

t9_rewrite3

(TMYz2pLbBMn2VVvcHTaotNyscgeUKvi76v6)

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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 $k8_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k1_flang_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $k1_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_0 : \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k3_catalan2 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v2_finseq_1 : \iota \Rightarrow o$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(\neg r1_xxreal_0 X0 X1) \wedge ((\neg v3_xxreal_0 X1) \wedge (\neg v2_xxreal_0 X0)))) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2.(v1_xreal_0 X2) \Rightarrow ((r1_xxreal_0 X0 X1) \Leftrightarrow (r1_xxreal_0 (k2_xcmplx_0 X0 X2) (k2_xcmplx_0 X1 X2)))))) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (3)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(r1_xxreal_0 X0 X1) \wedge ((\neg v2_xxreal_0 X1) \wedge (v2_xxreal_0 X0)))) \quad (4)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k6_xcmplx_0 X0 \ k6_numbers = X0) \quad (5)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k2_xcmplx_0 X0 \ k6_numbers = X0) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 \\ X0) \wedge (v1_finset_1 X0)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v5_ordinal1 \\ X1) \wedge ((v1_funct_1 X1) \wedge (v1_finset_1 X1)))) \Rightarrow (k1_afinsq_1 (k1_ordinal4 \\ X0 X1) = k2_nat_1 (k1_afinsq_1 X0) (k1_afinsq_1 X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow (k6_xcmplx_0 (k4_xcmplx_0 X0) (k4_xcmplx_0 X1) = k6_xcmplx_0 X1 X0) \quad (8)$$

Assume the following.

$$(m2_subset_1 np_0 k1_numbers k5_numbers) \wedge ((m1_subset_1 np_0 k5_numbers) \wedge (m1_subset_1 np_0 k1_numbers)) \quad (9)$$

Assume the following.

$$v1_xboole_0 np_0 \quad (10)$$

Assume the following.

$$k4_xcmplx_0 np_0 = np_0 \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \quad (12)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (13)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (14)$$

Assume the following.

$$\forall X0.k3_catalan2 X0 = k8_afinsq_1 X0 \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k5_numbers)\wedge(v7_ordinal1 X1))\Rightarrow(k2_nat_1 X0 X1 = k2_xcmplx_0 X0 X1) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_subset_1 X1 (k3_catalan2 X0))\wedge(m1_subset_1 X2 (k3_catalan2 X0)))\Rightarrow(k1_flang_1 X0 X1 X2 = k1_ordinal4 X1 X2) \quad (17)$$

Assume the following.

$$\exists X0.(v1_relat_1 X0)\wedge((v2_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge((v1_funct_1 X0)\wedge((\neg v1_xboole_0 X0)\wedge((v1_finset_1 X0)\wedge((v1_finseq_1 X0)\wedge(v2_finseq_1 X0))))))) \quad (18)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow(k4_xcmplx_0 (k4_xcmplx_0 X0) = X0) \quad (19)$$

Assume the following.

$$v6_membered k4_ordinal1 \quad (20)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow((v1_xcmplx_0 (k4_xcmplx_0 X0))\wedge(v1_xreal_0 (k4_xcmplx_0 X0))) \quad (21)$$

Assume the following.

$$v3_membered k1_numbers \quad (22)$$

Assume the following.

$$\forall X0.v4_funct_1 (k8_afinsq_1 X0) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.(((v2_xxreal_0 X0)\wedge(v1_xreal_0 X0))\wedge((\neg v2_xxreal_0 X1)\wedge(v1_xreal_0 X1)))\Rightarrow(v3_xxreal_0 (k6_xcmplx_0 X1 X0)) \quad (24)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v3_xxreal_0 X0)\wedge(v1_xreal_0 X0))\wedge((\neg v2_xxreal_0 X1)\wedge(v1_xreal_0 X1)))\Rightarrow(\neg v3_xxreal_0 (k6_xcmplx_0 X0 X1)) \quad (25)$$

Assume the following.

$$\forall X0.((\neg v3_xxreal_0 X0) \wedge (v1_xreal_0 X0)) \Rightarrow ((v1_xcmplx_0 (k4_xcmplx_0 X0)) \wedge (\neg v2_xxreal_0 (k4_xcmplx_0 X0))) \quad (26)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 X2 X0 X1) \Rightarrow (m1_subset_1 X2 X0)) \quad (27)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (28)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k5_numbers) \wedge (v7_ordinal1 X1)) \Rightarrow (m2_subset_1 (k2_nat_1 X0 X1) k1_numbers k5_numbers) \quad (29)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (m2_subset_1 (k1_afinsq_1 X0) k1_numbers k5_numbers) \quad (30)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow ((r1_xxreal_0 X0 X1) \vee (r1_xxreal_0 X1 X0)) \quad (31)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xcmplx_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow (k2_xcmplx_0 X0 X1 = k2_xcmplx_0 X1 X0) \quad (32)$$

Assume the following.

$$\forall X0. (v4_funct_1 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge (v1_funct_1 X1))) \quad (33)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow ((v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)))) \quad (34)$$

Assume the following.

$$\forall X0. ((\neg v1_xboole_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X0))) \Rightarrow ((v1_xxreal_0 X0) \wedge (v2_xxreal_0 X0)) \quad (35)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (36)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \quad (37)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (v1_xreal_0 X0) \quad (38)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\neg v3_xxreal_0 X0) \quad (39)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (40)$$

Assume the following.

$$\forall X0.(v6_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v7_ordinal1 X1)) \quad (41)$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xreal_0 X1)) \quad (42)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k8_afinsq_1 X0)) \Rightarrow ((v5_ordinal1 X1) \wedge (v1_finset_1 X1)) \quad (43)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k8_afinsq_1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k8_afinsq_1 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k8_afinsq_1 X0)) \Rightarrow ((X1 = k1_flang_1 X0 X2 X3) \Rightarrow (\\ & (r1_xxreal_0 (k1_afinsq_1 X2) (k1_afinsq_1 X1)) \wedge (r1_xxreal_0 \\ & (k1_afinsq_1 X3) (k1_afinsq_1 X1)))))) \end{aligned}$$