

t17_euclid_2 (TMFskwnrWKuEtGcwwtrrQ- Mou1gPKZH2KbiJ)

October 27, 2020

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 $k23_rvsum_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $np_4 : \iota$ 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 $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $k45_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k1_euclid : \iota \Rightarrow \iota$ be given. Let $k7_euclid : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_euclid : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_rvsum_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ (k15_euclid X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 (\\ k15_euclid X0))) \Rightarrow (\forall X3.((v1_relat_1 X3) \wedge ((v1_funct_1 \\ X3) \wedge (v3_valued_0 X3))) \Rightarrow (\forall X4.((v1_relat_1 X4) \wedge ((v1_funct_1 \\ X4) \wedge (v3_valued_0 X4))) \Rightarrow (((X1 = X3) \wedge (X2 = X4)) \Rightarrow (k5_algstr_0 (k15_euclid \\ X0) X1 X2 = k45_valued_1 X3 X4)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ (k15_euclid X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 (\\ k15_euclid X0))) \Rightarrow (\forall X3.((v1_relat_1 X3) \wedge ((v1_funct_1 \\ X3) \wedge (v3_valued_0 X3))) \Rightarrow (\forall X4.((v1_relat_1 X4) \wedge ((v1_funct_1 \\ X4) \wedge (v3_valued_0 X4))) \Rightarrow (((X1 = X3) \wedge (X2 = X4)) \Rightarrow (k3_rlvect_1 (k15_euclid \\ X0) X1 X2 = k1_valued_1 X3 X4)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.((v1_relat_1\ X1) \wedge ((\\ v1_funct_1\ X1) \wedge ((v1_finseq_1\ X1) \wedge (v3_valued_0\ X1)))) \Rightarrow (\forall X2. \\ ((v1_relat_1\ X2) \wedge ((v1_funct_1\ X2) \wedge ((v1_finseq_1\ X2) \wedge (v3_valued_0 \\ X2)))) \Rightarrow (\forall X3.(m2_finseq_2\ X3\ k1_numbers\ (k1_euclid\ X0)) \Rightarrow \\ (\forall X4.(m2_finseq_2\ X4\ k1_numbers\ (k1_euclid\ X0)) \Rightarrow (((X3 = \\ X1) \wedge (X4 = X2)) \Rightarrow (k23_rvsum_1\ X1\ X2 = k11_binop_2\ (k18_binop_2\ np_1 \\ np_4)\ (k10_binop_2\ (k5_square_1\ (k12_euclid\ (k7_euclid\ X0\ X3 \\ X4)))\ (k5_square_1\ (k12_euclid\ (k8_euclid\ X0\ X3\ X4)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (u1_struct_0\ (k15_euclid\ X0) = k1_euclid\ X0) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_2\ X1\ X0) \Rightarrow (\forall X2.(m2_finseq_2\ X2\ X0\ X1) \Leftrightarrow (m1_subset_1\ X2\ X1)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1_relat_1\ X0) \wedge ((v1_funct_1\ X0) \wedge ((\\ v3_valued_0\ X0) \wedge (v1_finseq_1\ X0)))) \wedge ((v1_relat_1\ X1) \wedge ((v1_funct_1 \\ X1) \wedge ((v3_valued_0\ X1) \wedge (v1_finseq_1\ X1)))))) \Rightarrow (k8_rvsum_1\ X0\ X1 = \\ k45_valued_1\ X0\ X1) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7_ordinal1\ X0) \wedge ((m1_subset_1\ X1\ (k1_euclid\ X0)) \wedge (m1_subset_1\ X2\ (k1_euclid\ X0)))) \Rightarrow (k8_euclid\ X0\ X1\ X2 = k45_valued_1\ X1\ X2) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7_ordinal1\ X0) \wedge ((m1_subset_1\ X1\ (k1_euclid\ X0)) \wedge (m1_subset_1\ X2\ (k1_euclid\ X0)))) \Rightarrow (k7_euclid\ X0\ X1\ X2 = k1_valued_1\ X1\ X2) \quad (8)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (v4_funct_1\ (u1_struct_0\ (k15_euclid\ X0))) \quad (9)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0) \Rightarrow (m1_finseq_2\ (k1_euclid\ X0)\ k1_numbers) \quad (10)$$

Assume the following.

$$\forall X0.(v4_funct_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_relat_1 X1) \wedge (v1_funct_1 X1)) \quad (11)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 (k15_euclid X0))) \Rightarrow (v3_valued_0 X1)) \quad (12)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 (k15_euclid X0))) \Rightarrow (v1_finseq_1 X1)) \quad (13)$$

Theorem 1

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ (k15_euclid X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 (\\ k15_euclid X0))) \Rightarrow (k23_rvsum_1 X1 X2 = k11_binop_2 (k18_binop_2 \\ np_1 np_4) (k10_binop_2 (k5_square_1 (k12_euclid (k3_rlvect_1 \\ (k15_euclid X0) X1 X2))) (k5_square_1 (k12_euclid (k5_algstr_0 \\ (k15_euclid X0) X1 X2))))))) \end{aligned}$$