

t27_topalg_5 (TMG-
pcD3wU9PmMsDmxRprPSePw9HtgLhLvR2)

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Let $v1_toprealb : \iota \Rightarrow o$ be given. Let $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_euclid : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r2_group_6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_gr_cy_1 : \iota$ be given. Let $k5_topalg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r1_group_6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $v1_borsuk_2 : \iota \Rightarrow o$ be given. Let $r2_borsuk_3 : \iota \Rightarrow \iota \Rightarrow o$ 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 $v15_algstr_0 : \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k7_toprealb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rltopsp1 : \iota \Rightarrow o$ be given. Let $l1_rltopsp1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $v1_compts_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 \\ & X0) \wedge (l3_algstr_0 X0)))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_group_1 \\ & X1) \wedge ((v3_group_1 X1) \wedge (l3_algstr_0 X1)))) \Rightarrow (\forall X2. ((\neg v2_struct_0 \\ & X2) \wedge ((v2_group_1 X2) \wedge ((v3_group_1 X2) \wedge (l3_algstr_0 X2)))) \Rightarrow \\ & (((r1_group_6 X0 X1) \wedge (r1_group_6 X1 X2)) \Rightarrow (r1_group_6 X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_pre_topc X1) \wedge ((v1_borsuk_2 \\ & X1) \wedge (l1_pre_topc X1)))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 X1)) \Rightarrow ((r2_borsuk_3 \\ & X0 X1) \Rightarrow (r2_group_6 (k5_topalg_1 X0 X2) (k5_topalg_1 X1 X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_toprealb\ X0)\wedge(m1_pre_topc\ X0\ (k15_euclid\ np_2)))\Rightarrow \\ & (\forall X1.((v1_toprealb\ X1)\wedge(m1_pre_topc\ X1\ (k15_euclid\ np_2)))\Rightarrow \\ & \quad (r2_borsuk_3\ X0\ X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0\ np_2)\wedge(m2_subset_1\ np_2\ k1_numbers\ k5_numbers))\wedge \\ & ((m1_subset_1\ np_2\ k5_numbers)\wedge(m1_subset_1\ np_2\ k1_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0\ X0)\wedge((v15_algstr_0\ X0)\wedge \\ & \quad ((v2_group_1\ X0)\wedge((v3_group_1\ X0)\wedge(l3_algstr_0\ X0))))))\wedge((\neg \\ & v2_struct_0\ X1)\wedge((v15_algstr_0\ X1)\wedge((v2_group_1\ X1)\wedge((v3_group_1 \\ & X1)\wedge(l3_algstr_0\ X1))))))\Rightarrow((r2_group_6\ X0\ X1)\Leftrightarrow(r1_group_6\ X0 \\ & X1)) \end{aligned} \quad (5)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_xxreal_0\ X0)\wedge(v1_xreal_0\ X0))\Rightarrow(\forall X1.(\\ & \quad m1_subset_1\ X1\ (u1_struct_0\ (k15_euclid\ np_2)))\Rightarrow(\forall X2. \\ & (m1_subset_1\ X2\ (u1_struct_0\ (k7_toprealb\ np_2\ X1\ X0)))\Rightarrow(r2_group_6 \\ & \quad k2_gr_cy_1\ (k5_topalg_1\ (k7_toprealb\ np_2\ X1\ X0)\ X2)))) \end{aligned} \quad (7)$$

Assume the following.

$$v6_membered\ k4_ordinal1 \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0)\Rightarrow(((v2_pre_topc\ (k15_euclid\ X0))\wedge \\ & ((v13_algstr_0\ (k15_euclid\ X0))\wedge((v2_rlvect_1\ (k15_euclid\ X0))\wedge \\ & ((v3_rlvect_1\ (k15_euclid\ X0))\wedge((v4_rlvect_1\ (k15_euclid\ X0))\wedge \\ & ((v5_rlvect_1\ (k15_euclid\ X0))\wedge((v6_rlvect_1\ (k15_euclid\ X0))\wedge \\ & ((v7_rlvect_1\ (k15_euclid\ X0))\wedge((v8_rlvect_1\ (k15_euclid\ X0))\wedge \\ & (v5_rltopsp1\ (k15_euclid\ X0)))))))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge \\ & (l1_pre_topc\ X0)))\wedge(m1_subset_1\ X1\ (u1_struct_0\ X0)))\Rightarrow(((v15_algstr_0 \\ & (k5_topalg_1\ X0\ X1))\wedge((v2_group_1\ (k5_topalg_1\ X0\ X1))\wedge(v3_group_1 \\ & (k5_topalg_1\ X0\ X1)))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc X0)))\wedge(m1_subset_1 X1 (u1_struct_0 X0)))\Rightarrow((\neg v2_struct_0(k5_topalg_1 X0 X1))\wedge(v15_algstr_0(k5_topalg_1 X0 X1))) \quad (11)$$

Assume the following.

$$(\neg v2_struct_0 k2_gr_cy_1)\wedge((v15_algstr_0 k2_gr_cy_1)\wedge((v2_group_1 k2_gr_cy_1)\wedge(v3_group_1 k2_gr_cy_1))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 (u1_struct_0(k15_euclid np_2)))\wedge((v1_xreal_0 X1)\wedge(v2_xxreal_0 X1)))\Rightarrow(v1_toprealb(k7_toprealb np_2 X0 X1)) \quad (13)$$

Assume the following.

$$\forall X0.\exists X1.m1_subset_1 X1 X0 \quad (14)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0)\Rightarrow(\forall X1.(m1_pre_topc X1 X0)\Rightarrow(l1_pre_topc X1)) \quad (15)$$

Assume the following.

$$\forall X0.(l1_rltopsp1 X0)\Rightarrow((l1_rlvect_1 X0)\wedge(l1_pre_topc X0)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7_ordinal1 X0)\wedge((m1_subset_1 X1 (u1_struct_0(k15_euclid X0)))\wedge(v1_xreal_0 X2)))\Rightarrow(m1_pre_topc(k7_toprealb X0 X1 X2)(k15_euclid X0)) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc X0)))\wedge(m1_subset_1 X1 (u1_struct_0 X0)))\Rightarrow((v15_algstr_0(k5_topalg_1 X0 X1))\wedge(l3_algstr_0(k5_topalg_1 X0 X1))) \quad (18)$$

Assume the following.

$$(\neg v2_struct_0 k2_gr_cy_1)\wedge((v15_algstr_0 k2_gr_cy_1)\wedge(l3_algstr_0 k2_gr_cy_1)) \quad (19)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow((v5_rltopsp1(k15_euclid X0))\wedge(l1_rltopsp1(k15_euclid X0))) \quad (20)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(v1_xreal_0\ X0) \quad (21)$$

Assume the following.

$$\forall X0.(m1_pre_topc\ X0\ (k15_euclid\ np_2))\Rightarrow((v1_toprealb\ X0)\Rightarrow((-v2_struct_0\ X0)\wedge((v1_compts_1\ X0)\wedge(v1_borsuk_2\ X0)))) \quad (22)$$

Assume the following.

$$\forall X0.((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\Rightarrow(\forall X1.(m1_pre_topc\ X1\ X0)\Rightarrow(v2_pre_topc\ X1)) \quad (23)$$

Assume the following.

$$\forall X0.(v6_membered\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ X0)\Rightarrow(v7_ordinal1\ X1)) \quad (24)$$

Theorem 1

$$\forall X0.((v1_toprealb\ X0)\wedge(m1_pre_topc\ X0\ (k15_euclid\ np_2)))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0))\Rightarrow(r2_group_6\ k2_gr_cy_1\ (k5_topalg_1\ X0\ X1)))$$