

t31_asympt_0

(TMQ41YW3F2aaXmu3GSuCgSqGqrFABxnv5my)

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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 $v3_asympt_0 : \iota \Rightarrow o$ 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 $k8_asympt_0 : \iota \Rightarrow \iota$ 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 $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_asympt_0 : \iota \Rightarrow o$ be given. Let $k6_asympt_0 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k7_asympt_0 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_asympt_0 : \iota \Rightarrow o$ be given. Let $v5_asympt_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\
 & ((v3_asympt_0 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & k5_numbers k1_numbers)))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\
 & (v1_funct_2 X1 k5_numbers k1_numbers) \wedge ((v2_asympt_0 X1) \wedge (m1_subset_1 \\
 & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\
 & X1 \in k6_asympt_0 X0) \Leftrightarrow (\exists X2.(m1_subset_1 X2 k1_numbers) \wedge \\
 & ((\neg r1_xreal_0 X2 k6_numbers) \wedge (\forall X3.(m2_subset_1 X3 k1_numbers \\
 & k5_numbers) \Rightarrow (r1_xreal_0 (k1_seq_1 X1 X3) (k8_real_1 X2 (k1_seq_1 \\
 & X0 X3))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & ((v2_asympt_0 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers k1_numbers)))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\ & (v1_funct_2 X1 k5_numbers k1_numbers) \wedge ((v2_asympt_0 X1) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\ & X0 \in k8_asympt_0 X1) \Rightarrow (X1 \in k8_asympt_0 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & ((v3_asympt_0 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers k1_numbers)))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\ & (v1_funct_2 X1 k5_numbers k1_numbers) \wedge ((v3_asympt_0 X1) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\ & X1 \in k7_asympt_0 X0) \Leftrightarrow (\exists X2.(m1_subset_1 X2 k1_numbers) \wedge \\ & ((\neg r1_xreal_0 X2 k6_numbers) \wedge (\forall X3.(m2_subset_1 X3 k1_numbers \\ & k5_numbers) \Rightarrow (r1_xreal_0 (k8_real_1 X2 (k1_seq_1 X0 X3)) (k1_seq_1 \\ & X1 X3)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & ((v2_asympt_0 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers k1_numbers)))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\ & (v1_funct_2 X1 k5_numbers k1_numbers) \wedge ((v2_asympt_0 X1) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\ & X0 \in k7_asympt_0 X1) \Leftrightarrow (X1 \in k6_asympt_0 X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers \\ & k1_numbers) \wedge ((v2_asympt_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((X0 \in k7_asympt_0 \\ & X1) \Rightarrow ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & ((v2_asympt_0 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers k1_numbers)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (8)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (9)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (10)$$

Assume the following.

$$(\neg v1_xboole_0 \ k4_ordinal1) \wedge (v3_ordinal1 \ k4_ordinal1) \quad (11)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (12)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (X2 = k3_xboole_0 \ X0 \ X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (X3 \in X1))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1_funct_1 \ X0) \wedge ((v1_funct_2 \ X0 \ k5_numbers \ k1_numbers) \wedge \\ ((v2_asympt_0 \ X0) \wedge (m1_subset_1 \ X0 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ k5_numbers \ k1_numbers)))))) \Rightarrow (k8_asympt_0 \ X0 = k3_xboole_0 \ (k6_asympt_0 \\ X0) \ (k7_asympt_0 \ X0)) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0. (m1_subset_1 \ X0 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \\ k1_numbers))) \Rightarrow (((v1_funct_1 \ X0) \wedge ((v1_funct_2 \ X0 \ k5_numbers \\ k1_numbers) \wedge (v4_asympt_0 \ X0))) \Rightarrow ((v1_funct_1 \ X0) \wedge ((v1_funct_2 \\ X0 \ k5_numbers \ k1_numbers) \wedge ((v2_asympt_0 \ X0) \wedge (v5_asympt_0 \ X0)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0. (m1_subset_1 \ X0 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \\ k1_numbers))) \Rightarrow (((v1_funct_1 \ X0) \wedge ((v1_funct_2 \ X0 \ k5_numbers \\ k1_numbers) \wedge (v3_asympt_0 \ X0))) \Rightarrow ((v1_funct_1 \ X0) \wedge ((v1_funct_2 \\ X0 \ k5_numbers \ k1_numbers) \wedge (v4_asympt_0 \ X0)))) \end{aligned} \quad (17)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & ((v3_asympt_0 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k5_numbers k1_numbers)))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ (v1_funct_2 X1 k5_numbers k1_numbers) \wedge ((v3_asympt_0 X1) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\ X1 \in k8_asympt_0 X0) \Leftrightarrow (\exists X2.(m1_subset_1 X2 k1_numbers) \wedge \\ (\exists X3.(m1_subset_1 X3 k1_numbers) \wedge ((\neg r1_xreal_0 X2 k6_numbers) \wedge \\ ((\neg r1_xreal_0 X3 k6_numbers) \wedge (\forall X4.(m2_subset_1 X4 k1_numbers \\ k5_numbers) \Rightarrow ((r1_xreal_0 (k8_real_1 X3 (k1_seq_1 X0 X4)) (k1_seq_1 \\ X1 X4)) \wedge (r1_xreal_0 (k1_seq_1 X1 X4) (k8_real_1 X2 (k1_seq_1 X0 \\ X4))))))))))))) \end{aligned}$$