

t15_asympt_0
(TMXeaTk7sWSfaqbvk4zoBrXhKg373jN14FZ)

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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 $v4_asympt_0 : \iota \Rightarrow o$ 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 $v2_comseq_2 : \iota \Rightarrow o$ be given. Let $k52_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_seq_2 : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k6_asympt_0 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k2_real_1 : \iota \Rightarrow \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $k50_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v2_asympt_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_valued_0 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_asympt_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(\neg r1_xxreal_0 X0 X1) \wedge ((\neg v3_xxreal_0 X1) \wedge (\neg v2_xxreal_0 X0)))) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(r1_xxreal_0 X0 X1) \wedge ((\neg v2_xxreal_0 X1) \wedge (v2_xxreal_0 X0)))) \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\
& ((v4_asympt_0 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers k1_numbers)))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\
& (v1_funct_2 X1 k5_numbers k1_numbers) \wedge ((v4_asympt_0 X1) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\
& v2_comseq_2 (k52_valued_1 k5_numbers k1_numbers k1_numbers X0 \\
& X1) \Rightarrow ((k2_seq_2 (k52_valued_1 k5_numbers k1_numbers k1_numbers \\
& X0 X1) = k6_numbers) \vee ((v2_comseq_2 (k52_valued_1 k5_numbers k1_numbers \\
& k1_numbers X1 X0) \wedge (k2_seq_2 (k52_valued_1 k5_numbers k1_numbers \\
& k1_numbers X1 X0) = k2_real_1 (k2_seq_2 (k52_valued_1 k5_numbers \\
& k1_numbers k1_numbers X0 X1))))))
\end{aligned} \tag{4}$$

Assume the following.

$$k6_numbers = k1_xboole_0 \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((v3_membered \\
& X1) \wedge ((v3_membered X2) \wedge ((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 X1)))) \wedge ((v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 X2)))))) \Rightarrow (k52_valued_1 X0 X1 X2 X3 X4 = k50_valued_1 \\
& X3 X4)
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k1_numbers) \Rightarrow (k2_real_1 X0 = k5_xcmplx_0 X0) \tag{7}$$

Assume the following.

$$\begin{aligned}
& \exists X0. (v1_xboole_0 X0) \wedge ((v1_xcmplx_0 X0) \wedge ((v1_xxreal_0 \\
& X0) \wedge (v1_xreal_0 X0)))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\
& ((v4_asympt_0 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers k1_numbers)))))) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\
& (v1_funct_2 X1 k5_numbers k1_numbers) \wedge ((v4_asympt_0 X1) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\
& v2_comseq_2 (k52_valued_1 k5_numbers k1_numbers k1_numbers X0 \\
& X1) \Rightarrow ((r1_xxreal_0 (k2_seq_2 (k52_valued_1 k5_numbers k1_numbers \\
& k1_numbers X0 X1) k6_numbers) \vee (X0 \in k6_asympt_0 X1))))
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & ((v2_asympt_0 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers k1_numbers)))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 k5_numbers k1_numbers) \wedge ((v2_asympt_0 X1) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\ & (X0 \in k6_asympt_0 X1) \wedge (X1 \in k6_asympt_0 X0)) \Leftrightarrow (k6_asympt_0 X0 = k6_asympt_0 \\ & X1)) \end{aligned} \tag{10}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (k2_real_1 (k2_real_1 X0) = X0) \tag{11}$$

Assume the following.

$$v3_membered k1_numbers \tag{12}$$

Assume the following.

$$\forall X0.((\neg v2_xxreal_0 X0) \wedge (v1_xreal_0 X0)) \Rightarrow ((v1_xcmplx_0 (k5_xcmplx_0 X0)) \wedge (\neg v2_xxreal_0 (k5_xcmplx_0 X0))) \tag{13}$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \tag{14}$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \tag{15}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1_relat_1 X1) \wedge ((v4_relat_1 \\ & X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge (v1_valued_0 X1)))))) \wedge \\ & (((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge ((v1_partfun1 \\ & X2 X0) \wedge (v1_valued_0 X2)))))) \Rightarrow ((v1_relat_1 (k50_valued_1 X1 X2)) \wedge \\ & ((v1_funct_1 (k50_valued_1 X1 X2)) \wedge (v1_partfun1 (k50_valued_1 \\ & X1 X2) X0))) \end{aligned} \tag{16}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered \\ & X1) \wedge ((v3_membered X2) \wedge (((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))) \wedge ((v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X2)))))) \Rightarrow ((v1_funct_1 (k52_valued_1 X0 X1 X2 \\ & X3 X4)) \wedge (m1_subset_1 (k52_valued_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k1_numbers)))) \end{aligned} \tag{17}$$

Assume the following.

$$\forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow (m1_subset_1 (k2_seq_2 X0) k1_numbers) \quad (18)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xreal_0 X0) \wedge (v1_xreal_0 X1)) \Rightarrow (r1_xreal_0 X0 X1) \vee (r1_xreal_0 X1 X0) \quad (19)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v3_valued_0 X0)) \Rightarrow ((v1_relat_1 X0) \wedge (v1_valued_0 X0)) \quad (20)$$

Assume the following.

$$\forall X0. ((v1_xreal_0 X0) \wedge (v3_xreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_xreal_0 X0) \wedge (\neg v2_xreal_0 X0))) \quad (21)$$

Assume the following.

$$\forall X0. ((v1_xreal_0 X0) \wedge (v2_xreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_xreal_0 X0) \wedge (\neg v3_xreal_0 X0))) \quad (22)$$

Assume the following.

$$\forall X0. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v1_funct_2 X2 X0 X1) \Rightarrow (v1_partfun1 X2 X0))) \quad (23)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \quad (24)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers))) \Rightarrow (((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge (v4_asympt_0 X0))) \Rightarrow ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge ((v2_asympt_0 X0) \wedge (v5_asympt_0 X0)))))) \quad (25)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (26)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (27)$$

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.

$$\begin{aligned} & \forall X0. \forall X1. (v3_membered X1) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v3_valued_0 X2)) \end{aligned} \quad (29)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & ((v4_asympt_0 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers k1_numbers)))))) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 k5_numbers k1_numbers) \wedge ((v4_asympt_0 X1) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\ & v2_comseq_2 (k52_valued_1 k5_numbers k1_numbers X0 \\ & X1)) \Rightarrow ((r1_xxreal_0 (k2_seq_2 (k52_valued_1 k5_numbers k1_numbers \\ & k1_numbers X0 X1)) k6_numbers) \vee (k6_asympt_0 X0 = k6_asympt_0 X1)))) \end{aligned}$$