

t148_group_2 (TMJQCJk-
WBD827D8vgsVATRJt3M2Ra9XZB4C)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v8_struct_0 : \iota \Rightarrow o$ be given. Let $v2_group_1 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_group_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_nat_d : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_group_1 : \iota \Rightarrow \iota$ be given. Let $k4_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_group_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k7_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v1_card_1 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Let $v4_membered : \iota \Rightarrow o$ be given. Let $v5_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v8_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0))))) \Rightarrow (\forall X1.(m1_group_2 X1 X0) \Rightarrow (k7_group_1 X0 = k4_nat_1 (k7_group_1 X1) (k18_group_2 X0 X1))) \tag{1}$$

Assume the following.

$$\forall X0.((v8_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (k7_group_1 X0 = k7_struct_0 X0) \tag{2}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k5_numbers) \wedge (v7_ordinal1 X1)) \Rightarrow (k4_nat_1 X0 X1 = k3_xcmplx_0 X0 X1) \tag{4}$$

Assume the following.

$$\neg v1_finset_1 k4_ordinal1 \tag{5}$$

Assume the following.

$$v6_membered\ k4_ordinal1 \quad (6)$$

Assume the following.

$$v3_membered\ k1_numbers \quad (7)$$

Assume the following.

$$\forall X0.((v8_struct_0\ X0) \wedge (l1_struct_0\ X0)) \Rightarrow ((v7_ordinal1\ (k7_struct_0\ X0)) \wedge (v1_card_1\ (k7_struct_0\ X0))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0\ X0) \wedge ((\neg v1_xboole_0\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ X0)))) \Rightarrow (\forall X2.(m2_subset_1\ X2\ X0\ X1) \Rightarrow (m1_subset_1\ X2\ X0)) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0\ X0) \wedge ((v2_group_1\ X0) \wedge (l3_algstr_0\ X0))) \Rightarrow (\forall X1.(m1_group_2\ X1\ X0) \Rightarrow ((\neg v2_struct_0\ X1) \wedge ((v2_group_1\ X1) \wedge (l3_algstr_0\ X1)))) \quad (10)$$

Assume the following.

$$\forall X0.(l3_algstr_0\ X0) \Rightarrow (l1_struct_0\ X0) \quad (11)$$

Assume the following.

$$\forall X0.((v8_struct_0\ X0) \wedge (l1_struct_0\ X0)) \Rightarrow (m2_subset_1\ (k7_group_1\ X0)\ k1_numbers\ k5_numbers) \quad (12)$$

Assume the following.

$$m1_subset_1\ k5_numbers\ (k1_zfmisc_1\ k1_numbers) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0\ X0) \wedge ((v2_group_1\ X0) \wedge ((v3_group_1\ X0) \wedge (l3_algstr_0\ X0)))) \wedge (m1_group_2\ X1\ X0)) \Rightarrow (m1_subset_1\ (k18_group_2\ X0\ X1)\ k5_numbers) \quad (14)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(v7_ordinal1\ X1) \Rightarrow ((r1_nat_d\ X0\ X1) \Leftrightarrow (\exists X2.(v7_ordinal1\ X2) \wedge (X1 = k3_xcmplx_0\ X0\ X2)))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k5_numbers)\wedge(v7_ordinal1 X1))\Rightarrow(k4_nat_1 X0 X1 = k4_nat_1 X1 X0) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0)\wedge(v1_xcmplx_0 X1))\Rightarrow(k3_xcmplx_0 X0 X1 = k3_xcmplx_0 X1 X0) \quad (17)$$

Assume the following.

$$\forall X0.(v3_membered X0)\Rightarrow(v1_membered X0) \quad (18)$$

Assume the following.

$$\forall X0.(v4_membered X0)\Rightarrow(v3_membered X0) \quad (19)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v8_struct_0 X0)\wedge((v2_group_1 X0)\wedge((v3_group_1 X0)\wedge(l3_algstr_0 X0)))))\Rightarrow(\forall X1.(m1_group_2 X1 X0)\Rightarrow(v8_struct_0 X1)) \quad (20)$$

Assume the following.

$$\forall X0.(v5_membered X0)\Rightarrow(v4_membered X0) \quad (21)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(v1_xboole_0 X1)) \quad (22)$$

Assume the following.

$$\forall X0.(v6_membered X0)\Rightarrow(v5_membered X0) \quad (23)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0)\Rightarrow(v1_finset_1 X0) \quad (24)$$

Assume the following.

$$\forall X0.(v6_membered X0)\Rightarrow(\forall X1.(m1_subset_1 X1 X0)\Rightarrow(v7_ordinal1 X1)) \quad (25)$$

Assume the following.

$$\forall X0.(v1_membered X0)\Rightarrow(\forall X1.(m1_subset_1 X1 X0)\Rightarrow(v1_xcmplx_0 X1)) \quad (26)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v8_struct_0 X0)\wedge((v2_group_1 X0)\wedge((v3_group_1 X0)\wedge(l3_algstr_0 X0)))))\Rightarrow(\forall X1.(m1_group_2 X1 X0)\Rightarrow(r1_nat_d (k7_group_1 X1) (k7_group_1 X0)))$$