

t8_rinfsup2 (TMSGrGbbN- rVTk5TR3kwQ2ZXZLYSLiBAxKwq)

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Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ 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 $k7_numbers : \iota$ 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 $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_rinfsup2 : \iota \Rightarrow \iota$ be given. Let $k4_rinfsup2 : \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Let $k1_xxreal_2 : \iota \Rightarrow \iota$ be given. Let $k2_xxreal_2 : \iota \Rightarrow \iota$ be given. Let $k8_supinf_2 : \iota \Rightarrow \iota$ be given. Let $k7_supinf_2 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v2_valued_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ 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.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v2_membered X1) \Rightarrow ((X0 \in X1) \Rightarrow (r1_xxreal_0 X0 (k1_xxreal_2 X1)))) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v2_membered X1) \Rightarrow ((X0 \in X1) \Rightarrow (r1_xxreal_0 (k2_xxreal_2 X1) X0))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (r1_xxreal_0 X0 X0) \quad (4)$$

Assume the following.

$$\forall X0.(v2_membered X0) \Rightarrow (k8_supinf_2 X0 = k1_xxreal_2 X0) \quad (5)$$

Assume the following.

$$\forall X0.(v2_membered\ X0)\Rightarrow(k7_supinf_2\ X0 = k2_xxreal_2\ X0) \quad (6)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (7)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1\ X0)\wedge((v1_funct_1\ X0)\wedge(v2_valued_0\ X0)))\Rightarrow(v1_xxreal_0\ (k1_funct_1\ X0\ X1)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0\ X0)\wedge((\neg v1_xboole_0\ X1)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ X0))))\Rightarrow(\forall X2.(m2_subset_1\ X2\ X0\ X1)\Rightarrow(m1_subset_1\ X2\ X0)) \quad (10)$$

Assume the following.

$$m1_subset_1\ k5_numbers\ (k1_zfmisc_1\ k1_numbers) \quad (11)$$

Assume the following.

$$\begin{aligned} &\forall X0.((v1_funct_1\ X0)\wedge((v1_funct_2\ X0\ k5_numbers\ k7_numbers)\wedge \\ &(m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k7_numbers))))\Rightarrow \\ &((v1_funct_1\ (k4_rinf sup2\ X0))\wedge((v1_funct_2\ (k4_rinf sup2\ X0) \\ &k5_numbers\ k7_numbers)\wedge(m1_subset_1\ (k4_rinf sup2\ X0)\ (k1_zfmisc_1 \\ &(k2_zfmisc_1\ k5_numbers\ k7_numbers)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} &\forall X0.((v1_funct_1\ X0)\wedge((v1_funct_2\ X0\ k5_numbers\ k7_numbers)\wedge \\ &(m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k7_numbers))))\Rightarrow \\ &((v1_funct_1\ (k3_rinf sup2\ X0))\wedge((v1_funct_2\ (k3_rinf sup2\ X0) \\ &k5_numbers\ k7_numbers)\wedge(m1_subset_1\ (k3_rinf sup2\ X0)\ (k1_zfmisc_1 \\ &(k2_zfmisc_1\ k5_numbers\ k7_numbers)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& ((X1 = k4_rinf_sup2 X0) \Leftrightarrow (\forall X2.(m2_subset_1 X2 k1_numbers \\
& k5_numbers) \Rightarrow (\exists X3.((\neg v1_xboole_0 X3) \wedge (m1_subset_1 X3 \\
& (k1_zfmisc_1 k7_numbers)))) \wedge ((X3 = ReplSep (toset (\lambda X4 : \iota. \\
& m2_subset_1 X4 k1_numbers k5_numbers)) (\lambda X4 : \iota. r1_xreal_0 \\
& X2 X4) (\lambda X4 : \iota. k12_supinf_2 X0 X4)) \wedge (k12_supinf_2 X1 X2 = k8_supinf_2 \\
& X3))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& ((X1 = k3_rinf_sup2 X0) \Leftrightarrow (\forall X2.(m2_subset_1 X2 k1_numbers \\
& k5_numbers) \Rightarrow (\exists X3.((\neg v1_xboole_0 X3) \wedge (m1_subset_1 X3 \\
& (k1_zfmisc_1 k7_numbers)))) \wedge ((X3 = ReplSep (toset (\lambda X4 : \iota. \\
& m2_subset_1 X4 k1_numbers k5_numbers)) (\lambda X4 : \iota. r1_xreal_0 \\
& X2 X4) (\lambda X4 : \iota. k12_supinf_2 X0 X4)) \wedge (k12_supinf_2 X1 X2 = k7_supinf_2 \\
& X3))))))
\end{aligned} \tag{15}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 (k1_zfmisc_1 k7_numbers)) \Rightarrow (v2_membered X0) \tag{16}$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xreal_0 X0) \tag{17}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \tag{18}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v5_relat_1 X0 k7_numbers)) \Rightarrow ((v1_relat_1 X0) \wedge (v2_valued_0 X0)) \tag{19}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \tag{20}$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (22)$$

Assume the following.

$$\forall X0.(v2_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xxreal_0 X1)) \quad (23)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k7_numbers) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow ((r1_xxreal_0 \\ & (k12_supinf_2 (k3_rinfsup2 X1) X0) (k12_supinf_2 X1 X0)) \wedge (r1_xxreal_0 \\ & (k12_supinf_2 X1 X0) (k12_supinf_2 (k4_rinfsup2 X1) X0))) \end{aligned}$$