

t8_afinsq_2

(TMFa143BzoFrWUas4rjLrcx26vqjwGkgwjm)

October 27, 2020

Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k23_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_afinsq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k7_nat_d : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((\\ v1_funct_1 X1) \wedge ((v5_ordinal1 X1) \wedge (v1_finset_1 X1)))) \Rightarrow ((\neg r1_xxreal_0 \\ (k1_afinsq_1 X1) X0) \Rightarrow (k1_afinsq_1 (k2_afinsq_2 X1 X0) = k10_binop_2 \\ (k1_afinsq_1 X1) X0))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(v7_ordinal1 X1) \Rightarrow ((\\ X0 \in X1) \Leftrightarrow (\neg r1_xxreal_0 X1 X0))) \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ (v1_xreal_0 X2) \Rightarrow ((r1_xxreal_0 X0 (k2_xcmplx_0 X1 X2)) \Leftrightarrow (r1_xxreal_0 \\ (k6_xcmplx_0 X0 X1) X2)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(v7_ordinal1 X1) \Rightarrow (\forall X2. \\ (v7_ordinal1 X2) \Rightarrow ((r1_xxreal_0 X0 X1) \Rightarrow (r1_xxreal_0 X0 (k2_xcmplx_0 \\ X1 X2)))))) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1\ X0)\wedge(v7_ordinal1\ X1))\Rightarrow(k23_binop_2\ X0\ X1 = k2_xcmplx_0\ X0\ X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1\ X1)\wedge(v4_relat_1\ X1\ X0))\Rightarrow(k1_relset_1\ X0\ X1 = k9_xtuple_0\ X1) \quad (6)$$

Assume the following.

$$\forall X0.((v1_relat_1\ X0)\wedge((v5_ordinal1\ X0)\wedge((v1_funct_1\ X0)\wedge(v1_finset_1\ X0))))\Rightarrow(k1_afinsq_1\ X0 = k1_card_1\ X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0\ X0)\wedge(v1_xreal_0\ X1))\Rightarrow(k10_binop_2\ X0\ X1 = k6_xcmplx_0\ X0\ X1) \quad (8)$$

Assume the following.

$$\forall X0.((v1_relat_1\ X0)\wedge((v5_ordinal1\ X0)\wedge((v1_funct_1\ X0)\wedge(v1_finset_1\ X0))))\Rightarrow(k1_card_1\ X0 = k9_xtuple_0\ X0) \quad (9)$$

Assume the following.

$$\forall X0.((v1_relat_1\ X0)\wedge((v5_ordinal1\ X0)\wedge((v1_funct_1\ X0)\wedge(v1_finset_1\ X0))))\Rightarrow(v7_ordinal1\ (k9_xtuple_0\ X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1\ X0)\wedge((v1_funct_1\ X0)\wedge((v5_ordinal1\ X0)\wedge(v1_finset_1\ X0))))\wedge(v7_ordinal1\ X1))\Rightarrow((v1_relat_1\ (k2_afinsq_2\ X0\ X1))\wedge((v1_funct_1\ (k2_afinsq_2\ X0\ X1))\wedge((v5_ordinal1\ (k2_afinsq_2\ X0\ X1))\wedge(v1_finset_1\ (k2_afinsq_2\ X0\ X1)))))) \quad (11)$$

Assume the following.

$$\forall X0.((v1_relat_1\ X0)\wedge((v1_funct_1\ X0)\wedge((v5_ordinal1\ X0)\wedge(v1_finset_1\ X0))))\Rightarrow(\forall X1.(v7_ordinal1\ X1)\Rightarrow(\forall X2.((v1_relat_1\ X2)\wedge((v1_funct_1\ X2)\wedge((v5_ordinal1\ X2)\wedge(v1_finset_1\ X2))))\Rightarrow((X2 = k2_afinsq_2\ X0\ X1)\Leftrightarrow((k1_afinsq_1\ X2 = k7_nat_d\ (k1_afinsq_1\ X0\ X1))\wedge(\forall X3.(v7_ordinal1\ X3)\Rightarrow((X3 \in k1_relset_1\ k5_numbers\ X2)\Rightarrow(k1_funct_1\ X2\ X3 = k1_funct_1\ X0\ (k23_binop_2\ X3\ X1)))))))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1\ X0)\wedge(v7_ordinal1\ X1))\Rightarrow(k23_binop_2\ X0\ X1 = k23_binop_2\ X1\ X0) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 \\ X0) \wedge (v1_finset_1 X0)))) \Rightarrow ((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge \\ ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (v1_xreal_0 X0) \quad (15)$$

Theorem 1

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(v7_ordinal1 X1) \Rightarrow (\forall X2. \\ ((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge ((v5_ordinal1 X2) \wedge (v1_finset_1 \\ X2)))) \Rightarrow ((\neg r1_xreal_0 (k1_afinsq_1 X2) (k23_binop_2 X0 X1)) \Rightarrow \\ (k1_funct_1 (k2_afinsq_2 X2 X1) X0 = k1_funct_1 X2 (k23_binop_2 \\ X0 X1)))))) \end{aligned}$$