

t18_euclid (TM- SzW5RiH1GMuUjaRgWDf4Wih5LFWxsNAFq)

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Let $v7_ordinal1 : \iota \Rightarrow o$ 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 $k12_euclid : \iota \Rightarrow \iota$ be given. Let $k8_euclid : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k6_rvsum_1 : \iota \Rightarrow \iota$ be given. Let $k8_rvsum_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k45_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Let $v3_finseq_1 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v3_valued_0 \\ & X0) \wedge (v1_finseq_1 X0)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((v1_funct_1 \\ & X1) \wedge ((v3_valued_0 X1) \wedge (v1_finseq_1 X1)))) \Rightarrow (k6_rvsum_1 (k8_rvsum_1 \\ & X0 X1) = k8_rvsum_1 X1 X0)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v1_finseq_1 \\ & X0) \wedge (v3_valued_0 X0)))) \Rightarrow (k12_euclid (k6_rvsum_1 X0) = k12_euclid \\ & X0) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_finseq_2 X1 X0) \Rightarrow (\forall X2. (m2_finseq_2 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0)\wedge(v1_funct_1 X0)\wedge(v3_valued_0 X0)\wedge(v1_finseq_1 X0)))\wedge((v1_relat_1 X1)\wedge(v1_funct_1 X1)\wedge(v3_valued_0 X1)\wedge(v1_finseq_1 X1)))\Rightarrow(k8_rvsum_1 X0 X1 = k45_valued_1 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7_ordinal1 X0)\wedge((m1_subset_1 X1 (k1_euclid X0))\wedge(m1_subset_1 X2 (k1_euclid X0))))\Rightarrow(k8_euclid X0 X1 X2 = k45_valued_1 X1 X2) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_2 X1 X0)\Rightarrow(\forall X2.(m2_finseq_2 X2 X0 X1)\Rightarrow(m2_finseq_1 X2 X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0)\Rightarrow((v1_relat_1 X1)\wedge(v1_funct_1 X1)\wedge(v1_finseq_1 X1)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0)\wedge(v1_funct_1 X0)\wedge(v3_valued_0 X0)\wedge(v1_finseq_1 X0)))\wedge((v1_relat_1 X1)\wedge(v1_funct_1 X1)\wedge(v3_valued_0 X1)\wedge(v1_finseq_1 X1)))\Rightarrow(m2_finseq_1 (k8_rvsum_1 X0 X1) k1_numbers) \quad (9)$$

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.

$$\forall X0.\forall X1.(m1_finseq_2 X1 X0)\Rightarrow(v3_finseq_1 X1) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0)\Rightarrow(v5_relat_1 X1 X0) \quad (13)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v5_relat_1 X0 k1_numbers))\Rightarrow((v1_relat_1 X0)\wedge(v3_valued_0 X0)) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_2 X1 X0)\Rightarrow(v4_funct_1 X1) \quad (15)$$

Assume the following.

$$\forall X0.(v3_finseq_1 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 X0)\Rightarrow(v1_finseq_1 X1)) \quad (16)$$

Theorem 1

$$\begin{aligned} \forall X0.(v7_ordinal1 X0)\Rightarrow(\forall X1.(m2_finseq_2 X1 k1_numbers \\ (k1_euclid X0))\Rightarrow(\forall X2.(m2_finseq_2 X2 k1_numbers (k1_euclid \\ X0))\Rightarrow(k12_euclid (k8_euclid X0 X1 X2) = k12_euclid (k8_euclid X0 \\ X2 X1)))) \end{aligned}$$