

t39\_funct\_1  
(TMXFLdUycEQx7Lg41MMbY1uV61Jm2PS5i6i)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v2\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funct\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v2\_funct\_1 X0) \Rightarrow \\ & ((k9\_xtuple\_0 (k3\_relat\_1 (k2\_funct\_1 X0) X0) = k10\_xtuple\_0 X0) \wedge \\ & (k10\_xtuple\_0 (k3\_relat\_1 (k2\_funct\_1 X0) X0) = k10\_xtuple\_0 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v2\_funct\_1 X0) \Rightarrow \\ & ((k9\_xtuple\_0 (k3\_relat\_1 X0 (k2\_funct\_1 X0)) = k9\_xtuple\_0 X0) \wedge \\ & (k10\_xtuple\_0 (k3\_relat\_1 X0 (k2\_funct\_1 X0)) = k9\_xtuple\_0 X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((( \\ & v2\_funct\_1 X1) \wedge (X0 \in k10\_xtuple\_0 X1)) \Rightarrow ((X0 = k1\_funct\_1 X1 (k1\_funct\_1 \\ & (k2\_funct\_1 X1) X0)) \wedge (X0 = k1\_funct\_1 (k3\_relat\_1 (k2\_funct\_1 \\ & X1) X1) X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((( \\ & v2\_funct\_1 X1) \wedge (X0 \in k9\_xtuple\_0 X1)) \Rightarrow ((X0 = k1\_funct\_1 (k2\_funct\_1 \\ & X1) (k1\_funct\_1 X1 X0)) \wedge (X0 = k1\_funct\_1 (k3\_relat\_1 X1 (k2\_funct\_1 \\ & X1) X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X1 = \\ & k4\_relat\_1 X0) \Leftrightarrow ((k9\_xtuple\_0 X1 = X0) \wedge (\forall X2. (X2 \in X0) \Rightarrow (k1\_funct\_1 \\ & X1 X2 = X2)))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge(v1\_funct\_1 X0))\wedge((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1)))\Rightarrow((v1\_relat\_1 (k3\_relat\_1 X0 X1))\wedge(v1\_funct\_1 (k3\_relat\_1 X0 X1))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1 (k3\_relat\_1 X0 X1) \quad (7)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge(v1\_funct\_1 X0))\Rightarrow((v1\_relat\_1 (k2\_funct\_1 X0))\wedge(v1\_funct\_1 (k2\_funct\_1 X0))) \quad (8)$$

**Theorem 1**

$$\forall X0.((v1\_relat\_1 X0)\wedge(v1\_funct\_1 X0))\Rightarrow((v2\_funct\_1 X0)\Rightarrow(((k3\_relat\_1 X0 (k2\_funct\_1 X0) = k4\_relat\_1 (k9\_xtuple\_0 X0))\wedge(k3\_relat\_1 (k2\_funct\_1 X0) X0 = k4\_relat\_1 (k10\_xtuple\_0 X0))))))$$