

t18_equation
(TMHet1mtfme94s6S2Av2uvajJKfX4P6y3fp)

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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 $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_msualg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $g3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u4_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m3_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k6_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l2_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l5_struct_0 : \iota \Rightarrow o$ be given. Let $r8_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_msualg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_msualg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1_xboole_0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ & \quad X0))) \Rightarrow (\forall X1. (l3_msualg_1 X1 X0) \Rightarrow (\forall X2. (l3_msualg_1 \\ & \quad X2 X0) \Rightarrow ((g3_msualg_1 X0 (u3_msualg_1 X0 X1) (u4_msualg_1 X0 X1) = \\ & \quad g3_msualg_1 X0 (u3_msualg_1 X0 X2) (u4_msualg_1 X0 X2)) \Rightarrow (m1_msualg_2 \\ & \quad X1 X0 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1)\Rightarrow((v1_xboole_0 X1)\vee (X0 \in X1)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge(l1_msualg_1 \\ X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u4_struct_0 X0))\Rightarrow(\forall X2. \\ (l3_msualg_1 X2 X0)\Rightarrow(\forall X3.(m3_pboole X3 (u1_struct_0 X0) \\ (u3_msualg_1 X0 X2))\Rightarrow(\forall X4.(m3_pboole X4 (u1_struct_0 X0) \\ (u3_msualg_1 X0 X2))\Rightarrow((r2_pboole (u1_struct_0 X0) X3 X4)\Rightarrow(r1_tarski \\ (k1_funct_1 (k3_relat_1 (u1_msualg_1 X0) (k6_finseq_2 (u1_struct_0 \\ X0) X3)) X1) (k1_funct_1 (k3_relat_1 (u1_msualg_1 X0) (k6_finseq_2 \\ (u1_struct_0 X0) X4)) X1))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l1_struct_0 X0)\wedge(l2_msualg_1 X1 X0))\Rightarrow \\ ((v1_relat_1 (u3_msualg_1 X0 X1))\wedge((v4_relat_1 (u3_msualg_1 \\ X0 X1) (u1_struct_0 X0))\wedge((v1_funct_1 (u3_msualg_1 X0 X1))\wedge(v1_partfun1 \\ (u3_msualg_1 X0 X1) (u1_struct_0 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge \\ (l1_msualg_1 X0)))\wedge(l3_msualg_1 X1 X0))\Rightarrow(\forall X2.(m1_msualg_2 \\ X2 X0 X1)\Rightarrow(l3_msualg_1 X2 X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l5_struct_0 X0)\Rightarrow(l1_struct_0 X0) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge(l1_msualg_1 X0))\Rightarrow(\forall X1. \\ (l3_msualg_1 X1 X0)\Rightarrow(l2_msualg_1 X1 X0)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(l1_msualg_1 X0)\Rightarrow(l5_struct_0 X0) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge(l1_msualg_1 \\ X0)))\Rightarrow(\forall X1.(l3_msualg_1 X1 X0)\Rightarrow(\forall X2.(l3_msualg_1 \\ X2 X0)\Rightarrow((m1_msualg_2 X2 X0 X1)\Leftrightarrow((m3_pboole (u3_msualg_1 X0 X2) \\ (u1_struct_0 X0) (u3_msualg_1 X0 X1))\wedge(\forall X3.(m3_pboole \\ X3 (u1_struct_0 X0) (u3_msualg_1 X0 X1))\Rightarrow((r8_pboole (u1_struct_0 \\ X0) X3 (u3_msualg_1 X0 X2))\Rightarrow((v3_msualg_2 X3 X0 X1)\wedge(r8_pboole \\ (u4_struct_0 X0) (u4_msualg_1 X0 X2) (k4_msualg_2 X0 X1 X3)))))))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& \quad X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (\forall X2. \\
& (l3_msualg_1 X2 X0) \Rightarrow (k3_msualg_1 X0 X1 X2 = k1_funct_1 (k3_relat_1 \\
& \quad (u1_msualg_1 X0) (k6_finseq_2 (u1_struct_0 X0) (u3_msualg_1 X0 \\
& \quad \quad X2))) X1)))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge (\\
& \quad (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \Rightarrow (\forall X2.((v1_relat_1 \\
& X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \Rightarrow \\
& \quad ((m3_pboole X2 X0 X1) \Leftrightarrow (r2_pboole X0 X2 X1)))
\end{aligned} \tag{14}$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \tag{15}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& \quad X0))) \Rightarrow (\forall X1.(l3_msualg_1 X1 X0) \Rightarrow (\forall X2.(m1_msualg_2 \\
& X2 X0 X1) \Rightarrow (\forall X3.(m1_subset_1 X3 (u4_struct_0 X0)) \Rightarrow (\forall X4. \\
& (X4 \in k3_msualg_1 X0 X3 X2) \Rightarrow (X4 \in k3_msualg_1 X0 X3 X1))))))
\end{aligned}$$