

t11_rinfsup2

(TMZYaaUYZHj2DSL5fceu7CdoAcCrrgpBLuJ)

October 27, 2020

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 $v3_rinfsup2 : \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xxreal_0 : \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_xxreal_0 : \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17_supinf_2 : \iota \Rightarrow \iota$ be given. Let $v2_valued_0 : \iota \Rightarrow o$ be given. Let $k12_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Let $v3_xxreal_2 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $m2_xxreal_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_rinfsup2 : \iota \Rightarrow o$ be given. Let $v1_rinfsup2 : \iota \Rightarrow o$ be given. Let $v4_xxreal_2 : \iota \Rightarrow o$ be given. Let $m1_xxreal_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\neg(X0 \in k1_numbers) \wedge (r1_xxreal_0 k1_xxreal_0 X0)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X3) \wedge \\ & ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))) \Rightarrow ((X2 \in X0) \Rightarrow ((X1 = k1_xboole_0) \vee (k1_funct_1 X3 X2 \in k2_relset_1 \\ & X1 X3))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_relat_1 X2) \wedge (v1_funct_1 \\ & X2)) \Rightarrow (((k9_xtuple_0 X2 = X0) \wedge (\forall X3.(X3 \in X0) \Rightarrow (k1_funct_1 \\ & X2 X3 \in X1))) \Rightarrow ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\neg(\neg X0 \in k1_numbers) \wedge ((X0 \neq k1_xxreal_0) \wedge (X0 \neq k2_xxreal_0))) \quad (4)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\neg(X0 \in k1_numbers) \wedge (r1_xxreal_0 X0 k2_xxreal_0)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v5_relat_1 X1 X0)) \Rightarrow (k2_relset_1 X0 X1 = k10_xtuple_0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (7)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow (k17_supinf_2 X0 = k10_xtuple_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v2_valued_0 X0))) \Rightarrow (k12_supinf_2 X0 X1 = k1_funct_1 X0 X1) \quad (9)$$

Assume the following.

$$\neg v1_xboole_0 k7_numbers \quad (10)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v2_valued_0 X0)) \Rightarrow (v2_membered (k10_xtuple_0 X0)) \quad (11)$$

Assume the following.

$$v2_membered k7_numbers \quad (12)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v2_valued_0 X0))) \Rightarrow (m1_subset_1 (k12_supinf_2 X0 X1) k7_numbers) \quad (14)$$

Assume the following.

$$\forall X0.(v2_membered\ X0)\Rightarrow((v3_xxreal_2\ X0)\Leftrightarrow(\exists X1.(v1_xreal_0\ X1)\wedge(m2_xxreal_2\ X1\ X0))) \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1\ X0)\wedge((v1_funct_2\ X0\ k5_numbers\ k7_numbers)\wedge \\ (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k7_numbers))))\Rightarrow \\ ((v3_rinf sup2\ X0)\Leftrightarrow((v2_rinf sup2\ X0)\wedge(v1_rinf sup2\ X0))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1\ X0)\wedge((v1_funct_2\ X0\ k5_numbers\ k7_numbers)\wedge \\ (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k7_numbers))))\Rightarrow \\ ((v2_rinf sup2\ X0)\Leftrightarrow(v4_xxreal_2\ (k17_supinf_2\ X0))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1\ X0)\wedge((v1_funct_2\ X0\ k5_numbers\ k7_numbers)\wedge \\ (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k7_numbers))))\Rightarrow \\ ((v1_rinf sup2\ X0)\Leftrightarrow(v3_xxreal_2\ (k17_supinf_2\ X0))) \end{aligned} \quad (18)$$

Assume the following.

$$\forall X0.(v2_membered\ X0)\Rightarrow(\forall X1.(v1_xxreal_0\ X1)\Rightarrow((m2_xxreal_2\ X1\ X0)\Leftrightarrow(\forall X2.(v1_xxreal_0\ X2)\Rightarrow((X2 \in X0)\Rightarrow(r1_xxreal_0\ X1\ X2)))))) \quad (19)$$

Assume the following.

$$\forall X0.(v2_membered\ X0)\Rightarrow(\forall X1.(v1_xxreal_0\ X1)\Rightarrow((m1_xxreal_2\ X1\ X0)\Leftrightarrow(\forall X2.(v1_xxreal_0\ X2)\Rightarrow((X2 \in X0)\Rightarrow(r1_xxreal_0\ X2\ X1)))))) \quad (20)$$

Assume the following.

$$\forall X0.(v1_xreal_0\ X0)\Leftrightarrow(X0 \in k1_numbers) \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ (k2_zfmisc_1\ X0\ X1)))\Rightarrow(((X1 \neq k1_xboole_0)\Rightarrow((v1_funct_2\ X2\ X0 \\ X1)\Leftrightarrow(X0 = k1_relset_1\ X0\ X2)))\wedge((X1 = k1_xboole_0)\Rightarrow((v1_funct_2 \\ X2\ X0\ X1)\Leftrightarrow(X2 = k1_xboole_0)))) \end{aligned} \quad (22)$$

Assume the following.

$$\forall X0.(v2_membered\ X0)\Rightarrow((v4_xxreal_2\ X0)\Leftrightarrow(\exists X1.(v1_xreal_0\ X1)\wedge(m1_xxreal_2\ X1\ X0))) \quad (23)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xxreal_0 X0) \quad (24)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (26)$$

Assume the following.

$$\forall X0.\forall X1.(v2_membered X1)\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v2_valued_0 X2)) \quad (27)$$

Assume the following.

$$\forall X0.(v2_membered X0)\Rightarrow(\forall X1.(m1_subset_1 X1 X0)\Rightarrow(v1_xxreal_0 X1)) \quad (28)$$

Theorem 1

$$\begin{aligned} &\forall X0.((v1_funct_1 X0)\wedge((v1_funct_2 X0 k5_numbers k7_numbers)\wedge \\ &(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers))))))\Rightarrow \\ &((v3_rinf sup2 X0)\Rightarrow((v1_funct_1 X0)\wedge((v1_funct_2 X0 k5_numbers \\ &k1_numbers)\wedge(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\ &k1_numbers)))))) \end{aligned}$$