

## t106\_funct\_7

(TMRmBPx17T7SiHAtjYkE8eN8fyxy8Anku89)

October 27, 2020

Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_funct\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.((k5\_relat\_1 X0 \\ X2 = k5\_relat\_1 X1 X2) \wedge (r1\_funct\_7 X0 X1 X2)) \Rightarrow (X0 = X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (k5\_relat\_1 X0 (k9\_xtuple\_0 X0) = X0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1.(v1\_relat\_1 X1) \Rightarrow (r1\_tarski (k9\_xtuple\_0 (k5\_relat\_1 X1 X0)) X0) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.(r1\_tarski (k9\_xtuple\_0 \\ X1) X2) \Rightarrow (r1\_funct\_7 X0 (k1\_funct\_4 X0 X1) X2))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge \\ (v1\_funct\_1 X2)) \Rightarrow (\forall X3.((r1\_funct\_7 X0 X1 X3) \wedge (r1\_funct\_7 \\ X1 X2 X3)) \Rightarrow (r1\_funct\_7 X0 X2 X3)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.(r1\_funct\_7 X0 X1 \\ X2) \Rightarrow (r1\_funct\_7 X1 X0 X2))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (k5\_relat\_1 (k1\_funct\_4 X0 X1) (k9\_xtuple\_0 X1) = X1)) \quad (7)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow (\forall X3.(r1\_funct\_7 X0 X1 X3) \Rightarrow (r1\_funct\_7 (k1\_funct\_4 X0 X2) (k1\_funct\_4 X1 X2) X3)))) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v1\_relat\_1 (k5\_relat\_1 X0 X1)) \wedge (v1\_funct\_1 (k5\_relat\_1 X0 X1))) \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \wedge ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1))) \Rightarrow ((v1\_relat\_1 (k1\_funct\_4 X0 X1)) \wedge (v1\_funct\_1 (k1\_funct\_4 X0 X1))) \quad (10)$$

**Theorem 1**

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow ((k1\_funct\_4 X0 X2 = k1\_funct\_4 X1 X2) \Leftrightarrow (r1\_funct\_7 X0 X1 (k9\_xtuple\_0 X2))))))$$