

t39_supinf_2 (TMRk-
wiVL93VAZJY52Yy9e9HNHh8QMQUecZn)

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Let $v1_funct_1 : \iota \Rightarrow o$ 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 $k7_numbers : \iota$ be given. Let $v6_supinf_2 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_supinf_2 : \iota$ be given. Let $k12_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ 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 $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v2_valued_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Let $v5_supinf_2 : \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (r1_xxreal_0 X0 X0) \quad (2)$$

Assume the following.

$$k1_supinf_2 = k1_xboole_0 \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v2_valued_0 X0))) \Rightarrow (k12_supinf_2 X0 X1 = k1_funct_1 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k2_zfmisc_1 X0 X1) \quad (6)$$

Assume the following.

$$v2_membered\ k7_numbers \quad (7)$$

Assume the following.

$$m1_subset_1\ k1_supinf_2\ k7_numbers \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1\ X1)\wedge(v4_relat_1\ X1\ X0))\Rightarrow(m1_subset_1\ (k1_relset_1\ X0\ X1)\ (k1_zfmisc_1\ X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1\ X0)\wedge((v1_funct_1\ X0)\wedge(v2_valued_0\ X0)))\Rightarrow(m1_subset_1\ (k12_supinf_2\ X0\ X1)\ k7_numbers) \quad (10)$$

Assume the following.

$$\forall X0.(v5_supinf_2\ X0)\Leftrightarrow(\forall X1.(m1_subset_1\ X1\ k7_numbers)\Rightarrow((X1 \in X0)\Rightarrow(r1_xxreal_0\ k1_supinf_2\ X1))) \quad (11)$$

Assume the following.

$$\forall X0.((v1_relat_1\ X0)\wedge(v1_funct_1\ X0))\Rightarrow(\forall X1.(X1 = k10_xtuple_0\ X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(\exists X3.(X3 \in k9_xtuple_0\ X0)\wedge(X2 = k1_funct_1\ X0\ X3)))) \quad (12)$$

Assume the following.

$$\forall X0.((v1_relat_1\ X0)\wedge(v1_funct_1\ X0))\Rightarrow(\forall X1.\forall X2.((X1 \in k9_xtuple_0\ X0)\Rightarrow((X2 = k1_funct_1\ X0\ X1)\Leftrightarrow(k4_tarski\ X1\ X2 \in X0)))\wedge((\neg X1 \in k9_xtuple_0\ X0)\Rightarrow((X2 = k1_funct_1\ X0\ X1)\Leftrightarrow(X2 = k1_xboole_0)))) \quad (13)$$

Assume the following.

$$\forall X0.(v1_relat_1\ X0)\Rightarrow((v6_supinf_2\ X0)\Leftrightarrow(v5_supinf_2\ (k10_xtuple_0\ X0))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))\Rightarrow((v4_relat_1\ X2\ X0)\wedge(v5_relat_1\ X2\ X1)) \quad (15)$$

Assume the following.

$$\forall X0.(v1_relat_1\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\Rightarrow(v1_relat_1\ X1)) \quad (16)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v5_relat_1 X0 \ k7_numbers)) \Rightarrow ((v1_relat_1 X0) \wedge (v2_valued_0 X0)) \quad (17)$$

Assume the following.

$$\forall X0.(v2_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xreal_0 X1)) \quad (18)$$

Theorem 1

$$\forall X0.\forall X1.((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 \ k7_numbers)))) \Rightarrow ((v6_supinf_2 X1) \Leftrightarrow (\forall X2.(m1_subset_1 X2 X0) \Rightarrow (r1_xreal_0 \ k1_supinf_2 (k12_supinf_2 X1 X2))))$$