

t39_instalg1
(TMNHF_n3Pj1gJnyLzB9rSp19xYevP3gQaxgZ)

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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 $m3_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_msafree : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow ((X0 \in X1) \Rightarrow (k1_funct_1 (k5_relat_1 X2 X1) X0 = k1_funct_1 X2 X0)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k2_partfun1 X0 X1 X2 X3 = k5_relat_1 X2 X3) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))))) \Rightarrow (\forall X3. (m2_pboole X3 X0 X1 X2) \Rightarrow ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 X0) \wedge ((v1_funct_1 X3) \wedge (v1_partfun1 X3 X0)))))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge (((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \wedge ((m3_pboole X3 X0 X1) \wedge (m2_pboole X4 X0 X1 X2)))) \Rightarrow (m2_pboole (k1_msafree X0 X1 X2 X3 X4) X0 X3 X2) \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\
& (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0)))\Rightarrow(\forall X2.((v1_relat_1 \\
& X2)\wedge((v4_relat_1 X2 X0)\wedge((v1_funct_1 X2)\wedge(v1_partfun1 X2 X0))))\Rightarrow \\
& (\forall X3.(m3_pboole X3 X0 X1)\Rightarrow(\forall X4.(m2_pboole X4 X0 X1 \\
& X2)\Rightarrow(\forall X5.(m2_pboole X5 X0 X3 X2)\Rightarrow((X5 = k1_msafree X0 X1 X2 \\
& X3 X4)\Leftrightarrow(\forall X6.(X6 \in X0)\Rightarrow(\forall X7.((v1_funct_1 X7)\wedge((v1_funct_2 \\
& X7 (k1_funct_1 X1 X6) (k1_funct_1 X2 X6))\wedge(m1_subset_1 X7 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k1_funct_1 X1 X6) (k1_funct_1 X2 X6))))))\Rightarrow((X7 = \\
& k1_funct_1 X4 X6)\Rightarrow(k1_funct_1 X5 X6 = k2_partfun1 (k1_funct_1 X1 \\
& X6) (k1_funct_1 X2 X6) X7 (k1_funct_1 X3 X6))))))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\
& (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0)))\Rightarrow(\forall X2.((v1_relat_1 \\
& X2)\wedge((v4_relat_1 X2 X0)\wedge((v1_funct_1 X2)\wedge(v1_partfun1 X2 X0))))\Rightarrow \\
& (\forall X3.((v1_relat_1 X3)\wedge((v4_relat_1 X3 X0)\wedge((v1_funct_1 \\
& X3)\wedge(v1_partfun1 X3 X0))))\Rightarrow((m2_pboole X3 X0 X1 X2)\Leftrightarrow(\forall X4. \\
& (X4 \in X0)\Rightarrow((v1_funct_1 (k1_funct_1 X3 X4))\wedge((v1_funct_2 (k1_funct_1 \\
& X3 X4) (k1_funct_1 X1 X4) (k1_funct_1 X2 X4))\wedge(m1_subset_1 (k1_funct_1 \\
& X3 X4) (k1_zfmisc_1 (k2_zfmisc_1 (k1_funct_1 X1 X4) (k1_funct_1 \\
& X2 X4))))))))))
\end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\
& (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0)))\Rightarrow(\forall X2.((v1_relat_1 \\
& X2)\wedge((v4_relat_1 X2 X0)\wedge((v1_funct_1 X2)\wedge(v1_partfun1 X2 X0))))\Rightarrow \\
& (\forall X3.(m3_pboole X3 X0 X1)\Rightarrow(\forall X4.(m2_pboole X4 X0 X1 \\
& X2)\Rightarrow(\forall X5.(X5 \in X0)\Rightarrow(\forall X6.((v1_relat_1 X6)\wedge(v1_funct_1 \\
& X6))\Rightarrow(\forall X7.((v1_relat_1 X7)\wedge(v1_funct_1 X7))\Rightarrow(((X6 = k1_funct_1 \\
& X4 X5)\wedge(X7 = k1_funct_1 (k1_msafree X0 X1 X2 X3 X4) X5))\Rightarrow(\forall X8. \\
& (X8 \in k1_funct_1 X3 X5)\Rightarrow(k1_funct_1 X7 X8 = k1_funct_1 X6 X8))))))))))
\end{aligned}$$