

## t63\_card\_2

(TMcU9P9V4Yjq38gquHW7cncWgJePo6mvKrN)

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Let  $r3_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_card_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_5 : \iota$  be given. Let  $k2\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_4 : \iota$  be given. Let  $v1\_finset_1 : \iota \Rightarrow o$  be given. Let  $k2\_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k2\_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v2\_xxreal_0 : \iota \Rightarrow o$  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  $k2\_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \neg(X0 \neq X1) \wedge ((X0 \neq X2) \wedge \\ & ((X0 \neq X3) \wedge ((X1 \neq X2) \wedge ((X1 \neq X3) \wedge ((X2 \neq X3) \wedge (k5\_card_1 (k2\_enumset1 \\ & X0 X1 X2 X3) \neq np\_4)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v1\_finset_1 X1) \Rightarrow ((\neg X0 \in X1) \Rightarrow (k5\_card_1 \\ & (k2\_xboole_0 X1 (k1\_tarski X0)) = k2\_nat_1 (k5\_card_1 X1) np\_1)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. k3\_enumset1 \\ & X0 X1 X2 X3 X4 = k2\_xboole_0 (k2\_enumset1 X0 X1 X2 X3) (k1\_tarski X4) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal_0 np\_4) \wedge (m2\_subset_1 np\_4 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset_1 np\_4 k5\_numbers) \wedge (m1\_subset_1 np\_4 k1\_numbers)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal_0 np\_1) \wedge (m2\_subset_1 np\_1 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset_1 np\_1 k5\_numbers) \wedge (m1\_subset_1 np\_1 k1\_numbers)) \end{aligned} \tag{5}$$

Assume the following.

$$k2\_xcmplx_0 np\_4 np\_1 = np\_5 \tag{6}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers)\wedge(v7\_ordinal1 X1))\Rightarrow(k2\_nat\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.v1\_finset\_1 (k2\_enumset1 X0 X1 X2 X3) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(r3\_zfmisc\_1 X0 X1 X2 X3 X4)\Leftrightarrow((X0\neq X1)\wedge((X0\neq X2)\wedge((X0\neq X3)\wedge((X0\neq X4)\wedge((X1\neq X2)\wedge((X1\neq X3)\wedge((X1\neq X4)\wedge((X2\neq X3)\wedge((X2\neq X4)\wedge(X3\neq X4)))))))))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(X4 = k2\_enumset1 X0 X1 X2 X3)\Leftrightarrow(\forall X5.(X5 \in X4)\Leftrightarrow(\neg(X5\neq X0)\wedge((X5\neq X1)\wedge((X5\neq X2)\wedge(X5\neq X3)))))) \quad (11)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (12)$$

**Theorem 1**

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(r3\_zfmisc\_1 X0 X1 X2 X3 X4)\Rightarrow(k5\_card\_1 (k3\_enumset1 X0 X1 X2 X3 X4) = np\_5)$$