

t21\_funct\_1  
(TMXjVxLSgSCXLUgAY3yEP2xYoywxe3jjF9z)

October 27, 2020

Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(k9\_xtuple\_0 (k4\_relat\_1 X0) = X0) \wedge (k10\_xtuple\_0 (k4\_relat\_1 X0) = X0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2. \\ & ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow ((X0 \in k9\_xtuple\_0 (k3\_relat\_1 \\ & X2 X1)) \Leftrightarrow ((X0 \in k9\_xtuple\_0 X2) \wedge (k1\_funct\_1 X2 X0 \in k9\_xtuple\_0 X1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k4\_relat\_1 X0)) \wedge (v1\_funct\_1 (k4\_relat\_1 X0)) \quad (3)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 \\ & X2)) \Rightarrow ((X0 \in k9\_xtuple\_0 (k3\_relat\_1 X2 (k4\_relat\_1 X1))) \Leftrightarrow ((X0 \in \\ & k9\_xtuple\_0 X2) \wedge (k1\_funct\_1 X2 X0 \in X1))) \end{aligned}$$