

t23_supinf_2 (TMbiYs- AByf5L7L1pwUSYpYp6hCFGpinxDMG)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k7_numbers : \iota$ 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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k14_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_supinf_2 : \iota \Rightarrow \iota$ be given. Let $k2_xxreal_3 : \iota \Rightarrow \iota$ be given. Let $k2_xxreal_0 : \iota$ be given. Let $k1_xxreal_0 : \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_supinf_2 : \iota \Rightarrow \iota$ be given. Let $k10_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_supinf_1 : \iota$ be given. Let $k1_supinf_1 : \iota$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Let $k7_supinf_2 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$k2_xxreal_3 \ k2_xxreal_0 = k1_xxreal_0 \quad (1)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 \ X0) \Rightarrow (\forall X1.(v1_xxreal_0 \ X1) \Rightarrow ((r1_xxreal_0 \ X0 \ X1) \Leftrightarrow (r1_xxreal_0 \ (k2_xxreal_3 \ X1) \ (k2_xxreal_3 \ X0)))) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 \ X0) \Rightarrow (\forall X1.((\neg v1_xboole_0 \ X1) \wedge \\ & (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ k7_numbers))) \Rightarrow (\forall X2.((v1_funct_1 \\ & X2) \wedge ((v1_funct_2 \ X2 \ X0 \ X1) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & X0 \ X1)))))) \Rightarrow ((k11_supinf_2 \ k7_numbers \ X0 \ (k6_supinf_2 \ X1) \ (k14_supinf_2 \\ & X0 \ X1 \ X2) = k2_supinf_2 \ (k10_supinf_2 \ k7_numbers \ X0 \ X1 \ X2)) \wedge (k10_supinf_2 \\ & k7_numbers \ X0 \ (k6_supinf_2 \ X1) \ (k14_supinf_2 \ X0 \ X1 \ X2) = k2_supinf_2 \\ & (k11_supinf_2 \ k7_numbers \ X0 \ X1 \ X2)))) \quad (3) \end{aligned}$$

Assume the following.

$$\forall X0.(m1_subset_1 \ X0 \ k7_numbers) \Rightarrow (k2_supinf_2 \ X0 = k2_xxreal_3 \ X0) \quad (4)$$

Assume the following.

$$k2_supinf_1 = k2_xxreal_0 \quad (5)$$

Assume the following.

$$k1_supinf_1 = k1_xxreal_0 \quad (6)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (k2_supinf_2 (k2_supinf_2 X0) = X0) \quad (7)$$

Assume the following.

$$v2_membered k7_numbers \quad (8)$$

Assume the following.

$$\forall X0.(v2_membered X0) \Rightarrow (m1_subset_1 (k7_supinf_2 X0) k7_numbers) \quad (9)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 (k1_zfmisc_1 k7_numbers)) \Rightarrow (m1_subset_1 (k6_supinf_2 X0) (k1_zfmisc_1 k7_numbers)) \quad (10)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (m1_subset_1 (k2_supinf_2 X0) k7_numbers) \quad (11)$$

Assume the following.

$$m1_subset_1 k2_supinf_1 k7_numbers \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v5_relat_1 X1 X0)) \Rightarrow (m1_subset_1 (k2_relset_1 X0 X1) (k1_zfmisc_1 X0)) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 k7_numbers))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((v1_funct_1 (k14_supinf_2 X0 X1 X2)) \wedge ((v1_funct_2 (k14_supinf_2 X0 X1 X2) X0 (k6_supinf_2 X1)) \wedge (m1_subset_1 (k14_supinf_2 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 (k6_supinf_2 X1)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 k7_numbers))\Rightarrow \\ & (\forall X2.((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((v2_supinf_2 X2 X0 X1)\Leftrightarrow \\ & (\neg r1_xreal_0 (k11_supinf_2 k7_numbers X0 X1 X2) k2_supinf_1))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 k7_numbers))\Rightarrow \\ & (\forall X2.((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((v1_supinf_2 X2 X0 X1)\Leftrightarrow \\ & (\neg r1_xreal_0 k1_supinf_1 (k10_supinf_2 k7_numbers X0 X1 X2)))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v2_membered X0)\Rightarrow(\forall X1.\forall X2.(m1_subset_1 \\ & X2 (k1_zfmisc_1 X0))\Rightarrow(\forall X3.((v1_funct_1 X3)\wedge(m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X2))))\Rightarrow(k11_supinf_2 X0 X1 X2 X3 = \\ & k7_supinf_2 (k2_relset_1 X2 X3)))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v2_membered X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & X0))\Rightarrow(v2_membered X1)) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v2_membered X0)\Rightarrow(\forall X1.(m1_subset_1 X1 X0)\Rightarrow \\ & (v1_xreal_0 X1)) \end{aligned} \quad (21)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((\neg v1_xboole_0 X1)\wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 k7_numbers)))\Rightarrow(\forall X2.((v1_funct_1 \\ & X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1))))))\Rightarrow((v2_supinf_2 X2 X0 X1)\Leftrightarrow(v1_supinf_2 (k14_supinf_2 \\ & X0 X1 X2) X0 (k6_supinf_2 X1)))))) \end{aligned}$$