

t24\_euclid.2 (TMTp-  
NWTv6dpG5yqz4SQPwEKfkWARuTVzDWH)

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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  $k23\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k1\_euclid : \iota \Rightarrow \iota$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k8\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $v4\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0 \\ (k15\_euclid\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ ( \\ k15\_euclid\ X0))) \Rightarrow (\forall X3.((v1\_relat\_1\ X3) \wedge ((v1\_funct\_1 \\ X3) \wedge (v3\_valued\_0\ X3))) \Rightarrow (\forall X4.((v1\_relat\_1\ X4) \wedge ((v1\_funct\_1 \\ X4) \wedge (v3\_valued\_0\ X4))) \Rightarrow (((X1 = X3) \wedge (X2 = X4)) \Rightarrow (k5\_algstr\_0\ (k15\_euclid \\ X0)\ X1\ X2 = k45\_valued\_1\ X3\ X4)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (u1\_struct\_0\ (k15\_euclid\ X0) = k1\_euclid\ X0) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge ((v3\_valued\_0 \\ X0) \wedge (v1\_finseq\_1\ X0)))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1 \\ X1) \wedge ((v3\_valued\_0\ X1) \wedge (v1\_finseq\_1\ X1)))) \Rightarrow (\forall X2.((v1\_relat\_1 \\ X2) \wedge ((v1\_funct\_1\ X2) \wedge ((v3\_valued\_0\ X2) \wedge (v1\_finseq\_1\ X2)))) \Rightarrow \\ (((k3\_finseq\_1\ X0 = k3\_finseq\_1\ X1) \wedge (k3\_finseq\_1\ X1 = k3\_finseq\_1 \\ X2)) \Rightarrow (k23\_rvsum\_1\ (k8\_rvsum\_1\ X0\ X1)\ X2 = k10\_binop\_2\ (k23\_rvsum\_1 \\ X0\ X2)\ (k23\_rvsum\_1\ X1\ X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v3\_valued\_0 X0)\wedge(v1\_finseq\_1 X0))))\wedge((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge((v3\_valued\_0 X1)\wedge(v1\_finseq\_1 X1))))))\Rightarrow(k8\_rsum\_1 X0 X1 = k45\_valued\_1 X0 X1) \quad (4)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow(k3\_finseq\_1 X0 = k1\_card\_1 X0) \quad (5)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(v4\_funct\_1 (u1\_struct\_0 (k15\_euclid X0))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(v3\_card\_1 X1 X0)\Leftrightarrow(k1\_card\_1 X1 = X0) \quad (7)$$

Assume the following.

$$\forall X0.(v4\_funct\_1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1))) \quad (8)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid X0)))\Rightarrow(v3\_card\_1 X1 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid X0)))\Rightarrow(v3\_valued\_0 X1)) \quad (10)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid X0)))\Rightarrow(v1\_finseq\_1 X1)) \quad (11)$$

**Theorem 1**

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid X0)))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid X0)))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k15\_euclid X0)))\Rightarrow(k23\_rsum\_1 (k5\_algstr\_0 (k15\_euclid X0) X1 X2) X3 = k10\_binop\_2 (k23\_rsum\_1 X1 X3) (k23\_rsum\_1 X2 X3))))))$$