

t21_seqfunc (TMSYN- PCFD6jVSvS2zMp4cioustkFX48VWLR)

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Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k4_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r2_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k18_complex1 : \iota \Rightarrow \iota$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_comseq_2 : \iota \Rightarrow o$ be given. Let $k10_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_seq_2 : \iota \Rightarrow \iota$ be given. Let $k1_seq_2 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\ & (\forall X2. (r2_seqfunc X0 X1 X2) \Leftrightarrow ((r1_seqfunc X0 k1_numbers X1 \\ & X2) \wedge (\forall X3. (m1_subset_1 X3 X0) \Rightarrow ((X3 \in X2) \Rightarrow (v2_comseq_2 (\\ & k10_seqfunc X0 X1 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))) \Rightarrow ((r2_relset_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & (k2_seq_2 X0 = k1_seq_2 X0) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_valued_0 X0))) \Rightarrow (k1_seq_1 X0 X1 = k1_funct_1 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_valued_0 X0))) \Rightarrow (v1_xreal_0 (k1_funct_1 X0 X1)) \quad (6)$$

Assume the following.

$$v3_membered k1_numbers \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge ((v1_funct_1 \\ & X1) \wedge ((v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 \\ & X0 k1_numbers))))))) \Rightarrow ((v1_funct_1 (k11_seqfunc X0 X1 X2)) \wedge (m1_subset_1 \\ & (k11_seqfunc X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge ((v1_funct_1 \\ & X1) \wedge ((v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 \\ & X0 k1_numbers)))))) \wedge (m1_subset_1 X2 X0))) \Rightarrow ((v1_funct_1 (k10_seqfunc \\ & X0 X1 X2)) \wedge ((v1_funct_2 (k10_seqfunc X0 X1 X2) k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 (k10_seqfunc X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers k1_numbers)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & ((v2_comseq_2 X0) \Rightarrow (\forall X1. (v1_xreal_0 X1) \Rightarrow ((X1 = k1_seq_2 \\ & X0) \Leftrightarrow (\forall X2. (v1_xreal_0 X2) \Rightarrow (\neg(\neg r1_xxreal_0 X2 k6_numbers) \wedge \\ & (\forall X3. (m2_subset_1 X3 k1_numbers k5_numbers) \Rightarrow (\exists X4. \\ & (m2_subset_1 X4 k1_numbers k5_numbers) \wedge ((r1_xxreal_0 X3 X4) \wedge \\ & (r1_xxreal_0 X2 (k18_complex1 (k9_real_1 (k1_seq_1 X0 X4) X1)))))))))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Leftrightarrow (X0 \in k1_numbers) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\ & (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\ & (\forall X2.(r2_seqfunc X0 X1 X2) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\ & (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \Rightarrow \\ & ((X3 = k11_seqfunc X0 X1 X2) \Leftrightarrow ((k1_relset_1 X0 X3 = X2) \wedge (\forall X4. \\ & (m1_subset_1 X4 X0) \Rightarrow ((X4 \in k1_relset_1 X0 X3) \Rightarrow (k1_seq_1 X3 X4 = k2_seq_2 \\ & (k10_seqfunc X0 X1 X4)))))))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\ & (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 X0) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\ & ((v1_funct_2 X3 k5_numbers k1_numbers) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((X3 = k10_seqfunc X0 \\ & X1 X2) \Leftrightarrow (\forall X4.(m2_subset_1 X4 k1_numbers k5_numbers) \Rightarrow (k1_seq_1 \\ & X3 X4 = k1_seq_1 (k1_seqfunc X0 k1_numbers X1 X4) X2)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.(v3_membered X1) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v3_valued_0 X2)) \quad (16)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\ & (v1_funct_2 X1 k5_numbers (k4_partfun1 X0 k1_numbers)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (k4_partfun1 X0 k1_numbers)))))) \Rightarrow \\ & (\forall X2.\forall X3.((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k1_numbers)))) \Rightarrow ((r2_seqfunc X0 X1 X2) \Rightarrow ((r2_relset_1 \\ & X0 k1_numbers X3 (k11_seqfunc X0 X1 X2)) \Leftrightarrow ((k1_relset_1 X0 X3 = X2) \wedge \\ & (\forall X4.(m1_subset_1 X4 X0) \Rightarrow ((X4 \in X2) \Rightarrow (\forall X5.(m1_subset_1 \\ & X5 k1_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 X5 k6_numbers) \wedge (\forall X6.(\\ & m2_subset_1 X6 k1_numbers k5_numbers) \Rightarrow (\exists X7.(m2_subset_1 \\ & X7 k1_numbers k5_numbers) \wedge ((r1_xxreal_0 X6 X7) \wedge (r1_xxreal_0 \\ & X5 (k18_complex1 (k9_real_1 (k1_seq_1 (k1_seqfunc X0 k1_numbers \\ & X1 X7) X4) (k1_seq_1 X3 X4)))))))))))))) \end{aligned}$$