

t48_euclid_2

(TMPGcWhtZ57HAX4sqKPnJVZW45UbLrSTUeC)

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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 $k10_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_square_1 : \iota \Rightarrow \iota$ be given. Let $k12_euclid : \iota \Rightarrow \iota$ be given. Let $k3_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_4 : \iota$ be given. Let $k23_rvsum_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_euclid : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k4_rvsum_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_rvsum_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $v2_monoid_0 : \iota \Rightarrow o$ be given. Let $v5_rltopsp1 : \iota \Rightarrow o$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Let $l1_rltopsp1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v3_card_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_monoid_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (u1_struct_0 (k15_euclid X0) = k1_euclid X0) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v1_finseq_1 X0) \wedge (v3_valued_0 X0)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge ((v1_finseq_1 X1) \wedge (v3_valued_0 X1)))) \Rightarrow ((k3_finseq_1 X0 = k3_finseq_1 X1) \Rightarrow (k10_binop_2 (k5_square_1 (k12_euclid (k4_rvsum_1 X0 X1))) (k5_square_1 (k12_euclid (k8_rvsum_1 X0 X1))) = k11_binop_2 np_4 (k23_rvsum_1 X0 X1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (k3_finseq_1 X0 = k1_card_1 X0) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v7_ordinal1 \\ & X0)\wedge((m1_subset_1 X1 (u1_struct_0 (k15_euclid X0)))\wedge((m1_subset_1 \\ & X2 (u1_struct_0 (k15_euclid X0)))\wedge(((v1_relat_1 X3)\wedge((v1_funct_1 \\ & X3)\wedge((v1_finseq_1 X3)\wedge(v3_valued_0 X3))))\wedge((v1_relat_1 X4)\wedge \\ & ((v1_funct_1 X4)\wedge((v1_finseq_1 X4)\wedge(v3_valued_0 X4))))))\Rightarrow \\ & (((X1 = X3)\wedge(X2 = X4))\Rightarrow(k5_algstr_0 (k15_euclid X0) X1 X2 = k8_rvsum_1 \\ & X3 X4)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v7_ordinal1 \\ & X0)\wedge((m1_subset_1 X1 (u1_struct_0 (k15_euclid X0)))\wedge((m1_subset_1 \\ & X2 (u1_struct_0 (k15_euclid X0)))\wedge(((v1_relat_1 X3)\wedge((v1_funct_1 \\ & X3)\wedge((v1_finseq_1 X3)\wedge(v3_valued_0 X3))))\wedge((v1_relat_1 X4)\wedge \\ & ((v1_funct_1 X4)\wedge((v1_finseq_1 X4)\wedge(v3_valued_0 X4))))))\Rightarrow \\ & (((X1 = X3)\wedge(X2 = X4))\Rightarrow(k3_rlvect_1 (k15_euclid X0) X1 X2 = k4_rvsum_1 \\ & X3 X4)) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow((v2_monoid_0 (k15_euclid X0))\wedge (v5_rltopsp1 (k15_euclid X0))) \tag{6}$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow(v4_funct_1 (u1_struct_0 (k15_euclid X0))) \tag{7}$$

Assume the following.

$$\forall X0.(l1_rltopsp1 X0)\Rightarrow((l1_rlvect_1 X0)\wedge(l1_pre_topc X0)) \tag{8}$$

Assume the following.

$$\forall X0.(l1_pre_topc X0)\Rightarrow(l1_struct_0 X0) \tag{9}$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow((v5_rltopsp1 (k15_euclid X0))\wedge (l1_rltopsp1 (k15_euclid X0))) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.(v3_card_1 X1 X0)\Leftrightarrow(k1_card_1 X1 = X0) \tag{11}$$

Assume the following.

$$\forall X0.(v4_funct_1 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 X0)\Rightarrow((v1_relat_1 X1)\wedge(v1_funct_1 X1))) \tag{12}$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ (k15_euclid\ X0))) \Rightarrow (v3_card_1\ X1\ X0)) \quad (13)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ (k15_euclid\ X0))) \Rightarrow (v3_valued_0\ X1)) \quad (14)$$

Assume the following.

$$\forall X0.(l1_struct_0\ X0) \Rightarrow ((v2_monoid_0\ X0) \Rightarrow (v1_monoid_0\ X0)) \quad (15)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ (k15_euclid\ X0))) \Rightarrow (v1_finseq_1\ X1)) \quad (16)$$

Assume the following.

$$\forall X0.((v1_monoid_0\ X0) \wedge (l1_struct_0\ X0)) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow ((v1_relat_1\ X1) \wedge (v1_funct_1\ X1))) \quad (17)$$

Theorem 1

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ (k15_euclid\ X0))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (u1_struct_0\ (k15_euclid\ X0))) \Rightarrow (k10_binop_2\ (k5_square_1\ (k12_euclid\ (k3_rlvect_1\ (k15_euclid\ X0)\ X1\ X2)))\ (k5_square_1\ (k12_euclid\ (k5_algstr_0\ (k15_euclid\ X0)\ X1\ X2))) = k11_binop_2\ np_4\ (k23_rvsum_1\ X1\ X2))))$$