

# t25\_funcop\_1 (TMcbFXRRAmuLtb- syYxzKjXkqXN9zW6E1SJY)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge \\ (v1\_funct\_1 X2)) \Rightarrow (k13\_funct\_3 (k3\_relat\_1 X2 X0) (k3\_relat\_1 \\ X2 X1) = k3\_relat\_1 X2 (k13\_funct\_3 X0 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(v1\_relat\_1 X1) \Rightarrow (\forall X2. \\ (v1\_relat\_1 X2) \Rightarrow (k3\_relat\_1 (k3\_relat\_1 X0 X1) X2 = k3\_relat\_1 \\ X0 (k3\_relat\_1 X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \wedge (( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1))) \Rightarrow ((v1\_relat\_1 (k3\_relat\_1 X0 \\ X1)) \wedge (v1\_funct\_1 (k3\_relat\_1 X0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1 (k3\_relat\_1 X0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \wedge (( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1))) \Rightarrow ((v1\_relat\_1 (k13\_funct\_3 \\ X0 X1)) \wedge (v1\_funct\_1 (k13\_funct\_3 X0 X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge \\ (v1\_funct\_1 X2)) \Rightarrow (k3\_funcop\_1 X0 X1 X2 = k3\_relat\_1 (k13\_funct\_3 \\ X1 X2) X0))) \end{aligned} \quad (6)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ & \quad v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge \\ & \quad (v1\_funct\_1 X2)) \Rightarrow (\forall X3.((v1\_relat\_1 X3) \wedge (v1\_funct\_1 X3)) \Rightarrow \\ & \quad (k3\_relat\_1 X2 (k3\_funcop\_1 X3 X0 X1) = k3\_funcop\_1 X3 (k3\_relat\_1 \\ & \quad \quad X2 X0) (k3\_relat\_1 X2 X1)))))) \end{aligned}$$