

t31_circrm1 (TM-
Rkc9RNs1WEdNcEx3nhzEGXw8W19zZBdBf)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $r3_pua2mss1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $l5_struct_0 : \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_msualg_1 : \iota \Rightarrow \iota$ be given. Let $u1_msualg_1 : \iota \Rightarrow \iota$ 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.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v11_struct_0 X0) \wedge (l5_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u4_struct_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0. (l1_msualg_1 X0) \Rightarrow (l5_struct_0 X0) \quad (5)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. (X1 = k10_xtuple_0 X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (\exists X3. (X3 \in k9_xtuple_0 X0) \wedge (X2 = k1_funct_1 X0 X3)))) \quad (6)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_msualg_1 X0) \Rightarrow (\forall X1.(l1_msualg_1 X1) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3.((v1_relat_1 \\
& X3) \wedge (v1_funct_1 X3)) \Rightarrow ((r3_pua2mss1 X0 X1 X2 X3) \Leftrightarrow ((k9_xtuple_0 \\
& X2 = u1_struct_0 X0) \wedge ((k9_xtuple_0 X3 = u4_struct_0 X0) \wedge ((r1_tarski \\
& (k10_xtuple_0 X2) (u1_struct_0 X1)) \wedge ((r1_tarski (k10_xtuple_0 \\
& X3) (u4_struct_0 X1)) \wedge ((k3_relat_1 (u2_msualg_1 X0) X2 = k3_relat_1 \\
& X3 (u2_msualg_1 X1)) \wedge (\forall X4.\forall X5.((v1_relat_1 X5) \wedge \\
& (v1_funct_1 X5)) \Rightarrow (((X4 \in u4_struct_0 X0) \wedge (X5 = k1_funct_1 (u1_msualg_1 \\
& X0) X4)) \Rightarrow (k3_relat_1 X5 X2 = k1_funct_1 (u1_msualg_1 X1) (k1_funct_1 \\
& X3 X4))))))))))))) \\
& \tag{7}
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((\neg v11_struct_0 X1) \wedge (\\
& l1_msualg_1 X1))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge (v1_funct_1 \\
& X2)) \Rightarrow (\forall X3.((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \Rightarrow ((r3_pua2mss1 \\
& X0 X1 X2 X3) \Rightarrow (\forall X4.(m1_subset_1 X4 (u4_struct_0 X0)) \Rightarrow (m1_subset_1 \\
& (k1_funct_1 X3 X4) (u4_struct_0 X1)))))))))
\end{aligned}$$