

t31_limfunc3

(TMHC9oqrDkwZ5fdoNHLH4938rmbWA7a6YUJ)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_limfunc3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k26_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_limfunc3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r4_limfunc2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_limfunc2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_limfunc2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_limfunc2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow ((r4_limfunc2 \\ & X2 X0) \Rightarrow ((r1_limfunc2 (k26_valued_1 k1_numbers k1_numbers X2 X1) \\ & X0) \wedge (k2_limfunc2 (k26_valued_1 k1_numbers k1_numbers X2 X1) X0 = \\ & k8_real_1 X1 (k2_limfunc2 X2 X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow ((r1_limfunc2 \\ & X2 X0) \Rightarrow ((r1_limfunc2 (k26_valued_1 k1_numbers k1_numbers X2 X1) \\ & X0) \wedge (k1_limfunc2 (k26_valued_1 k1_numbers k1_numbers X2 X1) X0 = \\ & k8_real_1 X1 (k1_limfunc2 X2 X0)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.((v1_funct_1 \\ & X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\ & (((r1_limfunc2 X1 X0) \wedge ((r4_limfunc2 X1 X0) \wedge (k1_limfunc2 X1 X0 = \\ & k2_limfunc2 X1 X0))) \Rightarrow ((r1_limfunc3 X1 X0) \wedge ((k1_limfunc3 X1 X0 = \\ & k1_limfunc2 X1 X0) \wedge (k1_limfunc3 X1 X0 = k2_limfunc2 X1 X0)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.((v1_funct_1 \\ & X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\ & ((r1_limfunc3 X1 X0) \Rightarrow ((r1_limfunc2 X1 X0) \wedge ((r4_limfunc2 X1 X0) \wedge \\ & ((k1_limfunc2 X1 X0 = k2_limfunc2 X1 X0) \wedge ((k1_limfunc3 X1 X0 = k1_limfunc2 \\ & X1 X0) \wedge (k1_limfunc3 X1 X0 = k2_limfunc2 X1 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$v3_membered k1_numbers \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v3_membered X1) \wedge \\ & (((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))) \wedge (v1_xreal_0 X3))) \Rightarrow ((v1_funct_1 (k26_valued_1 X0 X1 \\ & X2 X3)) \wedge (m1_subset_1 (k26_valued_1 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 k1_numbers)))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xreal_0 X1)) \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow ((r1_limfunc3 \\ & X2 X0) \Rightarrow ((r1_limfunc3 (k26_valued_1 k1_numbers k1_numbers X2 X1) \\ & X0) \wedge (k1_limfunc3 (k26_valued_1 k1_numbers k1_numbers X2 X1) X0 = \\ & k8_real_1 X1 (k1_limfunc3 X2 X0)))))) \end{aligned}$$