

## t9\_cardfin2

(TMZ9sWXvnau25z1A2j2buDoF8F6WbD8fufb)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k18\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k17\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k10\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_cardfin2 : \iota \Rightarrow \iota$  be given. Let  $k12\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_newton : \iota \Rightarrow \iota$  be given. Let  $k8\_power : \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k2\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_binop\_2 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k7\_binop\_2 : \iota \Rightarrow \iota$  be given. Let  $k11\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k25\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k1\_newton : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k23\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_xxreal\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v1\_xboole\_0 X0) \wedge (v1\_finset\_1 X0)) \Rightarrow (\exists X1. \\
 & (v1\_xxreal\_0 X1) \wedge ((X1 \in k2\_rcomp\_1 (k19\_binop\_2 np\_1) k6\_numbers) \wedge \\
 & (k10\_binop\_2 (k5\_card\_1 (k2\_cardfin2 X0)) (k12\_binop\_2 (k3\_newton \\
 & (k5\_card\_1 X0)) k8\_power) = k7\_binop\_2 (k11\_binop\_2 (k3\_newton \\
 & (k5\_card\_1 X0)) (k12\_binop\_2 (k11\_binop\_2 (k25\_sin\_cos X1) (k1\_newton \\
 & (k19\_binop\_2 np\_1) (k23\_binop\_2 (k5\_card\_1 X0) np\_1))) (k3\_newton \\
 & (k23\_binop\_2 (k5\_card\_1 X0) np\_1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v7\_ordinal1\ X0)\wedge(v2\_xxreal\_0\ X0))\Rightarrow(\forall X1. \\ & (v1\_xxreal\_0\ X1)\Rightarrow(\neg(\neg r1\_xxreal\_0\ k6\_numbers\ X1)\wedge(r1\_xxreal\_0 \\ & (k18\_binop\_2\ np\_1\ np\_2)\ (k17\_complex1\ (k7\_binop\_2\ (k11\_binop\_2 \\ & (k3\_newton\ X0)\ (k12\_binop\_2\ (k11\_binop\_2\ (k25\_sin\_cos\ X1)\ (k1\_newton \\ & (k19\_binop\_2\ np\_1)\ (k23\_binop\_2\ X0\ np\_1))))))\ (k3\_newton\ (k23\_binop\_2 \\ & X0\ np\_1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xxreal\_0\ X1)\Rightarrow(\forall X2. \\ & (v1\_xxreal\_0\ X2)\Rightarrow((X0 \in k4\_xxreal\_1\ X1\ X2)\Leftrightarrow((\neg r1\_xxreal\_0\ X0\ X1)\wedge \\ & (\neg r1\_xxreal\_0\ X2\ X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0\ np\_3)\wedge(m2\_subset\_1\ np\_3\ k1\_numbers\ k5\_numbers))\wedge \\ & ((m1\_subset\_1\ np\_3\ k5\_numbers)\wedge(m1\_subset\_1\ np\_3\ k1\_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0\ np\_2)\wedge(m2\_subset\_1\ np\_2\ k1\_numbers\ k5\_numbers))\wedge \\ & ((m1\_subset\_1\ np\_2\ k5\_numbers)\wedge(m1\_subset\_1\ np\_2\ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0\ np\_1)\wedge(m2\_subset\_1\ np\_1\ k1\_numbers\ k5\_numbers))\wedge \\ & ((m1\_subset\_1\ np\_1\ k5\_numbers)\wedge(m1\_subset\_1\ np\_1\ k1\_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$k6\_xcmplx\_0\ np\_2\ np\_3 = k4\_xcmplx\_0\ np\_1 \quad (7)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (8)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (9)$$

Assume the following.

$$\forall X0.(v1\_finset\_1\ X0)\Rightarrow(k5\_card\_1\ X0 = k1\_card\_1\ X0) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1\_xxreal\_0\ X0)\wedge(v1\_xxreal\_0\ X1))\Rightarrow( \\ & k2\_rcomp\_1\ X0\ X1 = k4\_xxreal\_1\ X0\ X1) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow (k19\_binop\_2 X0 = k4\_xcmplx\_0 X0) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (v1\_xreal\_0 (k6\_xcmplx\_0 X0 X1)) \quad (13)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow ((\neg v1\_xboole\_0 (k1\_card\_1 X0)) \wedge (v1\_card\_1 (k1\_card\_1 X0))) \quad (14)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (15)$$

Assume the following.

$$\forall X0.(v1\_finset\_1 X0) \Rightarrow (m1\_subset\_1 (k5\_card\_1 X0) k4\_ordinal1) \quad (16)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0) \wedge ((\neg v2\_xxreal\_0 X0) \wedge (\neg v3\_xxreal\_0 X0))) \Rightarrow ((v1\_xboole\_0 X0) \wedge (v1\_xxreal\_0 X0)) \quad (17)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (18)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v7\_ordinal1 X0) \quad (19)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (20)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (21)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\neg v3\_xxreal\_0 X0) \quad (22)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_int\_1 X0) \quad (23)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (24)$$

**Theorem 1**

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge (v1\_finset\_1 X0)) \Rightarrow (\neg r1\_xxreal\_0 (k18\_binop\_2 np\_1 np\_2) (k17\_complex1 (k10\_binop\_2 (k5\_card\_1 (k2\_cardfin2 X0)) (k12\_binop\_2 (k3\_newton (k5\_card\_1 X0)) k8\_power))))$$