

t66_filter_0

(TMcCyjDamKnR1HTjeK9iizqzJGUUsAdVdQmz)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v3_filter_0 : \iota \Rightarrow o$ be given. Let $r8_relat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relat_1 : \iota \Rightarrow \iota$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v3_filter_0 \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4. ((\neg v1_xboole_0 \\ & X4) \wedge ((v19_lattices X4 X0) \wedge ((v20_lattices X4 X0) \wedge (m1_subset_1 \\ & X4 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (((k7_filter_0 X0 X1 X2 \in \\ & X4) \wedge (k7_filter_0 X0 X2 X3 \in X4)) \Rightarrow (k7_filter_0 X0 X1 X3 \in X4)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & ((\neg v1_xboole_0 X1) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X1)))) \Rightarrow \\ & (k1_domain_1 X0 X1 X2 X3 = k4_tarski X2 X3) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ & (l3_lattices X0))) \wedge ((\neg v1_xboole_0 X1) \wedge ((v19_lattices X1 X0) \wedge \\ & ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow (v1_relat_1 (k8_filter_0 X0 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_relat_1 X0) \Rightarrow (\forall X1. (r8_relat_2 X0 X1) \Leftrightarrow (\forall X2. \\ & \forall X3. \forall X4. ((X2 \in X1) \wedge ((X3 \in X1) \wedge ((X4 \in X1) \wedge ((k4_tarski \\ & X2 X3 \in X0) \wedge (k4_tarski X3 X4 \in X0)))))) \Rightarrow (k4_tarski X2 X4 \in X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. k4_tarski X0 X1 = k2_tarski (k2_tarski X0 X1) (k1_tarski X0) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1. (((\neg v1_xboole_0 X1) \wedge ((v19_lattices X1 X0) \wedge \\ & ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow (\forall X2. (v1_relat_1 X2) \Rightarrow ((X2 = k8_filter_0 X0 X1) \Leftrightarrow \\ & ((r1_tarski (k1_relat_1 X2) (u1_struct_0 X0)) \wedge (\forall X3. (m1_subset_1 \\ & X3 (u1_struct_0 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 \\ & X0)) \Rightarrow ((k1_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X3 X4 \in X2) \Leftrightarrow \\ & (k7_filter_0 X0 X3 X4 \in X1)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. k2_tarski X0 X1 = k2_tarski X1 X0 \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1. (((\neg v1_xboole_0 X1) \wedge ((v19_lattices X1 X0) \wedge \\ & ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v3_filter_0 \\ & X0) \wedge (l3_lattices X0))) \Rightarrow (r8_relat_2 (k8_filter_0 X0 X1) (u1_struct_0 \\ & X0)))))) \end{aligned}$$