

t40_comseq_1
(TMPPyrB1a9DQkJ7q4KJka9nAkZhL1sZByGP)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_numbers : \iota$ be given. 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k36_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k25_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_complex1 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_valued_0 : \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k24_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k35_valued_1 : \iota \Rightarrow \iota$ be given. Let $k5_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $v1_membered : \iota \Rightarrow o$ 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 $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow \\ (\forall X1.(v1_xcmplx_0 X1) \Rightarrow (\forall X2.k1_funct_1 (k24_valued_1 \\ X0 X1) X2 = k3_xcmplx_0 X1 (k1_funct_1 X0 X2))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\ X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow \\ (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\ X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((\forall X4.(m1_subset_1 \\ X4 X0) \Rightarrow (k1_funct_1 X2 X4 = k1_funct_1 X3 X4)) \Rightarrow (r2_relset_1 X0 X1 \\ X2 X3))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow \\ (\forall X1.k1_funct_1 (k35_valued_1 X0) X1 = k5_xcmplx_0 (k1_funct_1 \\ X0 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0)\wedge(v1_xcmplx_0 X1))\Rightarrow(k3_xcmplx_0 (k5_xcmplx_0 X0) (k5_xcmplx_0 X1) = k5_xcmplx_0 (k3_xcmplx_0 X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_membered X1)\wedge((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow(k36_valued_1 X0 X1 X2 = k35_valued_1 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_membered X1)\wedge(((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))\wedge(v1_xcmplx_0 X3))\Rightarrow(k25_valued_1 X0 X1 X2 X3 = k24_valued_1 X2 X3) \quad (6)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k2_numbers)\Rightarrow(k12_complex1 X0 = k5_xcmplx_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X1)\wedge(v1_membered X1))\wedge((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((v1_funct_1 (k35_valued_1 X2))\wedge(v1_partfun1 (k35_valued_1 X2) X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_valued_0 X0)))\Rightarrow(v1_xcmplx_0 (k1_funct_1 X0 X1)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1_xboole_0 X1)\wedge(v1_membered X1))\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))\wedge(v1_xcmplx_0 X3))\Rightarrow((v1_funct_1 (k24_valued_1 X2 X3))\wedge(v1_partfun1 (k24_valued_1 X2 X3) X0)) \quad (10)$$

Assume the following.

$$\neg v1_xboole_0 k2_numbers \quad (11)$$

Assume the following.

$$v1_membered k2_numbers \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\ (v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge(v1_valued_0 X1))))\Rightarrow(\\ (v1_relat_1 (k35_valued_1 X1))\wedge((v1_funct_1 (k35_valued_1 X1))\wedge \\ ((v1_partfun1 (k35_valued_1 X1) X0)\wedge(v1_valued_0 (k35_valued_1 \\ X1)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow(v1_xcmplx_0 (k5_xcmplx_0 X0)) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v1_membered X1)\wedge((v1_funct_1 \\ X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))\Rightarrow((v1_funct_1 \\ (k36_valued_1 X0 X1 X2))\wedge(m1_subset_1 (k36_valued_1 X0 X1 X2) (\\ k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((v1_membered X1)\wedge \\ (((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 X1))))\wedge(v1_xcmplx_0 X3))\Rightarrow((v1_funct_1 (k25_valued_1 X0 X1 \\ X2 X3))\wedge(m1_subset_1 (k25_valued_1 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 k2_numbers)))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k2_numbers)\Rightarrow(v1_xcmplx_0 X0) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1)))\Rightarrow((v1_partfun1 X2 X0)\Rightarrow(v1_funct_2 X2 X0 X1)) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.(v1_membered X1)\Rightarrow(\forall X2.(m1_subset_1 \\ X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_valued_0 X2)) \quad (21)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k2_numbers) \Rightarrow (\forall X1.((v1_funct_1 \\ & X1) \wedge ((v1_funct_2 X1 k5_numbers k2_numbers) \wedge (m1_subset_1 X1 (\\ & k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k2_numbers)))))) \Rightarrow (r2_relset_1 \\ & k5_numbers k2_numbers (k36_valued_1 k5_numbers k2_numbers (k25_valued_1 \\ & k5_numbers k2_numbers X1 X0)) (k25_valued_1 k5_numbers k2_numbers \\ & (k36_valued_1 k5_numbers k2_numbers X1) (k12_complex1 X0)))) \end{aligned}$$