

t4_equation
(TMFsNcDeWq5K1p9xxYcx3riZTiPAT8PGosX)

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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 $r1_pzfmisc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funcop_1 : \iota \Rightarrow o$ be given. Let $r6_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_funct_6 : \iota \Rightarrow \iota$ be given. Let $r2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_funct_6 : \iota \Rightarrow \iota$ be given. Let $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((r1_tarski \\ & (k10_xtuple_0 X1) X0) \Rightarrow ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k9_xtuple_0 \\ & X1) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k9_xtuple_0 \\ & X1) X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 \\ & X2 X1) \wedge ((v1_funct_1 X2) \wedge ((v1_partfun1 X2 X1) \wedge (v1_funcop_1 X2)))))) \Rightarrow \\ & (\forall X3. ((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \Rightarrow (((X0 \in X1) \wedge (X3 = \\ & k1_funct_1 X2 X0)) \Rightarrow (k1_funct_1 (k2_funct_6 X2) X0 = k9_xtuple_0 \\ & X3))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 \\ & X2 X1) \wedge ((v1_funct_1 X2) \wedge ((v1_partfun1 X2 X1) \wedge (v1_funcop_1 X2)))))) \Rightarrow \\ & (\forall X3. ((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \Rightarrow (((X0 \in X1) \wedge (X3 = \\ & k1_funct_1 X2 X0)) \Rightarrow (k1_funct_1 (k3_funct_6 X2) X0 = k10_xtuple_0 \\ & X3))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1_relat_1 X1)\wedge((v4_relat_1 \\ & X1 X0)\wedge((v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\wedge((v1_relat_1 \\ & X2)\wedge((v4_relat_1 X2 X0)\wedge((v1_funct_1 X2)\wedge(v1_partfun1 X2 X0))))))\Rightarrow \\ & ((r6_pboole X0 X1 X2)\Leftrightarrow(X1 = X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_funcop_1 \\ & X0)))\Rightarrow((v1_relat_1 (k1_funct_1 X0 X1))\wedge(v1_funct_1 (k1_funct_1 \\ & X0 X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(\\ & (v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge(v1_funcop_1 X1))))))\Rightarrow(\\ & (v1_relat_1 (k3_funct_6 X1))\wedge((v4_relat_1 (k3_funct_6 X1) X0)\wedge \\ & ((v1_funct_1 (k3_funct_6 X1))\wedge(v1_partfun1 (k3_funct_6 X1) X0)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(\\ & (v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge(v1_funcop_1 X1))))))\Rightarrow(\\ & (v1_relat_1 (k2_funct_6 X1))\wedge((v4_relat_1 (k2_funct_6 X1) X0)\wedge \\ & ((v1_funct_1 (k2_funct_6 X1))\wedge(v1_partfun1 (k2_funct_6 X1) X0)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow((v1_relat_1 (\\ & k3_funct_6 X0))\wedge(v1_funct_1 (k3_funct_6 X0))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow((v1_relat_1 (\\ & k2_funct_6 X0))\wedge(v1_funct_1 (k2_funct_6 X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(\\ & (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\Rightarrow(\forall X2.((v1_relat_1 \\ & X2)\wedge((v4_relat_1 X2 X0)\wedge((v1_funct_1 X2)\wedge(v1_partfun1 X2 X0))))\Rightarrow \\ & ((r2_pboole X0 X1 X2)\Leftrightarrow(\forall X3.(X3 \in X0)\Rightarrow(r1_tarSKI (k1_funct_1 \\ & X1 X3) (k1_funct_1 X2 X3)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\
& (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1_relat_1 \\
& X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \Rightarrow \\
& (\forall X3. ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 X0) \wedge ((v1_funct_1 \\
& X3) \wedge (v1_partfun1 X3 X0)))) \Rightarrow ((m2_pboole X3 X0 X1 X2) \Leftrightarrow (\forall X4. \\
& (X4 \in X0) \Rightarrow ((v1_funct_1 (k1_funct_1 X3 X4)) \wedge ((v1_funct_2 (k1_funct_1 \\
& X3 X4) (k1_funct_1 X1 X4) (k1_funct_1 X2 X4)) \wedge (m1_subset_1 (k1_funct_1 \\
& X3 X4) (k1_zfmisc_1 (k2_zfmisc_1 (k1_funct_1 X1 X4) (k1_funct_1 \\
& X2 X4))))))))))
\end{aligned} \tag{11}$$

Theorem 1

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\
& (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1_relat_1 \\
& X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \Rightarrow \\
& ((r1_pzfmisc1 X0 X1 X2) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge ((v4_relat_1 \\
& X3 X0) \wedge ((v1_funct_1 X3) \wedge (v1_partfun1 X3 X0) \wedge (v1_funcop_1 X3)))) \Rightarrow \\
& (((r6_pboole X0 (k2_funct_6 X3) X1) \wedge (r2_pboole X0 (k3_funct_6 \\
& X3) X2)) \Rightarrow (m2_pboole X3 X0 X1 X2))))
\end{aligned}$$