

t15_gr_cy_1 (TMLWXmfDDxLyhcbt- SkM9nJJxhdBm6WU9ihE)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_gr_cy_1 : \iota$ be given. Let $k2_group_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_binop_2 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_group_1 : \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ 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 $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $np_0 : \iota$ be given. Let $k7_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $k20_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $g3_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $v5_membered : \iota \Rightarrow o$ be given. Let $v15_algstr_0 : \iota \Rightarrow o$ be given. Let $u2_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k4_numbers : \iota$ be given. Let $k44_binop_2 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k3_xcmplx_0 np_1 X0 = X0) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k3_xcmplx_0 X0 k6_numbers = k6_numbers) \quad (3)$$

Assume the following.

$$k1_group_1 k2_gr_cy_1 = k6_numbers \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 \\ & X0) \wedge (l3_algstr_0 X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((k6_algstr_0 \\ & X0 X1 X2 = k1_group_1 X0) \Rightarrow ((X1 = k2_group_1 X0 X2) \wedge (X2 = k2_group_1 \\ & X0 X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_xcmplx_0 X0) \wedge ((v1_xcmplx_0 \\ & X1) \wedge (v1_xcmplx_0 X2))) \Rightarrow (k3_xcmplx_0 (k2_xcmplx_0 X0 X1) X2 = k2_xcmplx_0 \\ & (k3_xcmplx_0 X0 X2) (k3_xcmplx_0 X1 X2)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k3_xcmplx_0 X0 (k4_xcmplx_0 np_1) = k4_xcmplx_0 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (8)$$

Assume the following.

$$v1_xboole_0 np_0 \quad (9)$$

Assume the following.

$$k4_xcmplx_0 (k7_xcmplx_0 np_1 np_2) = k7_xcmplx_0 (k4_xcmplx_0 np_1) np_2 \quad (10)$$

Assume the following.

$$k4_xcmplx_0 (k4_xcmplx_0 np_2) = np_2 \quad (11)$$

Assume the following.

$$k4_xcmplx_0 (k4_xcmplx_0 np_1) = np_1 \quad (12)$$

Assume the following.

$$k3_xcmplx_0 (k7_xcmplx_0 (k4_xcmplx_0 np_1) np_2) np_2 = k4_xcmplx_0 np_1 \quad (13)$$

Assume the following.

$$k7_xcmplx_0 np_1 (k4_xcmplx_0 np_2) = k7_xcmplx_0 (k4_xcmplx_0 np_1) np_2 \quad (14)$$

Assume the following.

$$k2_xcmplx_0 (k4_xcmplx_0 np_1) (k4_xcmplx_0 np_1) = k4_xcmplx_0 np_2 \quad (15)$$

Assume the following.

$$k2_xcmplx_0 np_1 (k4_xcmplx_0 np_1) = np_0 \quad (16)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (17)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v1_int_1 X0)\wedge(v1_int_1 X1))\Rightarrow(k20_binop_2 X0 X1 = k2_xcmplx_0 X0 X1) \quad (19)$$

Assume the following.

$$\forall X0.(v1_int_1 X0)\Rightarrow(k19_binop_2 X0 = k4_xcmplx_0 X0) \quad (20)$$

Assume the following.

$$\forall X0.(v1_int_1 X0)\Rightarrow(k19_binop_2 (k19_binop_2 X0) = X0) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 (u1_struct_0 k2_gr_cy_1))\wedge (m1_subset_1 X1 (u1_struct_0 k2_gr_cy_1)))\Rightarrow(k6_algstr_0 k2_gr_cy_1 X0 X1 = k20_binop_2 X0 X1) \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.((v1_funct_1 X1)\wedge((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0))))))\Rightarrow(\forall X2.\forall X3.(g3_algstr_0 X0 X1 = g3_algstr_0 X2 X3)\Rightarrow((X0 = X2)\wedge(X1 = X3))) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(v1_xreal_0 X1))\Rightarrow(v1_xreal_0 (k7_xcmplx_0 X0 X1)) \quad (24)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(v1_xreal_0 X1))\Rightarrow(v1_xreal_0 (k3_xcmplx_0 X0 X1)) \quad (25)$$

Assume the following.

$$v6_membered\ k4_ordinal1 \quad (26)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0\ X0)\wedge(v1_xreal_0\ X1))\Rightarrow(v1_xreal_0\ (k2_xcmplx_0\ X0\ X1)) \quad (27)$$

Assume the following.

$$v5_membered\ (u1_struct_0\ k2_gr_cy_1) \quad (28)$$

Assume the following.

$$(\neg v2_struct_0\ k2_gr_cy_1)\wedge((v15_algstr_0\ k2_gr_cy_1)\wedge((v2_group_1\ k2_gr_cy_1)\wedge(v3_group_1\ k2_gr_cy_1))) \quad (29)$$

Assume the following.

$$\forall X0.(v1_xreal_0\ X0)\Rightarrow((v1_xcmplx_0\ (k4_xcmplx_0\ X0))\wedge(v1_xreal_0\ (k4_xcmplx_0\ X0))) \quad (30)$$

Assume the following.

$$\forall X0.(v1_int_1\ X0)\Rightarrow((v1_xcmplx_0\ (k4_xcmplx_0\ X0))\wedge(v1_int_1\ (k4_xcmplx_0\ X0))) \quad (31)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_algstr_0\ X0)\Rightarrow & ((v1_funct_1\ (u2_algstr_0\ X0))\wedge \\ & ((v1_funct_2\ (u2_algstr_0\ X0)\ (k2_zfmisc_1\ (u1_struct_0\ X0)\ (\\ & u1_struct_0\ X0))\ (u1_struct_0\ X0))\wedge(m1_subset_1\ (u2_algstr_0 \\ & X0)\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0\ X0)\ (\\ & u1_struct_0\ X0))\ (u1_struct_0\ X0)))))) \end{aligned} \quad (32)$$

Assume the following.

$$(\neg v2_struct_0\ k2_gr_cy_1)\wedge((v15_algstr_0\ k2_gr_cy_1)\wedge(l3_algstr_0\ k2_gr_cy_1)) \quad (33)$$

Assume the following.

$$\forall X0.(v1_int_1\ X0)\Rightarrow(m1_subset_1\ (k19_binop_2\ X0)\ k4_numbers) \quad (34)$$

Assume the following.

$$k2_gr_cy_1 = g3_algstr_0\ k4_numbers\ k44_binop_2 \quad (35)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0\ X0)\wedge(v1_xcmplx_0\ X1))\Rightarrow(k3_xcmplx_0\ X0\ X1 = k3_xcmplx_0\ X1\ X0) \quad (36)$$

Assume the following.

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

Assume the following.

$$\forall X0.(v1_int_1 X0) \Rightarrow (v1_xreal_0 X0) \quad (38)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (v1_int_1 X0) \quad (39)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_numbers) \Rightarrow (v1_int_1 X0) \quad (40)$$

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.

$$\forall X0.(v5_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_int_1 X1)) \quad (42)$$

Assume the following.

$$\forall X0.(l3_algstr_0 X0) \Rightarrow ((v15_algstr_0 X0) \Rightarrow (X0 = g3_algstr_0 (u1_struct_0 X0) (u2_algstr_0 X0))) \quad (43)$$

Theorem 1

$$\forall X0.(m1_subset_1 X0 (u1_struct_0 k2_gr_cy_1)) \Rightarrow (k2_group_1 k2_gr_cy_1 X0 = k19_binop_2 X0)$$