

## t15\_euclid

(TMTEb6mxLWhokaqwwgB4qPZUc8Xy7nzBGt6)

October 27, 2020

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  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_euclid : \iota \Rightarrow \iota$  be given. Let  $k8\_euclid : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_euclid : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k6\_rvsum\_1 : \iota \Rightarrow \iota$  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  $k45\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k30\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_euclid : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m2\_finseq\_2 X1 k1\_numbers \\ (k1\_euclid X0)) \Rightarrow (\forall X2.(m2\_finseq\_2 X2 k1\_numbers (k1\_euclid \\ X0)) \Rightarrow (r1\_xxreal\_0 (k9\_real\_1 (k12\_euclid X1) (k12\_euclid X2)) \\ (k12\_euclid (k7\_euclid X0 X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 \\ X0) \wedge (v3\_valued\_0 X0)))) \Rightarrow (k12\_euclid (k6\_rvsum\_1 X0) = k12\_euclid \\ X0) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1\_finseq\_2 X1 X0) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v7\_ordinal1 X0) \wedge ((m1\_subset\_1 \\ X1 (k1\_euclid X0)) \wedge (m1\_subset\_1 X2 (k1\_euclid X0)))) \Rightarrow (k8\_euclid \\ X0 X1 X2 = k45\_valued\_1 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7\_ordinal1\ X0)\wedge((m1\_subset\_1\ X1\ (k1\_euclid\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_euclid\ X0))))\Rightarrow(k7\_euclid\ X0\ X1\ X2 = k1\_valued\_1\ X1\ X2) \quad (5)$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge((v3\_valued\_0\ X0)\wedge(v1\_finseq\_1\ X0))))\Rightarrow(k6\_rvsum\_1\ X0 = k30\_valued\_1\ X0) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_euclid\ X0)))\Rightarrow(k6\_euclid\ X0\ X1 = k30\_valued\_1\ X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2\ X1\ X0)\Rightarrow(\forall X2.(m2\_finseq\_2\ X2\ X0\ X1)\Rightarrow(m2\_finseq\_1\ X2\ X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0)\Rightarrow((v1\_funct\_1\ X1)\wedge((v1\_finseq\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ X0))))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_euclid\ X0)))\Rightarrow(m2\_finseq\_2\ (k6\_euclid\ X0\ X1)\ k1\_numbers\ (k1\_euclid\ X0)) \quad (10)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(m1\_finseq\_2\ (k1\_euclid\ X0)\ k1\_numbers) \quad (11)$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_valued\_0\ X0)))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_valued\_0\ X1))))\Rightarrow(k45\_valued\_1\ X0\ X1 = k1\_valued\_1\ X0\ (k30\_valued\_1\ X1)) \quad (12)$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v3\_valued\_0\ X0))\Rightarrow((v1\_relat\_1\ X0)\wedge(v1\_valued\_0\ X0)) \quad (13)$$

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.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow((v4\_relat\_1 X2 X0)\wedge(v5\_relat\_1 X2 X1)) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \quad (16)$$

**Theorem 1**

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(m2\_finseq\_2 X1 k1\_numbers (k1\_euclid X0))\Rightarrow(\forall X2.(m2\_finseq\_2 X2 k1\_numbers (k1\_euclid X0))\Rightarrow(r1\_xxreal\_0 (k9\_real\_1 (k12\_euclid X1) (k12\_euclid X2)) (k12\_euclid (k8\_euclid X0 X1 X2))))))$$