

t43_roughs_1

(TMa8mDR9zAcjBk2e3idWNXwkQ1cZLh2UjoX)

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Let $v2_struct.0 : \iota \Rightarrow o$ be given. Let $v1_orders.3 : \iota \Rightarrow o$ be given. Let $v2_roughs.1 : \iota \Rightarrow o$ be given. Let $l1_orders.2 : \iota \Rightarrow o$ 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 $v4_roughs.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xboole.0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole.0 : \iota \Rightarrow o$ be given. Let $k6_eqrel.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $v3_roughs.1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_roughs.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_zfmisc.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_relset.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct.0 : \iota \Rightarrow o$ be given. Let $u1_orders.2 : \iota \Rightarrow \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (\neg(\neg r1_xboole.0 X0 X1) \wedge (\forall X2. \neg(X2 \in X0) \wedge (X2 \in X1))) \wedge (\neg(\exists X2. (X2 \in X0) \wedge (X2 \in X1)) \wedge (r1_xboole.0 X0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset.1 X0 X1) \Rightarrow ((v1_xboole.0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (X1 \in X0) \Rightarrow (k6_eqrel.1 X0 X0 (k6_partfun1 X0) X1 = k1_tarski X1) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2_struct.0 X0) \wedge ((v3_roughs.1 X0) \wedge (l1_orders.2 X0))) \Rightarrow (\forall X1. (m1_subset.1 X1 (k1_zfmisc.1 (u1_struct.0 X0))) \Rightarrow (r1_tarski X1 (k4_roughs.1 X0 X1))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset.1 X2 (k1_zfmisc.1 (k2_zfmisc.1 X0 X1))) \wedge (m1_subset.1 X3 (k1_zfmisc.1 (k2_zfmisc.1 X0 X1)))) \Rightarrow ((r2_relset.1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_roughs_1 X0)\wedge(l1_orders_2 X0)))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))))\Rightarrow(\neg v4_roughs_1 (k4_roughs_1 X0 X1) X0) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u1_struct_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0)\Rightarrow(m1_subset_1 (u1_orders_2 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))) \quad (8)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0)\Rightarrow(l1_struct_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(v1_partfun1 (k6_partfun1 X0) X0)\wedge(m1_subset_1 (k6_partfun1 X0) (k1_zfmisc_1 (k2_zfmisc_1 X0 X0))) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_orders_2 X0))\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))\Rightarrow(k4_roughs_1 X0 X1 = ReplSep (toset (\lambda X2 : \iota.m1_subset_1 X2 (u1_struct_0 X0)) (\lambda X2 : \iota.\neg r1_xboole_0 (k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 X0) (u1_orders_2 X0) X2) X1) (\lambda X2 : \iota.X2))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski X0 X1)\Leftrightarrow(\forall X2.(X2 \in X0)\Rightarrow(X2 \in X1)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1_tarski X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(X2 = X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0)\Rightarrow((v1_orders_3 X0)\Leftrightarrow(r2_relset_1 (u1_struct_0 X0) (u1_struct_0 X0) (u1_orders_2 X0) (k6_partfun1 (u1_struct_0 X0)))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1)\Leftrightarrow((r1_tarski X0 X1)\wedge(r1_tarski X1 X0)) \quad (15)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0)\Rightarrow((v2_roughs_1 X0)\Rightarrow(v3_roughs_1 X0)) \quad (16)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_orders_3 X0) \wedge ((v2_roughs_1 \\ X0) \wedge (l1_orders_2 X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (\neg v4_roughs_1 X1 X0)) \end{aligned}$$