

# t4\_euclid\_8

(TMX68joS18WJkwppW8cY8MjjoPqDzJ59v4V)

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Let  $k12\_euclid : \iota \Rightarrow \iota$  be given. Let  $k2\_euclid\_8 : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k7\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $np\_3 : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_0 : \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k9\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k5\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  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  $k23\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k22\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k14\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k18\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_rvsum\_1 : \iota \Rightarrow \iota$  be given. Let  $k39\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_euclid : \iota \Rightarrow \iota$  be given. Let  $k1\_euclid\_8 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v3\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k18\_rvsum\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$k7\_square\_1 np\_1 = np\_1 \quad (2)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_3) \wedge (m2\_subset\_1 np\_3 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_3 k5\_numbers) \wedge (m1\_subset\_1 np\_3 k1\_numbers)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$(m2\_subset\_1\ np\_0\ k1\_numbers\ k5\_numbers) \wedge ((m1\_subset\_1\ np\_0\ k5\_numbers) \wedge (m1\_subset\_1\ np\_0\ k1\_numbers)) \quad (5)$$

Assume the following.

$$v1\_xboole\_0\ np\_0 \quad (6)$$

Assume the following.

$$k3\_xcmplx\_0\ np\_1\ np\_1 = np\_1 \quad (7)$$

Assume the following.

$$k3\_xcmplx\_0\ np\_0\ np\_0 = np\_0 \quad (8)$$

Assume the following.

$$k2\_xcmplx\_0\ np\_0\ np\_1 = np\_1 \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2\ X1\ X0) \Rightarrow (\forall X2.(m2\_finseq\_2\ X2\ X0\ X1) \Leftrightarrow (m1\_subset\_1\ X2\ X1)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0) \Leftrightarrow (m1\_finseq\_1\ X1\ X0) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0\ X0) \wedge (v1\_xreal\_0\ X1)) \Rightarrow (k9\_binop\_2\ X0\ X1 = k2\_xcmplx\_0\ X0\ X1) \quad (12)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (13)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers) \Rightarrow (k5\_square\_1\ X0 = k3\_square\_1\ X0) \quad (14)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v3\_valued\_0\ X0) \wedge (v1\_finseq\_1\ X0)))) \wedge ((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v3\_valued\_0\ X1) \wedge (v1\_finseq\_1\ X1)))) \Rightarrow (k23\_rvsum\_1\ X0\ X1 = k22\_rvsum\_1\ X0\ X1) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v3\_valued\_0 X0)\wedge(v1\_finseq\_1 X0))))\wedge((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge((v3\_valued\_0 X1)\wedge(v1\_finseq\_1 X1))))\Rightarrow(k14\_rvsum\_1 X0 X1 = k18\_valued\_1 X0 X1) \quad (17)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v3\_valued\_0 X0)\wedge(v1\_finseq\_1 X0))))\Rightarrow(k12\_rvsum\_1 X0 = k39\_valued\_1 X0) \quad (18)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(\forall X1.(m1\_subset\_1 X1 k1\_numbers)\Rightarrow(\forall X2.(m1\_subset\_1 X2 k1\_numbers)\Rightarrow(\forall X3.(m2\_finseq\_2 X3 k1\_numbers (k1\_euclid np\_3))\Rightarrow((X3 = k1\_euclid\_8 X0 X1 X2)\Rightarrow(k23\_rvsum\_1 X3 X3 = k9\_binop\_2 (k9\_binop\_2 (k5\_square\_1 X0) (k5\_square\_1 X1)) (k5\_square\_1 X2)))))) \quad (19)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(v3\_finseq\_1 (k1\_euclid X0)) \quad (20)$$

Assume the following.

$$v6\_membered k4\_ordinal1 \quad (21)$$

Assume the following.

$$v3\_membered k1\_numbers \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2 X1 X0)\Rightarrow(\forall X2.(m2\_finseq\_2 X2 X0 X1)\Rightarrow(m2\_finseq\_1 X2 X0)) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1))) \quad (24)$$

Assume the following.

$$m2\_finseq\_2 k2\_euclid\_8 k1\_numbers (k1\_euclid np\_3) \quad (25)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(m1\_finseq\_2 (k1\_euclid X0) k1\_numbers) \quad (26)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow (k39\_valued\_1 X0 = k18\_valued\_1 X0 X0) \quad (27)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 X0) \wedge (v3\_valued\_0 X0)))) \Rightarrow (k12\_euclid X0 = k7\_square\_1 (k18\_rvsum\_1 (k12\_rvsum\_1 X0))) \quad (28)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k3\_square\_1 X0 = k3\_xcmplx\_0 X0 X0) \quad (29)$$

Assume the following.

$$k2\_euclid\_8 = k1\_euclid\_8 \text{ np\_1 } k6\_numbers \text{ k6\_numbers} \quad (30)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v3\_valued\_0 X0) \wedge (v1\_finseq\_1 X0)))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge ((v3\_valued\_0 X1) \wedge (v1\_finseq\_1 X1)))) \Rightarrow (k22\_rvsum\_1 X0 X1 = k18\_rvsum\_1 (k14\_rvsum\_1 X0 X1))) \quad (31)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k9\_binop\_2 X0 X1 = k9\_binop\_2 X1 X0) \quad (32)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v3\_valued\_0 X0)) \Rightarrow ((v1\_relat\_1 X0) \wedge (v1\_valued\_0 X0)) \quad (33)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0) \Rightarrow (v5\_relat\_1 X1 X0) \quad (34)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v5\_relat\_1 X0 \text{ k1\_numbers})) \Rightarrow ((v1\_relat\_1 X0) \wedge (v3\_valued\_0 X0)) \quad (35)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 \text{ k1\_numbers}) \Rightarrow (v1\_xcmplx\_0 X0) \quad (36)$$

Assume the following.

$$\forall X0.(v6\_membered X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow (v7\_ordinal1 X1)) \quad (37)$$

Assume the following.

$$\forall X0.(v3\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow (v1\_xreal\_0\ X1)) \quad (38)$$

Assume the following.

$$\forall X0.(v3\_finseq\_1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow (v1\_finseq\_1\ X1)) \quad (39)$$

**Theorem 1**  $k12\_euclid\ k2\_euclid\_8 = np\_1$ .