

t38_filter_2 (TMLksDUNC- Sqpt8Th7BvWWNvLv1Abhj4HPw3)

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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_filter_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v18_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v21_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. r1_tarski X0 X0 \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ & (l3_lattices X0))) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))))) \Rightarrow ((\neg v1_xboole_0 (k7_filter_2 X0 X1)) \wedge ((\\ & v18_lattices (k7_filter_2 X0 X1) X0) \wedge ((v21_lattices (k7_filter_2 \\ & X0 X1) X0) \wedge (m1_subset_1 (k7_filter_2 X0 X1) (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 X2) \wedge ((v18_lattices \\ & X2 X0) \wedge ((v21_lattices X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow ((X2 = k7_filter_2 X0 X1) \Leftrightarrow ((r1_tarski X1 X2) \wedge (\forall X3. \\ & ((\neg v1_xboole_0 X3) \wedge ((v18_lattices X3 X0) \wedge ((v21_lattices X3 X0) \wedge \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow ((r1_tarski \\ & X1 X3) \Rightarrow (r1_tarski X2 X3)))))) \end{aligned} \quad (4)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X3.((\neg v1_xboole_0 \\ & X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (((r1_tarski \\ & X2 X3) \Rightarrow (r1_tarski (k7_filter_2 X0 X2) (k7_filter_2 X0 X3))) \wedge (r1_tarski \\ & (k7_filter_2 X0 (k7_filter_2 X0 X1)) (k7_filter_2 X0 X1)))))) \end{aligned}$$