

t22\_funct\_6  
(TMUtXoZ8Hh1sdt1aoShPmjcEsC2KydaT7Vz)

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  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funct\_6 : \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_6 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k8\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_6 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X0 \in k8\_relat\_1 X1 (k1\_funct\_6 (k10\_xtuple\_0 X1))) \Leftrightarrow ((X0 \in k9\_xtuple\_0 X1) \wedge ((v1\_relat\_1 (k1\_funct\_1 X1 X0)) \wedge (v1\_funct\_1 (k1\_funct\_1 X1 X0)))))) \quad (1)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v1\_relat\_1 (k3\_funct\_6 X0)) \wedge (v1\_funct\_1 (k3\_funct\_6 X0))) \quad (2)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v1\_relat\_1 (k2\_funct\_6 X0)) \wedge (v1\_funct\_1 (k2\_funct\_6 X0))) \quad (3)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X1 = k3\_funct\_6 X0) \Leftrightarrow ((k9\_xtuple\_0 X1 = k8\_relat\_1 X0 (k1\_funct\_6 (k10\_xtuple\_0 X0))) \wedge (\forall X2. (X2 \in k8\_relat\_1 X0 (k1\_funct\_6 (k10\_xtuple\_0 X0))) \Rightarrow (k1\_funct\_1 X1 X2 = k10\_xtuple\_0 (k1\_funct\_1 X0 X2)))))) \quad (4)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X1 = k2\_funct\_6 X0) \Leftrightarrow ((k9\_xtuple\_0 X1 = k8\_relat\_1 X0 (k1\_funct\_6 (k10\_xtuple\_0 X0))) \wedge (\forall X2. (X2 \in k8\_relat\_1 X0 (k1\_funct\_6 (k10\_xtuple\_0 X0))) \Rightarrow (k1\_funct\_1 X1 X2 = k9\_xtuple\_0 (k1\_funct\_1 X0 X2)))))) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ & v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X0 = X1) \Leftrightarrow ((k9\_xtuple\_0 X0 = \\ & k9\_xtuple\_0 X1) \wedge (\forall X2.(X2 \in k9\_xtuple\_0 X0) \Rightarrow (k1\_funct\_1 \\ & X0 X2 = k1\_funct\_1 X1 X2)))))) \end{aligned} \quad (6)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2. \\ & ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow (((X0 \in k9\_xtuple\_0 X1) \wedge (X2 = \\ & k1\_funct\_1 X1 X0)) \Rightarrow ((X0 \in k9\_xtuple\_0 (k2\_funct\_6 X1)) \wedge ((k1\_funct\_1 \\ & (k2\_funct\_6 X1) X0 = k9\_xtuple\_0 X2) \wedge ((X0 \in k9\_xtuple\_0 (k3\_funct\_6 \\ & X1)) \wedge (k1\_funct\_1 (k3\_funct\_6 X1) X0 = k10\_xtuple\_0 X2)))))) \end{aligned}$$