

t33_roughs_1
(TMURVSScd9nMqHpzVErwdCB1r5RXpZXroYQ)

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Let $v2_struct_0 : \iota \Rightarrow o$ 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 $k3_roughs_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_relat_2 : \iota \Rightarrow o$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_roughs_1 : \iota \Rightarrow o$ be given. Let $u1_orders_2 : \iota \Rightarrow \iota$ be given. Let $v1_relat_2 : \iota \Rightarrow o$ 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.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v3_relat_2 X2) \wedge ((v8_relat_2 \\ & X2) \wedge ((v1_partfun1 X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0)))))) \Rightarrow (\forall X3. (X3 \in X0) \Rightarrow ((X1 \in k6_eqrel_1 X0 X0 X2 X3) \Leftrightarrow \\ & (k6_eqrel_1 X0 X0 X2 X3 = k6_eqrel_1 X0 X0 X2 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_roughs_1 X0) \wedge (l1_orders_2 X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (r1_tarski (k3_roughs_1 X0 X1) X1)) \quad (4)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_roughs_1 X0) \wedge (l1_orders_2 X0))) \Rightarrow (v8_relat_2 (u1_orders_2 X0)) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v3_roughs_1 X0) \wedge (l1_orders_2 X0))) \Rightarrow ((v1_relat_2 (u1_orders_2 X0) \wedge ((v3_relat_2 (u1_orders_2 X0) \wedge (v1_partfun1 (u1_orders_2 X0) (u1_struct_0 X0)))))) \quad (6)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow (m1_subset_1 (u1_orders_2 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k3_roughs_1 X0 X1) (k1_zfmisc_1 (u1_struct_0 X0))) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (k3_roughs_1 X0 X1 = ReplSep (toset (\lambda X2 : \iota.m1_subset_1 X2 (u1_struct_0 X0))) (\lambda X2 : \iota.r1_tarski (k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 X0) (u1_orders_2 X0) X2) X1) (\lambda X2 : \iota.X2)))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1) \Leftrightarrow ((r1_tarski X0 X1) \wedge (r1_tarski X1 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow ((v2_roughs_1 X0) \Rightarrow (v3_roughs_1 X0)) \quad (12)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_roughs_1 X0) \wedge (l1_orders_2 X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (k3_roughs_1 X0 (k3_roughs_1 X0 X1) = k3_roughs_1 X0 X1))$$