

## t27\_card\_fin

(TMKzMHUs91wmPaJWHEsVzVVzWQrTrPDfNb9)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_card\_fin : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_tarski : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X1) \Rightarrow (k9\_xtuple\_0 (k5\_relat\_1 X1 X0) = k3\_xboole\_0 (k9\_xtuple\_0 X1) X0) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow ((X0 \in k9\_xtuple\_0 (k5\_relat\_1 X2 X1)) \Rightarrow (k1\_funct\_1 (k5\_relat\_1 X2 X1) X0 = k1\_funct\_1 X2 X0)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v1\_relat\_1 (k5\_relat\_1 X0 X1)) \wedge (v1\_funct\_1 (k5\_relat\_1 X0 X1))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X0) \Rightarrow (v1\_relat\_1 (k5\_relat\_1 X0 X1)) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \wedge ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1))) \Rightarrow (m1\_subset\_1 (k2\_card\_fin X0 X1 X2) (k1\_zfmisc\_1 (k3\_tarski (k10\_xtuple\_0 X0)))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k3\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (X3 \in X1))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.\forall X3.(m1\_subset\_1 \\ X3 (k1\_zfmisc\_1 (k3\_tarski (k10\_xtuple\_0 X0)))) \Rightarrow ((X3 = k2\_card\_fin \\ X0 X1 X2) \Leftrightarrow (\forall X4.(X4 \in X3) \Leftrightarrow ((X4 \in k3\_tarski (k10\_xtuple\_0 X0)) \wedge \\ (\forall X5.((X5 \in k9\_xtuple\_0 X1) \wedge (k1\_funct\_1 X1 X5 = X2)) \Rightarrow (X4 \in \\ k1\_funct\_1 X0 X5))))))) \end{aligned} \quad (9)$$

**Theorem 1**

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 \\ X2)) \Rightarrow (\forall X3.((v1\_relat\_1 X3) \wedge (v1\_funct\_1 X3)) \Rightarrow (r1\_tarski \\ (k2\_card\_fin X2 X3 X0) (k2\_card\_fin X2 (k5\_relat\_1 X3 X1) X0))) \end{aligned}$$