

t17_lopclset (TMM- FJScHEZwB738cyeFJonK6yeQGZoJhmnx)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v17_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_lopclset : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v19_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v20_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_filter_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(X0 \in X1) \wedge (v1_xboole_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices X0) \wedge (l3_lattices X0))))) \Rightarrow ((v1_relat_1 (k8_lopclset X0)) \wedge (v1_funct_1 (k8_lopclset X0))) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices X0) \wedge (l3_lattices X0))))) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X1 = k8_lopclset X0) \Leftrightarrow ((k9_xtuple_0 X1 = u1_struct_0 X0) \wedge (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k1_funct_1 X1 X2 = ReplSep (toset (\lambda X3 : \iota. (\neg v1_xboole_0 X3) \wedge ((v19_lattices X3 X0) \wedge ((v20_lattices X3 X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0)))))) (\lambda X3 : \iota. (v1_filter_0 X3 X0) \wedge (X2 \in X3)) (\lambda X3 : \iota. X3))))))) \quad (4)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge ((\neg v7_struct_0 X1) \wedge \\ & ((v10_lattices X1) \wedge ((v17_lattices X1) \wedge (l3_lattices X1)))))) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow ((X0 \in k1_funct_1 \\ & (k8_lopclset X1) X2) \Leftrightarrow (\exists X3. ((\neg v1_xboole_0 X3) \wedge ((v19_lattices \\ & X3 X1) \wedge ((v20_lattices X3 X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 \\ & X1)))))) \wedge ((X3 = X0) \wedge ((v1_filter_0 X3 X1) \wedge (X2 \in X3)))))) \end{aligned}$$