

t41_filter_2 (TMXy- omvcgb9KfaPRT6gxjqJJFjw8BvTWWqK)

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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 $v14_lattices : \iota \Rightarrow o$ be given. Let $k6_lattices : \iota \Rightarrow \iota$ be given. Let $r1_filter.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_filter.2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_filter.2 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_filter.2 : \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset.1 X1 (k1_zfmisc.1 X2))) \Rightarrow (m1_subset.1 X0 X2) \quad (1)$$

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.

$$\begin{aligned} \forall X0. ((\neg v2_struct.0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (\forall X1. (m1_subset.1 X1 (u1_struct.0 X0))) \Rightarrow (\forall X2. \\ ((\neg v1_xboole.0 X2) \wedge (m1_subset.1 X2 (k1_zfmisc.1 (u1_struct.0 X0)))) \Rightarrow ((X1 \in X2) \Rightarrow (r1_tarski (k6_filter.2 X0 X1) (k7_filter.2 X0 X2)))) \quad (3) \end{aligned}$$

Assume the following.

$$\forall X0. ((\neg v2_struct.0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow ((v14_lattices X0) \Rightarrow (r1_filter.2 (u1_struct.0 X0) (k5_filter.2 X0) (k6_filter.2 X0 (k6_lattices X0)))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((\neg v1_xboole.0 X0) \wedge ((m1_subset.1 X1 (k1_zfmisc.1 X0)) \wedge (m1_subset.1 X2 (k1_zfmisc.1 X0)))) \Rightarrow ((r1_filter.2 X0 X1 X2) \Leftrightarrow (X1 = X2)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ & (l3_lattices X0))) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))))) \Rightarrow ((\neg v1_xboole_0 (k7_filter_2 X0 X1)) \wedge ((\\ & v18_lattices (k7_filter_2 X0 X1) X0) \wedge ((v21_lattices (k7_filter_2 \\ & X0 X1) X0) \wedge (m1_subset_1 (k7_filter_2 X0 X1) (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ & (l3_lattices X0))) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow ((\neg v1_xboole_0 \\ & (k6_filter_2 X0 X1)) \wedge ((v18_lattices (k6_filter_2 X0 X1) X0) \wedge (\\ & v21_lattices (k6_filter_2 X0 X1) X0) \wedge (m1_subset_1 (k6_filter_2 \\ & X0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow ((\neg v1_xboole_0 (k5_filter_2 X0)) \wedge ((v18_lattices (k5_filter_2 \\ & X0) X0) \wedge ((v21_lattices (k5_filter_2 X0) X0) \wedge (m1_subset_1 (k5_filter_2 \\ & X0) (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (k5_filter_2 X0 = u1_struct_0 X0) \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. (X0 = X1) \Leftrightarrow ((r1_tarski X0 X1) \wedge (r1_tarski X1 X0)) \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow (((v14_lattices X0) \wedge (k6_lattices X0 \in X1)) \Rightarrow \\ & ((r1_filter_2 (u1_struct_0 X0) (k7_filter_2 X0 X1) (k5_filter_2 \\ & X0)) \wedge (k7_filter_2 X0 X1 = u1_struct_0 X0)))) \end{aligned}$$