

## t2\_card\_3 (TMHqXPzer- mxb4KuXc wdYGVsW81L6BhEUseB)

October 27, 2020

Let  $k1\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $k7\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_card\_3 : \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (X1 \in X0) \Rightarrow (k1\_funct\_1 (k2\_funcop\_1 X0 X2) X1 = X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (k9\_xtuple\_0 (k2\_funcop\_1 X0 X1) = X0) \wedge (r1\_tarski (k10\_xtuple\_0 (k2\_funcop\_1 X0 X1)) (k1\_tarski X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. k7\_funcop\_1 X0 X1 = k2\_funcop\_1 X0 X1 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 (k2\_funcop\_1 X0 X1)) \wedge (v1\_funct\_1 (k2\_funcop\_1 X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v1\_relat\_1 (k1\_card\_3 X0)) \wedge ((v1\_funct\_1 (k1\_card\_3 X0)) \wedge (v1\_card\_3 (k1\_card\_3 X0)))) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. k2\_funcop\_1 X0 X1 = k2\_zfmisc\_1 X0 (k1\_tarski X1) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_card\_3 X1))) \Rightarrow ((X1 = k1\_card\_3 \\ X0) \Leftrightarrow ((k9\_xtuple\_0 X1 = k9\_xtuple\_0 X0) \wedge (\forall X2.(X2 \in k9\_xtuple\_0 \\ X0) \Rightarrow (k1\_funct\_1 X1 X2 = k1\_card\_1 (k1\_funct\_1 X0 X2)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X0 = X1) \Leftrightarrow ((k9\_xtuple\_0 X0 = \\ k9\_xtuple\_0 X1) \wedge (\forall X2.(X2 \in k9\_xtuple\_0 X0) \Rightarrow (k1\_funct\_1 \\ X0 X2 = k1\_funct\_1 X1 X2)))))) \end{aligned} \quad (8)$$

**Theorem 1**

$$\forall X0. \forall X1. k1\_card\_3 (k7\_funcop\_1 X0 X1) = k7\_funcop\_1 X0 (k1\_card\_1 X1)$$