

t37_rinfsup2
(TMUL9DMGHnHEAvpzhdwSyr6Fr2Fqs4WTPRq)

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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 $k7_numbers : \iota$ 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 $v7_valued_0 : \iota \Rightarrow o$ be given. Let $v10_mesfunc5 : \iota \Rightarrow o$ be given. Let $k2_mesfunc5 : \iota \Rightarrow \iota$ be given. Let $k1_rinfsup2 : \iota \Rightarrow \iota$ be given. Let $v5_valued_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_valued_0 : \iota \Rightarrow o$ be given. Let $v8_valued_0 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k8_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_supinf_2 : \iota \Rightarrow \iota$ be given. Let $k17_supinf_2 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v2_valued_0 : \iota \Rightarrow o$ 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.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& (((v5_valued_0 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow \\
& (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow (\neg(\neg r1_xreal_0 \\
& X1 X2) \wedge (r1_xreal_0 (k12_supinf_2 X0 X1) (k12_supinf_2 X0 X2)))))) \wedge \\
& (((\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2. \\
& (m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow (\neg(\neg r1_xreal_0 X1 X2) \wedge \\
& (r1_xreal_0 (k12_supinf_2 X0 X1) (k12_supinf_2 X0 X2)))))) \Rightarrow (v5_valued_0 \\
& X0)) \wedge (((v6_valued_0 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 k1_numbers \\
& k5_numbers) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\
& (\neg(\neg r1_xreal_0 X1 X2) \wedge (r1_xreal_0 (k12_supinf_2 X0 X2) (k12_supinf_2 \\
& X0 X1)))))) \wedge (((\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow \\
& (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow (\neg(\neg r1_xreal_0 \\
& X1 X2) \wedge (r1_xreal_0 (k12_supinf_2 X0 X2) (k12_supinf_2 X0 X1)))))) \Rightarrow \\
& (v6_valued_0 X0)) \wedge (((v7_valued_0 X0) \Rightarrow (\forall X1.(m2_subset_1 \\
& X1 k1_numbers k5_numbers) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers \\
& k5_numbers) \Rightarrow ((r1_xreal_0 X2 X1) \Rightarrow (r1_xreal_0 (k12_supinf_2 \\
& X0 X2) (k12_supinf_2 X0 X1)))))) \wedge (((\forall X1.(m2_subset_1 X1 \\
& k1_numbers k5_numbers) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers \\
& k5_numbers) \Rightarrow ((r1_xreal_0 X2 X1) \Rightarrow (r1_xreal_0 (k12_supinf_2 \\
& X0 X2) (k12_supinf_2 X0 X1)))))) \Rightarrow (v7_valued_0 X0)) \wedge (((v8_valued_0 \\
& X0) \Rightarrow (\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2. \\
& (m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow ((r1_xreal_0 X2 X1) \Rightarrow \\
& (r1_xreal_0 (k12_supinf_2 X0 X1) (k12_supinf_2 X0 X2)))))) \wedge (\\
& (\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2. \\
& (m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow ((r1_xreal_0 X2 X1) \Rightarrow \\
& (r1_xreal_0 (k12_supinf_2 X0 X1) (k12_supinf_2 X0 X2)))))) \Rightarrow (v8_valued_0 \\
& X0))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& (((\forall X1.(v7_ordinal1 X1) \Rightarrow (\forall X2.(v7_ordinal1 X2) \Rightarrow \\
& ((r1_xreal_0 X1 X2) \Rightarrow (r1_xreal_0 (k8_nat_1 k7_numbers X0 X1) \\
& (k8_nat_1 k7_numbers X0 X2)))))) \Rightarrow ((v10_mesfunc5 X0) \wedge (k2_mesfunc5 \\
& X0 = k8_supinf_2 (k17_supinf_2 X0))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\
& X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1))
\end{aligned} \tag{4}$$

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.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v2_valued_0 X0)))\Rightarrow(k12_supinf_2 X0 X1 = k1_funct_1 X0 X1) \quad (7)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (8)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (9)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0)\wedge((v1_funct_2 X0 k5_numbers k7_numbers)\wedge(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers))))))\Rightarrow(k1_rinfsup2 X0 = k8_supinf_2 (k17_supinf_2 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Leftrightarrow(X0 \in k4_ordinal1) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (12)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v5_relat_1 X0 k7_numbers))\Rightarrow((v1_relat_1 X0)\wedge(v2_valued_0 X0)) \quad (13)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(v1_xboole_0 X1)) \quad (14)$$

Assume the following.

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

Theorem 1

$$\forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow ((v7_valued_0 X0) \Rightarrow ((v10_mesfunc5 X0) \wedge (k2_mesfunc5 X0 = k1_rinf sup2 X0)))$$