

t7_comseq_2

(TMbi6o1G8yee5He8HYSV6ZuEMb1NLPdmfSa)

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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 $k2_numbers : \iota$ 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 $k2_comseq.2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k51_valued.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat.1 : \iota \Rightarrow o$ be given. Let $v1_valued.0 : \iota \Rightarrow o$ be given. Let $k1_funct.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_valued.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xcmplx.0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xcmplx.0 : \iota \Rightarrow o$ be given. Let $k15_complex1 : \iota \Rightarrow \iota$ be given. Let $k5_xcmplx.0 : \iota \Rightarrow \iota$ be given. Let $k12_complex1 : \iota \Rightarrow \iota$ be given. Let $k9_complex1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k35_valued.1 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Let $k50_valued.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole.0 : \iota \Rightarrow o$ be given. Let $k3_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k36_valued.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_comseq.2 : \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat.1 X0) \wedge ((v1_funct.1 X0) \wedge (v1_valued.0 X0))) \Rightarrow \\ & (\forall X1.((v1_relat.1 X1) \wedge ((v1_funct.1 X1) \wedge (v1_valued.0 \\ & X1))) \Rightarrow (\forall X2.k1_funct.1 (k18_valued.1 X0 X1) X2 = k3_xcmplx.0 \\ & (k1_funct.1 X0 X2) (k1_funct.1 X1 X2))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(v1_xcmplx.0 X0) \Rightarrow (k15_complex1 (k5_xcmplx.0 X0) = k12_complex1 (k15_complex1 X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xcmplx.0 X0) \Rightarrow (\forall X1.(v1_xcmplx.0 X1) \Rightarrow (k15_complex1 \\ & (k3_xcmplx.0 X0 X1) = k9_complex1 (k15_complex1 X0) (k15_complex1 \\ & X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat.1 X0) \wedge ((v1_funct.1 X0) \wedge (v1_valued.0 X0))) \Rightarrow \\ & (\forall X1.k1_funct.1 (k35_valued.1 X0) X1 = k5_xcmplx.0 (k1_funct.1 \\ & X0 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X2)\wedge \\ & ((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1))))\wedge((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 X1)\wedge(m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((r2_funct_2 X0 X1 X2 \\ & X3)\Leftrightarrow(X2 = X3)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k2_numbers)\wedge(m1_subset_1 X1 k2_numbers))\Rightarrow(k9_complex1 X0 X1 = k3_xcmplx_0 X0 X1) \quad (6)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v1_membered \\ & X1)\wedge((v1_membered X2)\wedge(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X2))))))\Rightarrow(k51_valued_1 X0 X1 X2 X3 X4 = k50_valued_1 \\ & X3 X4) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))\wedge(m1_subset_1 X3 X0)))\Rightarrow(k3_funct_2 X0 \\ & X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_membered X1)\wedge((v1_funct_1 \\ & X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow(k36_valued_1 \\ & X0 X1 X2 = k35_valued_1 X2) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((v1_funct_1 X1)\wedge(\\ & (v1_funct_2 X1 X0 k2_numbers)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k2_numbers))))))\Rightarrow(k2_comseq_2 X0 X1 = k1_comseq_2 X1) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k2_numbers)\Rightarrow(k12_complex1 X0 = k5_xcmplx_0 X0) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((v1_funct_1 X1)\wedge((v1_funct_2 X1 X0 k2_numbers)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers))))))\Rightarrow(k2_comseq_2 X0 (k2_comseq_2 X0 X1) = X1) \quad (13)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X1)\wedge(v1_membered X1))\wedge((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((v1_funct_1 (k35_valued_1 X2))\wedge(v1_partfun1 (k35_valued_1 X2) X0)) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_valued_0 X0)))\Rightarrow(v1_xcmplx_0 (k1_funct_1 X0 X1)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v1_xboole_0 X1)\wedge(v1_membered X1))\wedge(((\neg v1_xboole_0 X2)\wedge(v1_membered X2))\wedge(((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 X1)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\wedge((v1_funct_1 X4)\wedge((v1_funct_2 X4 X0 X2)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X2))))))))\Rightarrow((v1_funct_1 (k18_valued_1 X3 X4))\wedge(v1_partfun1 (k18_valued_1 X3 X4) X0)) \quad (17)$$

Assume the following.

$$\neg v1_xboole_0 k2_numbers \quad (18)$$

Assume the following.

$$v1_membered k2_numbers \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v1_membered X1)\wedge((v1_membered X2)\wedge(((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\wedge((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X2))))))\Rightarrow((v1_funct_1 (k51_valued_1 X0 X1 X2 X3 X4))\wedge(m1_subset_1 (k51_valued_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))))) \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))))\wedge(m1_subset_1 X3 X0))\Rightarrow(m1_subset_1 (\\ & k3_funct_2 X0 X1 X2 X3) X1) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_membered X1)\wedge((v1_funct_1 \\ & X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))\Rightarrow((v1_funct_1 \\ & (k36_valued_1 X0 X1 X2))\wedge(m1_subset_1 (k36_valued_1 X0 X1 X2) (\\ & k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((v1_funct_1 X1)\wedge(\\ & (v1_funct_2 X1 X0 k2_numbers)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k2_numbers))))))\Rightarrow((v1_funct_1 (k2_comseq_2 X0 X1))\wedge((v1_funct_2 \\ & (k2_comseq_2 X0 X1) X0 k2_numbers)\wedge(m1_subset_1 (k2_comseq_2 \\ & X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 k2_numbers)))))) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((v1_funct_1 X1)\wedge(\\ & (v1_funct_2 X1 X0 k2_numbers)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k2_numbers)))))\Rightarrow(\forall X2.((v1_funct_1 X2)\wedge((v1_funct_2 \\ & X2 X0 k2_numbers)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\ & k2_numbers)))))\Rightarrow((X2 = k2_comseq_2 X0 X1)\Leftrightarrow((k1_relset_1 X0 X2 = \\ & X0)\wedge(\forall X3.(m1_subset_1 X3 X0)\Rightarrow(k3_funct_2 X0 k2_numbers \\ & X2 X3 = k15_complex1 (k3_funct_2 X0 k2_numbers X1 X3)))))) \end{aligned} \quad (24)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_valued_0 X0)))\Rightarrow \\ & (\forall X1.((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_valued_0 \\ & X1))))\Rightarrow(k50_valued_1 X0 X1 = k18_valued_1 X0 (k35_valued_1 X1)) \end{aligned} \quad (25)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_valued_0 \\ & X0)))\wedge((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_valued_0 X1))))\Rightarrow \quad (26) \\ & (k18_valued_1 X0 X1 = k18_valued_1 X1 X0) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \end{aligned} \quad (27)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\Rightarrow((v1_partfun1 X2 X0)\Rightarrow(v1_funct_2 X2 X0 X1)) \end{aligned} \quad (28)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(v1_membered X1)\Rightarrow(\forall X2.(m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_valued_0 X2)) \end{aligned} \quad (29)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_funct_1 X0)\wedge((v1_funct_2 X0 k5_numbers k2_numbers)\wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k2_numbers))))\Rightarrow \\ & (\forall X1.((v1_funct_1 X1)\wedge((v1_funct_2 X1 k5_numbers k2_numbers)\wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k2_numbers))))\Rightarrow \\ & (r2_funct_2 k5_numbers k2_numbers (k2_comseq_2 k5_numbers (k51_valued_1 \\ & k5_numbers k2_numbers k2_numbers X0 X1)) (k51_valued_1 k5_numbers \\ & k2_numbers k2_numbers (k2_comseq_2 k5_numbers X0) (k2_comseq_2 \\ & k5_numbers X1)))) \end{aligned}$$