

t23_rinfsup2

(TMbpm2phvifY2oybVwXy4nbUMyvqExH5KF7)

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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 $k2_rinfsup2 : \iota \Rightarrow \iota$ be given. Let $k12_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_rinfsup2 : \iota \Rightarrow \iota$ 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 $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v4_card_3 : \iota \Rightarrow o$ be given. Let $k1_xxreal_0 : \iota$ 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.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X0 \in k9_xtuple_0 X1) \Rightarrow (k1_funct_1 X1 X0 \in k10_xtuple_0 X1)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \quad (5)$$

Assume the following.

$$\forall X0.(v2_membered X0)\Rightarrow(k8_supinf_2 X0 = k1_xxreal_2 X0) \quad (6)$$

Assume the following.

$$\forall X0.(v2_membered X0)\Rightarrow(k7_supinf_2 X0 = k2_xxreal_2 X0) \quad (7)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (9)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0)\wedge((v1_funct_2 X0 k5_numbers k7_numbers)\wedge(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers))))\Rightarrow(k17_supinf_2 X0 = k10_xtuple_0 X0) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v2_valued_0 X0)))\Rightarrow(k12_supinf_2 X0 X1 = k1_funct_1 X0 X1) \quad (11)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v2_valued_0 X0)))\Rightarrow(v1_xxreal_0 (k1_funct_1 X0 X1)) \quad (13)$$

Assume the following.

$$\neg v1_xboole_0 k7_numbers \quad (14)$$

Assume the following.

$$v2_membered k7_numbers \quad (15)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (16)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 \ X0) \wedge ((v1_funct_2 \ X0 \ k5_numbers \ k7_numbers) \wedge \\ (m1_subset_1 \ X0 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ k7_numbers)))))) \Rightarrow \\ ((\neg v1_xboole_0 \ (k17_supinf_2 \ X0)) \wedge ((v4_card_3 \ (k17_supinf_2 \\ X0)) \wedge (m1_subset_1 \ (k17_supinf_2 \ X0) \ (k1_zfmisc_1 \ k7_numbers)))))) \end{aligned} \quad (18)$$

Assume the following.

$$k1_xxreal_0 = k1_numbers \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 \ X0) \wedge ((v1_funct_2 \ X0 \ k5_numbers \ k7_numbers) \wedge \\ (m1_subset_1 \ X0 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ k7_numbers)))))) \Rightarrow \\ (k2_rinf_sup2 \ X0 = k7_supinf_2 \ (k17_supinf_2 \ X0)) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 \ X0) \wedge ((v1_funct_2 \ X0 \ k5_numbers \ k7_numbers) \wedge \\ (m1_subset_1 \ X0 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ k7_numbers)))))) \Rightarrow \\ (k1_rinf_sup2 \ X0 = k8_supinf_2 \ (k17_supinf_2 \ X0)) \end{aligned} \quad (21)$$

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.

$$\forall X0. (m1_subset_1 \ X0 \ (k1_zfmisc_1 \ k7_numbers)) \Rightarrow (v2_membered \ X0) \quad (23)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 \ X2 \ (k1_zfmisc_1 \\ (k2_zfmisc_1 \ X0 \ X1))) \Rightarrow ((v4_relat_1 \ X2 \ X0) \wedge (v5_relat_1 \ X2 \ X1)) \quad (24)$$

Assume the following.

$$\forall X0. (v1_xboole_0 \ X0) \Rightarrow (\forall X1. (m1_subset_1 \ X1 \ (k1_zfmisc_1 \\ X0)) \Rightarrow (v1_xboole_0 \ X1)) \quad (25)$$

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.

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

Theorem 1

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers)\Rightarrow(\forall X1. \\ & ((v1_funct_1 X1)\wedge((v1_funct_2 X1 k5_numbers k7_numbers)\wedge(m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers))))\Rightarrow((r1_xxreal_0 \\ & (k2_rinf_sup2 X1) (k12_supinf_2 X1 X0))\wedge(r1_xxreal_0 (k12_supinf_2 \\ & X1 X0) (k1_rinf_sup2 X1)))) \end{aligned}$$