

t66_comseq_3

(TMLz2JZN2poxCVoF7sdwwTMpU9UGh7ge2K9)

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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 $k2_numbers : \iota$ be given. Let $v1_series_1 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k17_complex1 : \iota \Rightarrow \iota$ be given. Let $k8_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_comseq_3 : \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k54_valued_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Let $k55_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ 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.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (r1_xxreal_0 k6_numbers (k17_complex1 X0)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & (((\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow (r1_xxreal_0 \\ & k6_numbers (k3_funct_2 k5_numbers k1_numbers X0 X2))) \wedge (v1_series_1 \\ & X1)) \Rightarrow ((\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow (\exists X3. \\ & (m2_subset_1 X3 k1_numbers k5_numbers) \wedge ((r1_xxreal_0 X2 X3) \wedge \\ & (\neg r1_xxreal_0 (k3_funct_2 k5_numbers k1_numbers X0 X3) (k3_funct_2 \\ & k5_numbers k1_numbers X1 X3)))))) \vee (v1_series_1 X0)))) \quad (2) \end{aligned}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow (\forall X1.k1_funct_1 (k54_valued_1 X0) X1 = k17_complex1 (k1_funct_1 X0 X1)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers X0)))))) \wedge (v7_ordinal1 X2)) \Rightarrow (k8_nat_1 X0 X1 X2 = k1_funct_1 X1 X2) \quad (5)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_membered X1) \wedge ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))) \Rightarrow (k55_valued_1 X0 X1 X2 = k54_valued_1 X2) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 X1 X2 X3 = k1_funct_1 X2 X3) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X1) \wedge (v1_membered X1)) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))) \Rightarrow ((v1_funct_1 (k54_valued_1 X2)) \wedge (v1_partfun1 (k54_valued_1 X2) X0)) \quad (9)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow (v1_xcmplx_0 (k1_funct_1 X0 X1)) \quad (11)$$

Assume the following.

$$\neg v1_xboole_0 \ k2_numbers \quad (12)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (13)$$

Assume the following.

$$v1_membered \ k2_numbers \quad (14)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v1_membered \ X1)\wedge((v1_funct_1 \\ X2)\wedge(m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1))))))\Rightarrow((v1_funct_1 \\ (k55_valued_1 \ X0 \ X1 \ X2))\wedge(m1_subset_1 \ (k55_valued_1 \ X0 \ X1 \ X2) \ (\\ k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ k1_numbers)))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 \ X0)\wedge((v1_funct_2 \ X0 \ k5_numbers \ k2_numbers)\wedge \\ (m1_subset_1 \ X0 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ k2_numbers))))))\Rightarrow \\ ((v2_comseq_3 \ X0)\Leftrightarrow(v1_series_1 \ (k55_valued_1 \ k5_numbers \ k2_numbers \\ X0))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.(m1_subset_1 \ X0 \ k4_ordinal1)\Rightarrow(v7_ordinal1 \ X0) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1)))\Rightarrow((v4_relat_1 \ X2 \ X0)\wedge(v5_relat_1 \ X2 \ X1)) \quad (19)$$

Assume the following.

$$\forall X0.((v1_relat_1 \ X0)\wedge(v5_relat_1 \ X0 \ k2_numbers))\Rightarrow((v1_relat_1 \ X0)\wedge(v1_valued_0 \ X0)) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1)))\Rightarrow(v1_relat_1 \ X2) \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(m1_subset_1 \ X2 \ (k1_zfmisc_1 \\ (k2_zfmisc_1 \ X0 \ X1)))\Rightarrow((v1_partfun1 \ X2 \ X0)\Rightarrow(v1_funct_2 \ X2 \ X0 \ X1)) \end{aligned} \quad (22)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k2_numbers) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k2_numbers)))))) \Rightarrow \\ & ((v1_series_1 X0) \Rightarrow ((\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\ & (\exists X3.(m2_subset_1 X3 k1_numbers k5_numbers) \wedge ((r1_xxreal_0 \\ & X2 X3) \wedge (\neg r1_xxreal_0 (k17_complex1 (k8_nat_1 k2_numbers X1 X3)) \\ & (k8_nat_1 k1_numbers X0 X3)))))) \vee (v2_comseq_3 X1)))) \end{aligned}$$