

# t107\_card\_3 (TM- RmB6yxuTiR6BfG1SNyGLuSRmkrNCFwYHB)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v2\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_funct\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X0 \in k4\_card\_3 X1) \Leftrightarrow ((k9\_xtuple\_0 \\ X0 = k9\_xtuple\_0 X1) \wedge (\forall X2.(X2 \in k9\_xtuple\_0 X1) \Rightarrow (k1\_funct\_1 \\ X0 X2 \in k1\_funct\_1 X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (v1\_partfun1 X1 X0 \Leftrightarrow (k1\_relset\_1 X0 X1 = X0)) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((v5\_funct\_1 X1 X0) \Leftrightarrow (\forall X2. \\ (X2 \in k9\_xtuple\_0 X1) \Rightarrow (k1\_funct\_1 X1 X2 \in k1\_funct\_1 X0 X2)))))) \end{aligned} \quad (4)$$

**Theorem 1**

$$\begin{aligned} \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v2\_relat\_1 X1) \wedge ((v4\_relat\_1 \\ X1 X0) \wedge ((v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0)))))) \Rightarrow (\forall X2. \\ ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 X0) \wedge ((v1\_funct\_1 X2) \wedge ((v5\_funct\_1 \\ X2 X1) \wedge (v1\_partfun1 X2 X0)))))) \Rightarrow (X2 \in k4\_card\_3 X1)) \end{aligned}$$