

t9_gr_cy_2 (TMTmSP-
tqWM2LSneca3Xd9YDCjHWxkv4C284)

October 27, 2020

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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $r1_nat_d : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_struct_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_group_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_group_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $k22_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 \\ X0) \wedge (l3_algstr_0 X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((r1_struct_0 \\ (k5_group_4 X0 (k6_domain_1 (u1_struct_0 X0) X2)) X1) \Leftrightarrow (\exists X3. \\ (v1_int_1 X3) \wedge (X1 = k5_group_1 X0 X3 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_int_1 X0) \Rightarrow (\forall X1.(v1_int_1 X1) \Rightarrow (\forall X2. \\ ((\neg v2_struct_0 X2) \wedge ((v2_group_1 X2) \wedge ((v3_group_1 X2) \wedge (l3_algstr_0 \\ X2)))) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X2)) \Rightarrow (k5_group_1 \\ X2 (k22_binop_2 X0 X1) X3 = k5_group_1 X2 X1 (k5_group_1 X2 X0 X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1_int_1 X0) \wedge (v1_int_1 X1)) \Rightarrow (k22_binop_2 \\ X0 X1 = k3_xcmplx_0 X0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v2_group_1 \\ X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0)))) \wedge ((v1_int_1 X1) \wedge (m1_subset_1 \\ X2 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k5_group_1 X0 X1 X2) (u1_struct_0 \\ X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(\forall X1.(v7_ordinal1\ X1)\Rightarrow((r1_nat_d\ X0\ X1)\Leftrightarrow(\exists X2.(v7_ordinal1\ X2)\wedge(X1 = k3_xcmplx_0\ X0\ X2)))) \quad (6)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k4_ordinal1)\Rightarrow(v7_ordinal1\ X0) \quad (7)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(v1_int_1\ X0) \quad (8)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0\ X0)\wedge((v2_group_1\ X0)\wedge((v3_group_1\ X0)\wedge(l3_algstr_0\ X0))))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ k5_numbers)\Rightarrow(\forall X3.(m1_subset_1\ X3\ k5_numbers)\Rightarrow((r1_nat_d\ X2\ X3)\Rightarrow(r1_struct_0\ (k5_group_4\ X0\ (k6_domain_1\ (u1_struct_0\ X0)\ (k5_group_1\ X0\ X2\ X1)))\ (k5_group_1\ X0\ X3\ X1))))))$$