v5_orders_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_poset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_orders_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k1_poset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_orders_2 X0) \wedge ((v3_orders_2 \\ & X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_poset_1 X0) \wedge (\\ & l1_orders_2 X0)))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 \\ & X1 (u1_struct_0 X0) (u1_struct_0 X0)) \wedge ((v2_poset_1 X1 X0 X0) \wedge (\\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & X0)))))) \Rightarrow (k3_poset_1 X0 X1 = k1_yellow_0 X0 (k2_poset_1 X0 X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 \\ & X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_orders_2 X0) \wedge ((v3_orders_2 \\
& X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_poset_1 X0) \wedge \\
& l1_orders_2 X0)))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 \\
& X1 (u1_struct_0 X0) (u1_struct_0 X0)) \wedge ((v5_orders_3 X1 X0 X0) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\
& X0)))))) \Rightarrow (((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (u1_struct_0 X0) \\
& (u1_struct_0 X0)) \wedge ((v2_poset_1 X1 X0 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))) \Rightarrow (m1_subset_1 \\
& X1 (u1_struct_0 (k6_poset_1 X0 X0))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_orders_2 X0) \wedge ((v3_orders_2 \\
& X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_poset_1 X0) \wedge \\
& l1_orders_2 X0)))))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v6_orders_2 \\
& X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X2 \in X1) \Rightarrow (r3_orders_2 X0 X2 \\
& (k1_yellow_0 X0 X1))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \tag{5}$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow (l1_struct_0 X0) \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v1_orders_2 X0) \wedge \\
& ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_poset_1 \\
& X0) \wedge (l1_orders_2 X0)))))) \wedge ((\neg v2_struct_0 X1) \wedge ((v1_orders_2 \\
& X1) \wedge ((v3_orders_2 X1) \wedge ((v4_orders_2 X1) \wedge ((v5_orders_2 X1) \wedge \\
& ((v1_poset_1 X1) \wedge (l1_orders_2 X1))))))))) \Rightarrow ((\neg v2_struct_0 (k6_poset_1 \\
& X0 X1)) \wedge ((v1_orders_2 (k6_poset_1 X0 X1)) \wedge ((v3_orders_2 (k6_poset_1 \\
& X0 X1)) \wedge ((v4_orders_2 (k6_poset_1 X0 X1)) \wedge ((v5_orders_2 (k6_poset_1 \\
& X0 X1)) \wedge (l1_orders_2 (k6_poset_1 X0 X1))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow (m1_subset_1 (k3_yellow_0 X0) (u1_struct_0 X0)) \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v1_orders_2 X0) \wedge \\
& ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_poset_1 \\
& X0) \wedge (l1_orders_2 X0)))))) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 \\
& (u1_struct_0 X0) (u1_struct_0 X0)) \wedge ((v5_orders_3 X1 X0 X0) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))) \Rightarrow \\
& ((\neg v1_xboole_0 (k2_poset_1 X0 X1)) \wedge ((v6_orders_2 (k2_poset_1 \\
& X0 X1) X0) \wedge (m1_subset_1 (k2_poset_1 X0 X1) (k1_zfmisc_1 (u1_struct_0 \\
& X0))))))
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (((\neg v2_struct_0 X0) \wedge ((v1_orders_2 X0) \wedge ((v3_orders_2 \\
& X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_poset_1 X0) \wedge (\\
& l1_orders_2 X0)))))) \Rightarrow ((v1_funct_1 (k10_poset_1 X0)) \wedge ((v1_funct_2 \\
& (k10_poset_1 X0) (u1_struct_0 (k6_poset_1 X0 X0)) (u1_struct_0 \\
& X0)) \wedge (m1_subset_1 (k10_poset_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 (k6_poset_1 X0 X0)) (u1_struct_0 X0))))))
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (((\neg v2_struct_0 X0) \wedge ((v1_orders_2 X0) \wedge ((v3_orders_2 \\
& X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_poset_1 X0) \wedge (\\
& l1_orders_2 X0)))))) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 \\
& X1 (u1_struct_0 X0) (u1_struct_0 X0)) \wedge ((v5_orders_3 X1 X0 X0) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\
& X0)))))) \Rightarrow (k2_poset_1 X0 X1 = k1_poset_1 X0 X1 (k3_yellow_0 X0)))
\end{aligned} \tag{11}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\
& X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))) \Rightarrow (\forall X1. ((v1_funct_1 \\
& X1) \wedge ((v1_funct_2 X1 (u1_struct_0 X0) (u1_struct_0 X0)) \wedge ((v5_orders_3 \\
& X1 X0 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X0)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow (k1_poset_1 X0 X1 X2 = ReplSep (toset (\lambda X3 : \iota. m1_subset_1 \\
& X3 (u1_struct_0 X0))) (\lambda X3 : \iota. \exists X4. (v7_ordinal1 X4) \wedge \\
& (X3 = k1_funct_1 (k9_funct_7 X1 X4) X2)) (\lambda X3 : \iota. X3))))))
\end{aligned} \tag{12}$$

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.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v1_orders_2 X0) \wedge \\
& ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_poset_1 \\
& X0) \wedge (l1_orders_2 X0)))))) \wedge ((\neg v2_struct_0 X1) \wedge ((v1_orders_2 \\
& X1) \wedge ((v3_orders_2 X1) \wedge ((v4_orders_2 X1) \wedge ((v5_orders_2 X1) \wedge \\
& ((v1_poset_1 X1) \wedge (l1_orders_2 X1)))))) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))) \Rightarrow \\
& (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
& X1)) \wedge (v2_poset_1 X2 X0 X1))) \Rightarrow ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 \\
& (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (v5_orders_3 X2 X0 X1))))
\end{aligned} \tag{14}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_orders_2 X0) \wedge ((v3_orders_2 \\
& X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_poset_1 X0) \wedge (\\
& l1_orders_2 X0)))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 \\
& X1 (u1_struct_0 X0) (u1_struct_0 X0)) \wedge ((v2_poset_1 X1 X0 X0) \wedge (\\
& m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(v7_ordinal1 X4) \Rightarrow \\
& (((X2 = k1_funct_1 (k10_poset_1 X0) X1) \wedge (X3 = k1_funct_1 (k9_funct_7 \\
& X1 X4) (k3_yellow_0 X0))) \Rightarrow (r3_orders_2 X0 X3 X2))))))
\end{aligned}$$