

t31_seq_1
(TMS3C4N3jdPD8Sr7bESK CerVzY8aoakzwbG)

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Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k1_numbers : \iota$ 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 $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k47_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $k45_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k32_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k30_valued_1 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_valued_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))) \Rightarrow \\
& (r2_funct_2 k5_numbers k1_numbers (k3_valued_1 k5_numbers k1_numbers \\
& k1_numbers (k3_valued_1 k5_numbers k1_numbers k1_numbers X0 X1) \\
& X2) (k3_valued_1 k5_numbers k1_numbers k1_numbers X0 (k3_valued_1 \\
& k5_numbers k1_numbers k1_numbers X1 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 X1)))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\
& X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\
& X3) \Rightarrow (r2_funct_2 X0 X1 X3 X2))
\end{aligned} \tag{2}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered \\ & X1)\wedge((v3_membered X2)\wedge(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X2))))))\Rightarrow(k47_valued_1 X0 X1 X2 X3 X4 = k45_valued_1 \\ & X3 X4) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered \\ & X1)\wedge((v3_membered X2)\wedge(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X2))))))\Rightarrow(k3_valued_1 X0 X1 X2 X3 X4 = k1_valued_1 \\ & X3 X4) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v3_membered X1)\wedge((v1_funct_1 \\ & X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow(k32_valued_1 \\ & X0 X1 X2 = k30_valued_1 X2) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_valued_0 X0)))\Rightarrow \\ & (k30_valued_1 (k30_valued_1 X0) = X0) \end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v1_xboole_0 \\ & X1)\wedge(v3_membered X1))\wedge(((\neg v1_xboole_0 X2)\wedge(v3_membered X2))\wedge \\ & (((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 X1)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge((v1_funct_2 X4 X0 X2)\wedge \\ & (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X2))))))))\Rightarrow((v1_funct_1 \\ & (k1_valued_1 X3 X4))\wedge(v1_partfun1 (k1_valued_1 X3 X4) X0)) \end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v1_xboole_0 \\ & X1)\wedge(v3_membered X1))\wedge(((\neg v1_xboole_0 X2)\wedge(v3_membered X2))\wedge \\ & (((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 X1)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge((v1_funct_2 X4 X0 X2)\wedge \\ & (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X2))))))))\Rightarrow((v1_funct_1 \\ & (k45_valued_1 X3 X4))\wedge(v1_partfun1 (k45_valued_1 X3 X4) X0)) \end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X1)\wedge(v3_membered \\ X1))\wedge((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 \\ (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((v1_funct_1 (k30_valued_1 \\ X2))\wedge(v1_partfun1 (k30_valued_1 X2) X0)) \end{aligned} \quad (10)$$

Assume the following.

$$v3_membered k1_numbers \quad (11)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(\\ (v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge(v1_valued_0 X1))))\Rightarrow(\\ (v1_relat_1 (k30_valued_1 X1))\wedge((v1_funct_1 (k30_valued_1 X1))\wedge \\ (v1_partfun1 (k30_valued_1 X1) X0)\wedge(v1_valued_0 (k30_valued_1 \\ X1)))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered \\ X1)\wedge((v3_membered X2)\wedge(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X2))))))\Rightarrow((v1_funct_1 (k47_valued_1 X0 X1 X2 \\ X3 X4))\wedge(m1_subset_1 (k47_valued_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 k1_numbers)))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered \\ X1)\wedge((v3_membered X2)\wedge(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X2))))))\Rightarrow((v1_funct_1 (k3_valued_1 X0 X1 X2 X3 \\ X4))\wedge(m1_subset_1 (k3_valued_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 k1_numbers)))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v3_membered X1)\wedge((v1_funct_1 \\ X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((v1_funct_1 \\ (k32_valued_1 X0 X1 X2))\wedge(m1_subset_1 (k32_valued_1 X0 X1 X2) (\\ k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow \\ & (\forall X1.((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_valued_0 \\ & X1)))) \Rightarrow (k45_valued_1 X0 X1 = k1_valued_1 X0 (k30_valued_1 X1))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 \\ & X0))) \wedge ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_valued_0 X1)))) \Rightarrow \\ & (k1_valued_1 X0 X1 = k1_valued_1 X1 X0) \end{aligned} \quad (18)$$

Assume the following.

$$\forall X0. (v3_membered X0) \Rightarrow (v1_membered X0) \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v1_funct_2 X2 X0 X1) \Rightarrow (\\ & v1_partfun1 X2 X0))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow ((v1_partfun1 X2 X0) \Rightarrow (v1_funct_2 X2 X0 X1)) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v1_membered X1) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_valued_0 X2)) \end{aligned} \quad (24)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & (\forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & (r2_funct_2 k5_numbers k1_numbers (k3_valued_1 k5_numbers k1_numbers \\ & k1_numbers X0 (k47_valued_1 k5_numbers k1_numbers k1_numbers \\ & X1 X2)) (k47_valued_1 k5_numbers k1_numbers k1_numbers (k3_valued_1 \\ & k5_numbers k1_numbers k1_numbers X0 X1) X2))) \end{aligned}$$