

t44_euclid
(TMFBNJQ6JuX8Kt8u8WdGC6377T9g22j6tJt)

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Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $m1_subset.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct.0 : \iota \Rightarrow \iota$ be given. Let $k15_euclid : \iota \Rightarrow \iota$ be given. Let $k4_algstr.0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_algstr.0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_rlvect.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct.0 : \iota \Rightarrow o$ be given. Let $v13_algstr.0 : \iota \Rightarrow o$ be given. Let $v3_rlvect.1 : \iota \Rightarrow o$ be given. Let $v4_rlvect.1 : \iota \Rightarrow o$ be given. Let $l2_algstr.0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $v2_rlvect.1 : \iota \Rightarrow o$ 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 $l2_struct.0 : \iota \Rightarrow o$ be given. Let $l1_algstr.0 : \iota \Rightarrow o$ be given. Let $l1_rlvect.1 : \iota \Rightarrow o$ be given. Let $l1_rltopsp1 : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(m1_subset.1 X1 (u1_struct.0 \\ (k15_euclid X0))) \Rightarrow (\forall X2.(m1_subset.1 X2 (u1_struct.0 (\\ k15_euclid X0))) \Rightarrow (k5_algstr.0 (k15_euclid X0) X1 X2 = k3_rlvect.1 \\ (k15_euclid X0) X1 (k4_algstr.0 (k15_euclid X0) X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct.0 X0) \wedge ((v13_algstr.0 X0) \wedge ((v3_rlvect.1 \\ X0) \wedge ((v4_rlvect.1 X0) \wedge (l2_algstr.0 X0)))))) \Rightarrow (\forall X1.(m1_subset.1 \\ X1 (u1_struct.0 X0)) \Rightarrow (\forall X2.(m1_subset.1 X2 (u1_struct.0 \\ X0)) \Rightarrow (k4_algstr.0 X0 (k5_algstr.0 X0 X1 X2) = k5_algstr.0 X0 X2 X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow ((v2_pre_topc (k15_euclid X0)) \wedge \\ ((v13_algstr.0 (k15_euclid X0)) \wedge ((v2_rlvect.1 (k15_euclid X0)) \wedge \\ ((v3_rlvect.1 (k15_euclid X0)) \wedge ((v4_rlvect.1 (k15_euclid X0)) \wedge \\ ((v5_rlvect.1 (k15_euclid X0)) \wedge ((v6_rlvect.1 (k15_euclid X0)) \wedge \\ ((v7_rlvect.1 (k15_euclid X0)) \wedge ((v8_rlvect.1 (k15_euclid X0)) \wedge \\ (v5_rltopsp1 (k15_euclid X0))))))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow ((\neg v2_struct.0 (k15_euclid X0)) \wedge (v5_rltopsp1 (k15_euclid X0))) \quad (4)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l1_rlvect_1 X0) \Rightarrow (l2_algstr_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.(l1_rltopsp1 X0) \Rightarrow ((l1_rlvect_1 X0) \wedge (l1_pre_topc X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((l2_algstr_0 X0) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow (m1_subset_1 (k4_algstr_0 X0 X1) (u1_struct_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow ((v5_rltopsp1 (k15_euclid X0)) \wedge (l1_rltopsp1 (k15_euclid X0))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2_rlvect_1 X0) \wedge (l1_algstr_0 X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k3_rlvect_1 X0 X1 X2 = k3_rlvect_1 X0 X2 X1) \quad (10)$$

Theorem 1

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow & (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & (k15_euclid X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 (\\ & k15_euclid X0))) \Rightarrow ((k4_algstr_0 (k15_euclid X0) (k5_algstr_0 \\ & (k15_euclid X0) X1 X2) = k5_algstr_0 (k15_euclid X0) X2 X1) \wedge (k4_algstr_0 \\ & (k15_euclid X0) (k5_algstr_0 (k15_euclid X0) X1 X2) = k3_rlvect_1 \\ & (k15_euclid X0) (k4_algstr_0 (k15_euclid X0) X1) X2)))) \end{aligned}$$