

## l19\_euclid\_8

(TMa69xobgbpxyYND4KjVoZ3ZHs3WGA3LT4z)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_euclid\_8 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_euclid\_8 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k11\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_euclid : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1\_relat\_1 X3) \wedge \\ & ((v1\_funct\_1 X3) \wedge (v1\_finseq\_1 X3))) \Rightarrow ((X3 = k11\_finseq\_1 X0 X1 \\ & X2) \Leftrightarrow ((k3\_finseq\_1 X3 = np\_3) \wedge ((k1\_funct\_1 X3 np\_1 = X0) \wedge ((k1\_funct\_1 \\ & X3 np\_2 = X1) \wedge (k1\_funct\_1 X3 np\_3 = X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 X0))) \Rightarrow (k1\_seq\_1 X0 X1 = k1\_funct\_1 X0 X1) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1\_xreal\_0 X0) \wedge ((v1\_xreal\_0 \\ & X1) \wedge (v1\_xreal\_0 X2))) \Rightarrow (k1\_euclid\_8 X0 X1 X2 = k11\_finseq\_1 X0 X1 \\ & X2) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1\_relat\_1 (k11\_finseq\_1 X0 X1 X2)) \wedge (v1\_funct\_1 (k11\_finseq\_1 X0 X1 X2)) \tag{4}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1\_xreal\_0 X0) \wedge ((v1\_xreal\_0 X1) \wedge (v1\_xreal\_0 X2))) \Rightarrow (v3\_valued\_0 (k11\_finseq\_1 X0 X1 X2)) \tag{5}$$

Assume the following.

$$v3\_membered\ k1\_numbers \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.v1\_finseq\_1\ (k11\_finseq\_1\ X0\ X1\ X2) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_xreal\_0\ X0)\wedge((v1\_xreal\_0\ X1)\wedge(v1\_xreal\_0\ X2)))\Rightarrow(m2\_finseq\_2\ (k1\_euclid\_8\ X0\ X1\ X2)\ k1\_numbers\ (k1\_euclid\ np\_3)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(m2\_finseq\_2\ X0\ k1\_numbers\ (k1\_euclid\ np\_3))\Rightarrow(\forall X1. \\ (m2\_finseq\_2\ X1\ k1\_numbers\ (k1\_euclid\ np\_3))\Rightarrow(k5\_euclid\_8\ X0 \\ X1 = k1\_euclid\_8\ (k10\_binop\_2\ (k11\_binop\_2\ (k1\_seq\_1\ X0\ np\_2) \\ (k1\_seq\_1\ X1\ np\_3))\ (k11\_binop\_2\ (k1\_seq\_1\ X0\ np\_3)\ (k1\_seq\_1 \\ X1\ np\_2)))\ (k10\_binop\_2\ (k11\_binop\_2\ (k1\_seq\_1\ X0\ np\_3)\ (k1\_seq\_1 \\ X1\ np\_1))\ (k11\_binop\_2\ (k1\_seq\_1\ X0\ np\_1)\ (k1\_seq\_1\ X1\ np\_3))) \\ (k10\_binop\_2\ (k11\_binop\_2\ (k1\_seq\_1\ X0\ np\_1)\ (k1\_seq\_1\ X1\ np\_2)) \\ (k11\_binop\_2\ (k1\_seq\_1\ X0\ np\_2)\ (k1\_seq\_1\ X1\ np\_1)))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(v3\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow(v1\_xreal\_0\ X1)) \quad (10)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(\forall X1.(m1\_subset\_1 \\ X1\ k1\_numbers)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ k1\_numbers)\Rightarrow(\forall X3. \\ (m1\_subset\_1\ X3\ k1\_numbers)\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ k1\_numbers)\Rightarrow \\ (\forall X5.(m1\_subset\_1\ X5\ k1\_numbers)\Rightarrow(k5\_euclid\_8\ (k1\_euclid\_8 \\ X0\ X1\ X2)\ (k1\_euclid\_8\ X3\ X4\ X5) = k1\_euclid\_8\ (k10\_binop\_2\ (k11\_binop\_2 \\ X1\ X5)\ (k11\_binop\_2\ X2\ X4))\ (k10\_binop\_2\ (k11\_binop\_2\ X2\ X3)\ (k11\_binop\_2 \\ X0\ X5))\ (k10\_binop\_2\ (k11\_binop\_2\ X0\ X4)\ (k11\_binop\_2\ X1\ X3)))))) \end{aligned}$$