

t43_euclid_4

(TMQhMHo29tnT2baAmER61RYAs2ZdJ5h9Wbt)

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 $k4_euclid_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ 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 $k2_euclid_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_euclid_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(m2_finseq_2 X1 k1_numbers \\ & (k1_euclid X0)) \Rightarrow (\forall X2.(m2_finseq_2 X2 k1_numbers (k1_euclid \\ & X0)) \Rightarrow (\forall X3.(m2_finseq_2 X3 k1_numbers (k1_euclid X0)) \Rightarrow \\ & (\forall X4.(m2_finseq_2 X4 k1_numbers (k1_euclid X0)) \Rightarrow (((X1 \in \\ & k2_euclid_4 X0 X2 X3) \wedge (X4 \in k2_euclid_4 X0 X2 X3)) \Rightarrow ((X1 = X4) \vee (r1_tarski \\ & (k2_euclid_4 X0 X2 X3) (k2_euclid_4 X0 X1 X4)))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v7_ordinal1 X0) \wedge ((m1_subset_1 \\ & X1 (u1_struct_0 (k15_euclid X0))) \wedge (m1_subset_1 X2 (u1_struct_0 \\ & (k15_euclid X0)))) \Rightarrow (k4_euclid_4 X0 X1 X2 = k3_euclid_4 X0 X1 X2) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & (k15_euclid X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 (\\ & k15_euclid X0))) \Rightarrow (\exists X3.(m2_finseq_2 X3 k1_numbers (k1_euclid \\ & X0)) \wedge (\exists X4.(m2_finseq_2 X4 k1_numbers (k1_euclid X0)) \wedge \\ & ((X1 = X3) \wedge ((X2 = X4) \wedge (k2_euclid_4 X0 X3 X4 = k3_euclid_4 X0 X1 X2)))))) \end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (u1_struct_0 \\ & \quad (k15_euclid\ X0))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (u1_struct_0\ (\\ & k15_euclid\ X0))) \Rightarrow (\forall X3.(m1_subset_1\ X3\ (u1_struct_0\ (k15_euclid \\ & \quad X0))) \Rightarrow (\forall X4.(m1_subset_1\ X4\ (u1_struct_0\ (k15_euclid\ X0))) \Rightarrow \\ & (((X1 \in k4_euclid_4\ X0\ X2\ X3) \wedge (X4 \in k4_euclid_4\ X0\ X2\ X3)) \Rightarrow ((X1 = X4) \vee \\ & \quad (r1_tarski\ (k4_euclid_4\ X0\ X2\ X3)\ (k4_euclid_4\ X0\ X1\ X4)))))) \end{aligned}$$